MEDIA COVERAGE

July 2008 – August 2008

11th International Coral Reef Symposium

Fort Lauderdale, Florida, USA

July 7-11, 2008

http://www.nova.edu/ncri/11icrs/media_newsroom.html

11th International Coral Reef Symposium
Fort Lauderdale, Florida, USA
July 7–11, 2008

2008 Clip Book for the 11th International Coral Reef Symposium
Compiled by SeaWeb

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Media Synopsis

The 11th International Coral Reef Symposium was covered by the Associated Press, Reuters, Bloomberg, Agence France-Presse, United Press International, *Los Angeles Times, The Guardian, The Washington Post, USA Today, The Independent, Nature, Science, New Scientist, Time,* National Public Radio, Australian Broadcasting Corporation, and *NBC Nightly News*, among many others.

SeaWeb assisted in generating more than 500 print, broadcast, radio, television, and Internet-based stories, including some generated by wire services and widely distributed by these powerful "message multipliers." For example, Inter Press Service alone has a potential pick-up in more than 500 newspapers and magazines around the world with approximately 200 million readers. After an exhaustive search, we have counted stories that appeared on more than 107 television programs, 35 radio stations and in more than 380 print and online media outlets.

Overall, we estimate that the potential news reach for the 11th ICRS will have totaled more than 800 million people.

SeaWeb's Media Outreach for ICRS was made possible by the following organizations:

The 11th International Coral Reef Symposium Local Organizing Committee
The Lucile and David Packard Foundation
Mote Marine Laboratory's Protect Our Reefs Grant Program
The National Fish and Wildlife Foundation
The National Oceanic and Atmospheric Administration

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Television Coverage

Station	Program	Location	State	Date	Time	DMA	Est. Audience
WTVJ-TV Ch 6 (NBC)	Today in South Florida	Miami/Fort Lauderdale	FL	7/7/08	05:30-06:00	16	23,378
WTVJ-TV Ch 6 (NBC)	Today in South Florida	Miami/Fort Lauderdale	FL	7/7/08	06:30-07:00	16	51,585
KTRK-TV Ch 13 (ABC)	Eyewitness News At 4:00	Houston	TX	7/7/08	16:00-17:00	10	not available
WPTV-TV Ch. 5 (NBC)	Live On 5	West Palm Beach/Fort Pierce	FL	7/7/08	17:00-17:30	38	94,491
WPTV-TV Ch. 5 (NBC)	Live On 5	West Palm Beach/Fort Pierce	FL	7/7/08	17:00-17:30	38	94,491
KITV-TV Ch 4 (ABC)	KITV 4 News At 5	Honolulu	HI	7/7/08	17:00-17:30	73	not available
WTXL-TV Ch 27 (ABC)	ABC 27 News At 5:00	Tallahassee/ Thomasville	FL	7/7/08	17:00-17:30	108	not available
WGGB-TV Ch 40 (ABC)	ABC 40 News At 5	Springfield/ Holyoke	MA	7/7/08	17:00-17:30	109	not available
KABC-TV Ch 7 (ABC)	Eyewitness News At Five	Los Angeles	CA	7/7/08	17:00-18:00	2	not available
WJRT-TV Ch 12 (ABC)	ABC12 News At Five	Flint/Saginaw/ Bay City	MI	7/7/08	17:00-18:00	66	not available
WCVB-TV Ch 5 (ABC)	Newscenter 5 At 5:30	Boston	MA	7/7/08	17:30-18:00	7	not available
WPTV-TV Ch. 5 (NBC)	News Channel 5 At 6:00	West Palm Beach/Fort Pierce	FL	7/7/08	18:00-18:30	38	116,820
ABC National	World News w/ Charles Gibson	National	Nat'l	7/7/08	18:30-19:00	-	7,623,000
WTVJ-TV Ch 6 (NBC)	South Florida Nightly News At 7 PM	Miami/Fort Lauderdale	FL	7/7/08	19:00-19:30	16	not available
WSFL-TV Ch 39 (CW)	CW News At 10	Miami/Fort Lauderdale	FL	7/7/08	22:00-22:30	16	40,516
KECI-TV Ch 13	News At 10	Missoula	MT	7/7/08	22:00-22:35	167	20,718

(NBC)							
WAOW-TV Ch 9 (ABC)	Newsline 9 At 10	Wausau/ Rhinelander	WI	7/7/08	22:00-22:35	134	not available
WDHN-TV Ch 18 (ABC)	News 18 At Ten	Dothan	AL	7/7/08	22:00-22:35	172	not available
KIFI-TV Ch 8 (ABC)	Local News 8 Newsline	Idaho Falls	ID	7/7/08	22:35-23:05	163	not available
KDRV-TV Ch 12 (ABC)	Newswatch 12 At 11 PM	Medford/ Klamath Falls	OR	7/7/08	23:00-23:35	140	9,497
ABC National	World News Now	National	Nat'l	7/8/08	03:30-04:00	-	not available
ABC National	America This Morning	National	Nat'l	7/8/08	04:30-05:00	-	not available
WTVJ-TV Ch 6 (NBC)	Today in South Florida	Miami/Fort Lauderdale	FL	7/8/08	05:00-05:30	16	16,405
WTVJ-TV Ch 6 (NBC)	Today in South Florida	Miami/Fort Lauderdale	FL	7/8/08	05:00-05:30	16	16,405
WTHR-TV Ch 13 (NBC)	Eyewitness News Sunrise At 5:00	Indianapolis	IN	7/8/08	05:00-05:30	26	30,634
WGAL-TV Ch 8 (NBC)	News 8 Today At 5:00 AM	Harrisburg/ Lancaster/ Lebanon/York	PA	7/8/08	05:00-05:30	41	19,436
WNWO-TV Ch 24 (NBC)	NBC 24 News Early Today	Toledo	OH	7/8/08	05:00-05:30	72	898
KSBW-TV Ch 8 (NBC)	Action News At 5AM	Monterey/ Salinas	CA	7/8/08	05:00-05:30	124	3,612
WHO-TV Ch 13 (NBC)	Today in Iowa At 5 AM	Des Moines/ Ames	IA	7/8/08	05:00-05:30	71	not available
KXAS-TV Ch 5 (NBC)	NBC 5 News The Early Report	Dallas/Fort Worth	TX	7/8/08	05:00-06:00	5	51,348
WTLV-TV Ch 12 (NBC)	Good Morning Jacksonville Sunrise	Jacksonville/ Brunswick	FL/ GA	7/8/08	05:00-06:00	49	24,414
KJRH-TV Ch 2 (NBC)	Channel 2 News Today	Tulsa	OK	7/8/08	05:00-06:00	60	12,451
WBBH-TV Ch. 20 (NBC)	NBC 2 News Today	Fort Myers/ Naples	FL	7/8/08	05:00-06:00	63	18,443

WAND-TV Ch 17 (NBC)	Good Morning Central Illinois	Champaign/ Springfield	IL	7/8/08	05:00-06:00	84	4,456
WMTV-TV Ch 15 (NBC)	The Morning Show	Madison	WI	7/8/08	05:00-06:00	85	11,707
KWWL-TV Ch 7 (NBC)	Early Today In Iowa	Cedar Rapids/ Waterloo	MI	7/8/08	05:00-06:00	87	13,110
WNDU-TV Ch. 16 (NBC)	16 Morning News	South Bend/ Elkhart	IN	7/8/08	05:00-06:00	89	10,812
WPTZ-TV Ch 5 (NBC)	Newschannel 5 Today At 5AM	Burlington/ Plattsburgh	VT/ NY	7/8/08	05:00-06:00	92	6,689
KWQC-TV Ch 6 (NBC)	KWQC TV 6 Quad Cities Today	Davenport/ Rock Island/ Moline	IA	7/8/08	05:00-06:00	96	13,762
KRIS-TV Ch 6 (NBC)	6 News At Sunrise	Corpus Christi	TX	7/8/08	05:00-06:00	129	3,894
WJFW-TV Ch 12 (NBC)	Newswatch 12 At 5 AM	Wausau/ Rhinelander	WI	7/8/08	05:00-06:00	134	1,785
WECT-TV Ch 6 (NBC)	Carolina In The Morning	Wilmington	NC	7/8/08	05:00-06:00	135	8,815
KTVE-TV Ch 10 (NBC)	Region 10 Today	Monroe/El Dorado	LA/ AR	7/8/08	05:00-06:00	136	2,428
WICU-TV Ch 12 (NBC)	12 News Today	Erie	PA	7/8/08	05:00-06:00	142	4,223
KMIR-TV Ch 36 (NBC)	KMIR 6 Today	Palm Springs/ Palm Desert	CA	7/8/08	05:00-06:00	144	1,053
WJHG-TV Ch 7 (NBC)	NewsChannel 7 Today	Panama City	FL	7/8/08	05:00-06:00	154	5,028
WETM-TV Ch 18 (NBC)	18 News Today	Elmira/ Horseheads	NY	7/8/08	05:00-06:00	173	5,105
WRC-TV Ch 4 (NBC)	News 4 Today	Washington, DC	DC	7/8/08	05:00-06:00	9	not available
WNCN-TV Ch 17 (NBC)	NBC 17 News At 5:30	Raleigh/ Durham	NC	7/8/08	05:30-06:00	28	7,475
KNWA-TV Ch 51 (NBC)	KNWA Early Today	Smith/ Fayetteville/ Springdale/	AR	7/8/08	05:30-06:00	102	1,124

		Rogers					
WITN-TV Ch 7 (NBC)	WITN News Early unrise	Greenville/ New Bern/ Washington	NC	7/8/08	05:30-06:00	105	not available
WTVJ-TV Ch 6 (NBC)	Today in South Florida	Miami/Fort Lauderdale	FL	7/8/08	06:00-06:30	16	37,648
WTVJ-TV Ch 6 (NBC)	Today in South Florida	Miami/Fort Lauderdale	FL	7/8/08	06:00-06:30	16	37,648
KTUU-TV Ch 2 (NBC)	Channel 2 News: Morning Edition	Anchorage	AK	7/8/08	06:00-07:00	150	9,436
WFLA-TV Ch 8 (NBC)	News Channel 8 Today	Tampa/St. Petersburg	FL	7/8/08	06:00-07:00	13	82,965
WNCN-TV Ch 17 (NBC)	NBC 17 News At 6:00	Raleigh/ Durham	NC	7/8/08	06:00-07:00	28	27,033
WTLV-TV Ch 12 (NBC)	Good Morning Jacksonville	Jacksonville/ Brunswick	FL/ GA	7/8/08	06:00-07:00	49	52,731
WMTV-TV Ch 15 (NBC)	The Morning Show	Madison	WI	7/8/08	06:00-07:00	85	31,984
KWWL-TV Ch 7 (NBC)	Today in Iowa	Cedar Rapids/ Waterloo	MI	7/8/08	06:00-07:00	87	26,636
WCYB-TV Ch 5 (NBC)	Newscenter 5 Morning	Tri-Cities	TN/ VA	7/8/08	06:00-07:00	91	34,554
WPTZ-TV Ch 5 (NBC)	Newschannel 5 Today At 6AM	Burlington/ Plattsburgh	VT/ NY	7/8/08	06:00-07:00	92	16,330
WSAV-TV Ch 3 (NBC)	WSAV News 3: Coastal Sunrise	Savannah	GA	7/8/08	06:00-07:00	97	8,917
WITN-TV Ch 7 (NBC)	WITN News At Sunrise	Greenville/ New Bern/ Washington	NC	7/8/08	06:00-07:00	105	25,949
WFMJ-TV Ch 21 (NBC)	WFMJ Today	Youngstown	OH	7/8/08	06:00-07:00	106	30,901
KDLT-TV Ch 46 (NBC)	KDLT Today	Sioux Falls/ Mitchell	SD	7/8/08	06:00-07:00	114	1,998
KSBW-TV Ch 8 (NBC)	Action News Sunrise	Monterey/ Salinas	CA	7/8/08	06:00-07:00	124	17,297
KRIS-TV Ch 6 (NBC)	6 News At Sunrise	Corpus Christi	TX	7/8/08	06:00-07:00	129	10,877

WJFW-TV Ch 12 (NBC)	Newswatch 12 At 6 AM	Wausau/ Rhinelander	WI	7/8/08	06:00-07:00	134	5,140
WECT-TV Ch 6 (NBC)	Carolina In The Morning	Wilmington	NC	7/8/08	06:00-07:00	135	23,908
KTUU-TV Ch 2 (NBC)	Channel 2 News: Morning Edition	Anchorage	AK	7/8/08	06:00-07:00	150	9,436
WJHG-TV Ch 7 (NBC)	NewsChannel 7 Today	Panama City	FL	7/8/08	06:00-07:00	154	9,735
KECI-TV Ch 13 (NBC)	Montana Today	Missoula	MT	7/8/08	06:00-07:00	167	9,678
KULR-TV Ch 8 (NBC)	Today In Montana	Billings	MT	7/8/08	06:00-07:00	170	5,678
WGEM-TV Ch 10 (NBC)	WGEM News At Sunrise	Quincy/ Hannibal/ Keokuk	IL/ MO	7/8/08	06:00-07:00	171	9,830
WLUC-TV Ch 6 (NBC)	TV6 Morning News	Marquette	MI	7/8/08	06:00-07:00	179	10,717
WVIR-TV Ch 29 (NBC)	NBC29 News At Sunrise	Charlottesville	VA	7/8/08	06:00-07:00	181	14,402
KTVM-TV Ch 42 (NBC)	Montana Today	Butte/ Bozeman	MT	7/8/08	06:00-07:00	194	2,443
WHIZ-TV Ch 18 (NBC)	Sunrise In Southeastern Ohio	Zanesville	OH	7/8/08	06:00-07:00	202	3,904
WGGB-TV Ch 40 (ABC)	ABC 40 News At 6:00 AM	Springfield/ Holyoke	MA	7/8/08	06:00-07:00	109	not available
WFLA-TV Ch 8 (NBC)	The Midday Report	Tampa/St. Petersburg	FL	7/8/08	11:00-12:00	13	31,334
KPRC-TV Ch 2 (NBC)	Local 2 News At 11 AM	Houston	TX	7/8/08	11:00-12:00	10	25,728
WVTM-TV Ch 13 (NBC)	NBC 13 News Midday	Birmingham/ Anniston	AL	7/8/08	11:00-12:00	40	25,993
WFLA-TV Ch 8 (NBC)	The Midday Report	Tampa/St. Petersburg	FL	7/8/08	11:00-12:00	13	31,334
WVTM-TV Ch 13 (NBC)	NBC 13	Birmingham/ Anniston	AL	7/8/08	11:00-12:00	40	25,993
KNOP-TV Ch 2 (NBC)	News 2 At 11:30	North Platte	NE	7/8/08	11:30-12:00	209	1,609

KNOP-TV Ch 2 (NBC)	News 2 At 11:30	North Platte	NE	7/8/08	11:30-12:00	209	1,609
WXII-TV Ch. 12 (NBC)	Newschannel 12 At Noon	Greensboro/ Winston-Salem	NC	7/8/08	12:00-12:30	46	32,882
WNDU-TV Ch. 16 (NBC)	NewsCenter 16 At Noon	South Bend/ Elkhart	IN	7/8/08	12:00-12:30	89	15,452
WFMJ-TV Ch 21 (NBC)	21 News Mid-Day Report	Youngstown	OH	7/8/08	12:00-12:30	106	20,480
WGEM-TV Ch 10 (NBC)	WGEM News At Noon	Quincy/ Hannibal/ Keokuk	IL/ MO	7/8/08	12:00-12:30	171	6,038
WXII-TV Ch. 12 (NBC)	Newschannel 12 At Noon	Greensboro/ Winston-Salem	NC	7/8/08	12:00-12:30	46	32,882
WFMJ-TV Ch 21 (NBC)	21 News Mid-Day Report	Youngstown	OH	7/8/08	12:00-12:30	106	20,480
WGEM-TV Ch 10 (NBC)	WGEM News At Noon	Quincy/ Hannibal/ Keokuk	IL/ MO	7/8/08	12:00-12:30	171	6,038
WCJB-TV Ch 20 (ABC)	TV 20 News At Noon	Gainesville	FL	7/8/08	12:00-12:30	162	not available
WVIR-TV Ch. 29 (NBC)	NBC29 News At Noon	Charlottesville	VA	7/8/08	12:00-13:00	181	7,840
WBBH-TV Ch. 20 (NBC)	NBC 2 News At Noon	Fort Myers/ Naples	FL	7/8/08	12:00-13:00	63	29,369
KOB-TV Ch 4 (NBC)	Eyewitness News 4 At Midday	Albuquerque/ Santa Fe	NM	7/8/08	12:00-13:00	44	30,381
WVIR-TV Ch 29 (NBC)	NBC29 News At Noon	Charlottesville	VA	7/8/08	12:00-13:00	181	7,840
WPTV-TV Ch. 5 (NBC)	Midday On 5	West Palm Beach/Fort Pierce	FL	7/8/08	12:30-13:00	38	38,870
WPTV-TV Ch. 5 (NBC)	Midday On 5	West Palm Beach/Fort Pierce	FL	7/8/08	12:30-13:00	38	38,870
WMGM-TV Ch 40 (NBC)	News Channel 40 NBC News	Philadelphia	PA	7/8/08	17:30-18:00	4	not available

WCSH-TV Ch 6 (NBC)	WCSH Newscenter 6 At 5:30 PM	Portland/ Auburn	ME	7/8/08	17:30-18:00	76	not available
WLBZ-TV Ch 2 (NBC)	WLBZ News Center 2 At 5:30 PM	Bangor	ME	7/8/08	17:30-18:00	152	not available
WTVJ-TV CH 6 (NBC)	Channel 6 News At 6:00	Miami/Fort Lauderdale	FL	7/10/08	18:00-18:30	16	60,353
KITV-TV Ch 4 (ABC)	KITV 4 News At 6	Honolulu	HI	7/10/08	18:00-18:30	73	26,540
NBC National	NBC Nightly News	National	Nat'l	7/11/08	18:30-19:00		7,151,000
ABC	Good Morning America	National	Nat'l	8/7/08	07:00-09:00		not available
					Total		**16,573,320**

Radio Coverage

Station	Program	Location	Date
ABC Radio Australia	Reefs could be gone in 50 years: Experts	Australia	7/8/08
ABC Radio Australia	Sense of urgency at coral reef meeting	Australia	7/8/08
ABC Radio Australia	Summit tackles threats to reefs	Australia	7/8/08
ABC Radio Australia	Fiji scientist says custom way to manage reefs	Australia	7/8/08
ABC Radio Australia	Humans slowly killing Aceh's tsunami survivor	Australia	7/9/08
ABC Radio Australia	Tsunami reconstruction bad for reefs	Australia	7/9/08
ABC Radio Australia	Pollution, fishing 'killing tsunami-hit Aceh reefs'	Australia	7/9/08
ABC Radio Australia	Challenges to protect Asia Pacific reef systems	Australia	7/10/08
ABC Radio Australia	One-third of world's coral species at risk of extinction	Australia	7/11/08
ABC Radio Australia	Fish catches unreported	Australia	7/11/08
ABC Radio Australia	Thriving coral jewellery trade threatens reefs	Australia	7/18/08
ABC Radio Australia	Why reefs matter: Region's reefs in severe decline	Australia	7/24/08
ABC Radio Australia	Why reefs matter: Hundreds of coral species face extinction	Australia	7/24/08
ABC Radio Australia	Why reefs matter: Can corals adapt to global warming?	Australia	7/24/08
ABC Radio Australia	Why reefs matter: Caught on film - the best approaches to saving reefs	Australia	7/24/08

Radio Coverage

ABC Radio Australia	Why reefs matter: Hidden overfishing threatens Pacific food security	Australia	7/24/08
BBC World Service News 131 (XM RADIO)	BBC Programming	National (US)	7/11/08
NAU FM	ICRS gets underway in Fort Lauderdale	Papua New Guinea	7/7/08
NAU FM	Science can assist governments make decisions	Papua New Guinea	7/7/08
NAU FM	The Pacific's catch 22!	Papua New Guinea	7/8/08
NAU FM	Villager fishermen vs commercial fishing	Papua New Guinea	7/8/08
NAU FM	Fishing for the poor. Fault of the media?	Papua New Guinea	7/9/08
NAU FM	What PNG can offer	Papua New Guinea	7/10/08
NAU FM	Gear management in PNG	Papua New Guinea	7/10/08
NPR - National	Morning Edition	National (US)	7/11/08
NPR - National	Talk of the Nation	National (US)	7/11/08
WLRN-FM (NPR)	News	Miami, FL	7/7/08
WMNF-FM 88.5 (IND)	Evening News	Tampa/St. Petersburg, FL	7/11/08
YUMI FM	ICRS gets underway in Fort Lauderdale	Papua New Guinea	7/7/08
YUMI FM	Science can assist governments make decisions	Papua New Guinea	7/7/08
YUMI FM	The Pacific's catch 22!	Papua New Guinea	7/8/08
YUMI FM	Villager fishermen vs commercial fishing	Papua New Guinea	7/8/08
YUMI FM	Fishing for the poor. Fault of the media?	Papua New Guinea	7/9/08
YUMI FM	What PNG can offer	Papua New Guinea	7/10/08
YUMI FM	Gear management in PNG	Papua New Guinea	7/10/08

Index of Coverage
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Media Outlet	Headline	Medium	Byline	Date	Page
Associated Press	Sea lovers say coral is too precious to wear	Print	Samantha Critchell	7/2/2008	62
Fiji Times	Senior journalists for world reef symposium	Print	Staff	7/3/2008	66
Sign On San Diego	Sea lovers say coral is too precious to wear	Web	Samantha Critchell	7/3/2008	67
Myrtle Beach Online	Sea lovers say coral is too precious to wear	Web	Samantha Critchell	7/3/2008	70
Canadian Press, The	Sea lovers say coral is too precious to wear	Web	Samantha Critchell	7/3/2008	73
WFAA 8	Sea lovers say coral is too precious to wear	Web	Samantha Critchell	7/3/2008	76
Springfield News-Leader.com	Coral may be too popular for own good	Web	Samantha Critchell	7/4/2008	79
Royal Gazette, The	Island urged to lead by example	Web	Amanda Dale	7/4/2008	82
Fiji Daily Post	Pacific journalists for coral conference	Print	Staff	7/5/2008	84
Pittsburgh Tribune-Review	Sea lovers say coral is too precious to wear	Print, Web	Samantha Critchell	7/5/2008	86
Red Orbit	Sea lovers say coral is too precious to wear	Web	Samantha Critchell	7/6/2008	90
USA Today	Invasive' humans threaten U.S. coral reefs	Print	Dan Vergano	7/7/2008	94
South Florida Sun-Sentinel	Fort Lauderdale conference looks for a lifeline for reefs	Print	William E. Gibson	7/7/2008	96
News & Observer, The	Scientists wary of coral as fashion	Print, Web	Samantha Critchell	7/7/2008	99
News Tribune, The	Concern over ocean reefs leads push to halt coral sales	Print, Web	Samantha Critchell	7/7/2008	102
Times & Transcript	Coral is 'too precious to wear'	Web	Samantha Critchell	7/7/2008	106
Local 10 (South Florida)	Coral Reef Symposium Gets Under Way	Broadcast	N/A	7/7/2008	109

Red Orbit	Human Impact Threatens U.S. Coral Reefs	Web	N/A	7/7/2008	110
eFlux Media	The U.S. Coral Reefs Are In Bigger Danger Than Ever	Web	Michael Todd	7/7/2008	112
Palm Beach Post	Growth, pollution among leading killers of Florida's reefs	Print, Web	Eliot Kleinberg	7/7/2008	113
eNews	Humans Endanger Coral Reefs	Web	Diane Anderson	7/7/2008	115
dbtechno.com	Report Shows Coral Reefs In U.S. Face Very Uncertain Future	Web	N/A	7/7/2008	116
PhysOrg.com	NOAA report states half of US coral reefs in 'poor' or 'fair' condition	Web	N/A	7/7/2008	117
NOAA	NOAA Report States Half of U.S. Coral Reefs In "Poor" or "Fair" Condition	Web	N/A	7/7/2008	119
Science Centric	Half of US coral reefs in 'poor' or fair condition	Web	N/A	7/7/2008	121
e! Science News	NOAA report states half of US coral reefs in 'poor' or 'fair' condition	Web	N/A	7/7/2008	123
Huliq News	NOAA report states half of US coral reefs in poor condition	Web	N/A	7/7/2008	125
CBC News	Coral reef losses threaten marine life, warn U.S. scientists	Web	N/A	7/7/2008	127
South Florida Sun-Sentinel	Federal agency says South Florida reefs in fair or poor condition	Print	Rafael A. Olmeda	7/7/2008	128
Honolulu Advertiser	NOAA report: Half of U.S. coral reefs in 'poor' or 'fair' condition	Print	Advertiser Staff	7/7/2008	130
Associated Press	NOAA report: US coral reefs in severe decline	Print	Brian Skoloff	7/7/2008	135

NBC	NOAA Report: US Coral Reefs In Severe Decline	Broadcast	N/A	7/7/2008	137
ABC 7 News	NOAA report: US coral reefs in severe decline	Broadcast	N/A	7/7/2008	139
News Channel 8	NOAA report: US coral reefs in severe decline	Broadcast	N/A	7/7/2008	141
NBC News Channel 13	NOAA report: US coral reefs in severe decline	Broadcast	Brian Skoloff	7/7/2008	143
ABC 6 News	NOAA report: US coral reefs in severe decline	Broadcast, Web	Brian Skoloff	7/7/2008	145
AM 1500 KSTP	NOAA report: US coral reefs in severe decline	Radio	N/A		147
ajc.com	Rising temps put coral reefs in severe decline	Web	Associated Press	7/7/2008	149
Journal Gazette (Fort Wayne, IN)	NOAA report: US coral reefs in severe decline	Web	Brian Skoloff	7/7/2008	151
San Francisco Chronicle	NOAA report: US coral reefs in severe decline	Print	Brian Skoloff	7/7/2008	153
Seattle Times, The	NOAA report: US coral reefs in severe decline	Print	Brian Skoloff	7/7/2008	155
Palm Beach Post	McCain to Crist: Congrats	Print, Web	Michael C. Bender	7/7/2008	157
People and Planet	Half of US coral are in trouble	Web	Henrylito Tacio	7/7/2008	158
KOB.com-- NBC New Mexico	NOAA report: US coral reefs in severe decline	Broadcast	Brian Skoloff	7/7/2008	160
Forbes.com	NOAA report: US coral reefs in severe decline	Web	Brian Skoloff	7/7/2008	162
NBC 10 News – WHEC (Rochester, NY)	NOAA report: US coral reefs in severe decline	Web	Brian Skoloff	7/7/2008	164
Fox News.com	NOAA report: US coral reefs in severe decline	Web	Brian Skoloff	7/7/2008	166

KSL.com	NOAA report: US coral reefs in severe decline	Radio	Brian Skoloff	7/7/2008	168
KTAR.com	NOAA report: US coral reefs in severe decline	Web	Brian Skoloff	7/7/2008	170
Central Florida News 13	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	172
ABC 13	US coral reefs in severe decline	Web	Associated Press	7/7/2008	174
Environment News Service	Global Warming Chief Among Threats to Coral Reefs	Print	N/A	7/7/2008	176
TIME	Report: US Coral Reefs in Big Decline	Print	Brian Skoloff	7/7/2008	180
TC Palm	Southeast Florida reefs in poor condition	Print	Rafael A. Olmeda	7/7/2008	182
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ABC 7	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	192
CBS 3 Action News	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	193
Local News 8	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	194
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CBS 9 – WAFB (Louisiana)	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	199
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Indystar.com	Reefs' great barrier: Fashion takes its toll on sea coral	Web	Samantha Critchell	7/10/2008	517
Informify News	Coral reefs dying, experts say recovery possible	Web	Patricia McFadden	7/14/2008	681
Innovations Report	New governance thinking efficient cure for global coral crisis	Web	N/A	7/8/2008	276
Innovations Report	NOAA report states half of US coral reefs in 'poor' or 'fair' condition	Web	Nächste Meldung	7/9/2008	443
Innovations Report	New NOAA coral bleaching prediction system calls for low level of bleaching in Caribbean this year	Web	N/A	7/14/2008	686
Inquirer.net	Caribbean coral reefs only 25 per cent healthy	Web	N/A	7/9/2008	422
Inter Press Service	Climate change: corals collapsing in more acidic oceans	Web	Stephen Leahy	7/8/2008	313

Inter Press Service	Global fish catches vastly underestimated	Web	Stephen Leahy	7/8/2008	377
Inter Press Service	Biodiverstiy: A third of corals face extinction	Web	Stephen Leahy	7/10/2008	536
Inter Press Service	Cutting CO2 could save dying corals	Web	Stephen Leahy	7/12/2008	667
Inter Press Service	Q&A: "Cancún's white sands wouldn't exist without coral"	Web	Stephen Leahy	7/31/2008	796
InTheNews.co.uk	New reefs teeming with marine life discovered	Web	N/A	7/9/2008	441
InTheNews.co.uk	Coral warning	Web	N/A	7/11/2008	601
Islands Business	Solomons lead trade in baby lobster, shrimp	Web	Samisoni Pareti	7/9/2008	389
Islands Business	Islands' delicacy under threat	Web	Samisoni Pareti	7/9/2008	417
Islands Business	Under-reporting of fish catches in the Pacific	Web	Samisoni Pareti	7/9/2008	418
Islands Business	Scientists need to work with journalists	Web	Samisoni Pareti	7/11/2008	579
Islands Business	Thumbs up to Pacific reefs	Web	Samisoni Pareti	7/11/2008	598
Jamaica Gleaner	Coral catastrophe - At least 845 reef species hit red list	Web	Janet Silvera	7/15/2008	711
Journal Gazette (Fort Wayne, IN)	NOAA report: US coral reefs in severe decline	Web	Brian Skoloff	7/7/2008	151
Kansas City Info	Report States Half of U.S. Coral Reefs in "Poor" or "Fair" Condition	Web	N/A	7/8/2008	307
KATC.com	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	205
Kazinform	African dust clouds harming U.S., Caribbean reefs	Web	N/A	7/15/2008	708
KESQ	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	191

KeysNet.com	International scientists want Keys coral knowledge	Web	Kevin Wadlow	7/16/2008	722
KITV-4 ABC	Scientists predict more coral 'bleaching'	Web	N/A	7/10/2008	565
KJCT News 8	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	229
Knight Science Journalism Tracker	Wires, LA Times, USA Today, etc: US coral reefs taking a nose dive	Web	N/A	7/9/2008	429
KOB.com-- NBC New Mexico	NOAA report: US coral reefs in severe decline	Broadcast	Brian Skoloff	7/7/2008	160
KSL.com	NOAA report: US coral reefs in severe decline	Radio	Brian Skoloff	7/7/2008	168
KTAR.com	NOAA report: US coral reefs in severe decline	Web	Brian Skoloff	7/7/2008	170
KVUE.com	NOAA report: U.S. coral reefs in severe decline	Web	Brian Skoloff	7/8/2008	306
KVUE.com	NOAA report: U.S. coral reefs in severe decline	Web	Associated Press	7/8/2008	345
KXnet - CBS	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	226
Las Vegas Sun	Deteriorating coral reefs	Web	N/A	7/12/2008	662
Latest News	Half of US coral reefs in ”poor” or ”fair” condition, says NOAA report	Web	ANI	7/9/2008	437
League of Environmental Educators in Florida	International Coral Reef Symposium (ICRS) July 7-11 in Fort Lauderdale	Web	N/A		805
Ledger, The	Coral Reefs Are in Severe Decline, Study Reports	Web	N/A	7/8/2008	290

Live 5 News	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	202
Live News	Coral reef deaths bring bleak outlook	Web	N/A	7/10/2008	506
Live Science	Report: US coral reefs in severe decline	Web	Brian Skoloff	7/8/2008	304
Live Science	Report: U.S. coral reefs in severe decline	Web	Brian Skoloff	7/8/2008	343
Live Science	Huge newfound coral reef teems with life	Web	Greg Soltis	7/9/2008	472
Local 10 (South Florida)	Coral Reef Symposium Gets Under Way	Broadcast	N/A	7/7/2008	109
Local News 8	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	194
Los Angeles Times	Coral reefs on 'slippery slope to slime'	Print	Kenneth R. Weiss	7/7/2008	246
Los Angeles Times	Fish vanishing from Hawaii's coral reefs	Print, Web	Kenneth R. Weiss	7/8/2008	361
Los Angeles Times	Hawaiian Islands' reef fish declining, study finds	Print, Web	Kenneth R. Weiss	7/9/2008	391
Los Angeles Times	Hawaiian Islands' reef fish declining	Web	Alice Short	7/8/2008	407
Los Angeles Times	Reef-building corals most vulnerable to extinction	Web	Kenneth R. Weiss	7/10/2008	541
Los Angeles Times	About 33% of coral species threatened with extinction, study says	Print, Web	Kenneth R. Weiss	7/11/2008	585
Malaria, Bedbugs, Sea Lice, & Sunsets	SeaWeb scores a hit	Web	Rick MacPherson	7/9/2008	445
Malaria, Bedbugs, Sea Lice, & Sunsets	SeaWeb launches coral news portal	Web	Rick MacPherson	7/18/2008	750
Malaysia Sun	Half of US coral reefs in ”poor” or ”fair” condition, says NOAA report	Print, Web	N/A	7/8/2008	311
Miami Herald	Coral experts converge on South Florida	Web	Oscar Corral	7/9/2008	435

Miami Herald	Coral reefs are a shared resource -- and a shared concern	Web	Richard Dodge	7/10/2008	519
Miami Herald	Coral reefs, polar bears in warming world	Web	Polita Glynn	8/2/2008	799
Money Times, The	Half of U.S. coral reefs said at risk	Web	N/A	7/8/2008	262
Mongabay	U.S. coral reefs in trouble	Web	N/A	7/7/2008	240
Mongabay	Good news for reefs: giant coral structure found off Brazil	Web	N/A	7/8/2008	400
Mongabay	The global rich are eating the poor's fish: new report shows tropical fish catch gravely under-estimated	Web	Jeremy Hance	7/11/2008	622
Mongabay	Climate change will increase the erosion of coral reefs	Web	Jeremy Hance	7/28/2008	793
Mother Jones	America's Coral Reefs Declining	Web	Julia Whitty	7/7/2008	207
Myrtle Beach Online	Sea lovers say coral is too precious to wear	Web	Samantha Critchell	7/3/2008	70
Naples Daily News	NOAA report: US coral reefs in severe decline	Print	Brian Skoloff	7/7/2008	234
National Geographic	A third of reef-building corals at risk of extinction	Web	Brian Handwerk	7/10/2008	569
National Geographic News	Tainted African dust clouds harm U.S., Caribbean reefs	Web	Brian Handwerk	7/14/2008	697
National Parks Gallery	Coral reef parks featured at international symposium	Web	N/A	7/22/2008	764
NBC	NOAA Report: US Coral Reefs In Severe Decline	Broadcast	N/A	7/7/2008	137
NBC – KNDO / KNDU	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	196

NBC 10 News – WHEC (Rochester, NY)	NOAA report: US coral reefs in severe decline	Web	Brian Skoloff	7/7/2008	164
NBC 13 News	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	217
NBC 17 - WAND,	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	208
NBC 2 News	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	220
NBC 3 - WRCB	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	233
NBC 4 (Tucson)	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	215
NBC 6 (South Florida)	Scientists look for ways to save coral reefs	Broadcast, Web	N/A	7/8/2008	364
NBC 6 News – KRISTV.com	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	188
NBC 8 KHNL	Coral concerns for our water	Broadcast, Web	Paul Drewes	7/8/2008	394
NBC News Channel 13	NOAA report: US coral reefs in severe decline	Broadcast	Brian Skoloff	7/7/2008	143
NBC News Channel 21	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	218
NBC News Channel 5	Coral reefs concentrate attention at symposium	Web	Jay Cashmere	7/7/2008	183
NBC Nightly News with Brian Williams	Climate change threatens coral species	Broadcast, Web	N/A	7/11/2008	584
New Nation, The (Bangladesh)	Scientists discover new reefs teeming in Brazil	Web	N/A	7/14/2008	679
New Nation, The (Bangladesh)	Coral reefs in the Philippines 'slowly dying'	Web	Henrylito Tacio	7/21/2008	755
New Scientist	Corals join frogs and toads as world's most endangered	Web	Catherine Brahic	7/10/2008	547

New Scientist	Giant vacuum cleaner leaves reefs thriving	Web	Mark Schrope	7/11/2008	636
New York Times	Corals already in danger, facing a new threat from farmed algae	Print, Web	Christopher Pala	7/8/2008	396
News & Observer, The	Scientists wary of coral as fashion	Print, Web	Samantha Critchell	7/7/2008	99
News Center 11 - WTOK (MS)	NOAA report: US coral reefs in severe decline	Broadcast, Web	N/A	7/8/2008	296
News Channel 15 - WANE	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	190
News Channel 8	NOAA report: US coral reefs in severe decline	Broadcast	N/A	7/7/2008	141
News Line 9	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	223
News Tribune, The	Concern over ocean reefs leads push to halt coral sales	Print, Web	Samantha Critchell	7/7/2008	102
News VOA	New study warns warmer, more acidic oceans will kill coral reefs	Web	Zulima Palacio	7/9/2008	476
News VOA	Report: One third of world's coral reefs could face extinction	Web	Jessica Berman	7/11/2008	603
Newslocale.org	Half of US coral reefs in 'poor' or 'fair' condition, says NOAA report	Web	ANI	7/8/2008	291
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NewsWest 9	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	216
Nine MSN	Coral reef deaths bring bleak outlook	Web	N/A	7/10/2008	499

NOAA	New NOAA coral bleaching prediction system calls for low level of coral bleaching in Caribbean this year	Web	N/A	7/10/2008	539
NOAA	NOAA Report States Half of U.S. Coral Reefs In "Poor" or "Fair" Condition	Web	N/A	7/7/2008	119
NPR	Study: Global coral crisis is in full bloom	Web	John Nielsen	7/11/2008	591
NPR/Science Friday	A coral catastrophe?	Radio, Web	Ira Flatow, Flora Lichtman	7/11/2008	634
OceanLines	Coral reef health worse than thought	Web	N/A	8/4/2008	801
Online NewsHour, The	Study: One-third of coral reef species face extinction	Web	Jenny Marder	7/11/2008	594
Orlando Sentinel	U.S. scientists fear for the nation's coral reefs, share data at Fort Lauderdale seminar	Print, Web	Ludmilla Lelis	7/8/2008	278
Orlando Sentinel	Reef relief: A plan to save our ecosystem	Web	Ludmilla Lelis	7/12/2008	648
Outside Blog	Coral reefs may be threatened by acidic ocean	Web	Alex Crevar	7/11/2008	600
Over the Limit	Nearly half of coral US reefs said at risk	Web	N/A	7/10/2008	561
OverTheLimit	Coral Reefs Failing In US Coastal Areas	Web	N/A	7/7/2008	248
Palm Beach Post	Growth, pollution among leading killers of Florida's reefs	Print, Web	Eliot Kleinberg	7/7/2008	113
Palm Beach Post	McCain to Crist: Congrats	Print, Web	Michael C. Bender	7/7/2008	157
Parade	Can our oceans survive?	Print, Web	Daryl Chen	7/27/2008	811
People and Planet	Half of US coral are in trouble	Web	Henrylito Tacio	7/7/2008	158
People and Planet	Fish catches declining faster than realized	Web	N/A	7/8/2008	372
People and Planet	Philippines coral reefs 'slowly dying'	Web	Henrylito Tacio	7/10/2008	531

People and Planet	A third of world's coral reefs face extinction	Web	Henrylito Tacio	7/14/2008	688
People and Planet	New research points way to restore coral reefs	Web	Henrylito Tacio	7/14/2008	690
People and Planet	Coral bleaching once more centre stage	Web	Henrylito Tacio	7/15/2008	719
Philippines Inquirer	US coral reefs in severe decline -- report	Print, Web	Agence France-Presse	7/8/2008	258
PhysOrg.com	NOAA report states half of US coral reefs in 'poor' or 'fair' condition	Web	N/A	7/7/2008	117
PhysOrg.com	Scientists discover new reefs teeming with marine life in Brazil	Web	N/A	7/8/2008	383
Pittsburgh Tribune-Review	Sea lovers say coral is too precious to wear	Print, Web	Samantha Critchell	7/5/2008	86
Plenty	Increasingly acidic ocean waters are causing coral demise, beach erosion, and biodiversity loss	Web	Victoria Schlesinger	7/8/2008	381
PopSci.com	Coral reefs in troubled waters	Web	Jaya Jiwatram	7/17/2008	739
Powerboat-World	Corals deliver acid shock	Web	N/A	7/14/2008	695
Powerboat-World	Finding a cure for the 'coral crisis'	Web	N/A	7/18/2008	745
Powerboat-World	Coral decline to hit rich and poor	Web	N/A	7/25/2008	785
Practical Fishkeeping	Reef-building corals face extinction	Web	N/A	8/5/2008	803
Prensa Latina	Coral reef deterioration alert	Web	N/A	7/9/2008	474
Prezent	Warning: One third of reef-building corals on the verge of extinction	Web	N/A	7/11/2008	629
Providence Journal, The	Faux coral is cool	Print, Web	Samantha Critchell	7/9/2008	412
Red Orbit	Sea lovers say coral is too precious to wear	Web	Samantha Critchell	7/6/2008	90

Red Orbit	Human Impact Threatens U.S. Coral Reefs	Web	N/A	7/7/2008	110
Red Orbit	Half of U.S. Coral Reefs Said at Risk	Web	N/A	7/8/2008	273
Red Orbit	South Florida reefs may have been damaaged by storms and pollution	Print, Web	Robert Nolin, Rafael Olmeda	7/8/2008	301
Red Orbit	Coral experts converge on S. Fla.	Web	Oscar Corral	7/9/2008	470
Red Orbit	Cuban scientist attends symposium in Fort Lauderdale	Web	Oscar Corral	7/12/2008	655
Red Orbit	Reef relief: A plan to save our ecosystem	Web	Ludmilla Lelis	7/12/2008	670
Regarding Henry blog	Protect coral reefs before it's too late	Web	Henrilito Tacio	7/8/2008	370
Reuters India	U.S.coral reefs under threat, report finds	Web	Michael Cristie	7/8/2008	366
Rochester (MN) Post-Bulletin	NOAA report: U.S. coral reefs in severe decline	Web	Brian Skoloff	7/10/2008	488
Royal Gazette, The	Island urged to lead by example	Web	Amanda Dale	7/4/2008	82
San Francisco Chronicle	Health of U.S. coral reefs drops	Print	Brian Skoloff	7/8/2008	270
San Francisco Chronicle	NOAA report: US coral reefs in severe decline	Print	Brian Skoloff	7/7/2008	153
Science	Warming spells trouble for fish	Web	Christopher Pala	7/10/2008	554
Science Alert Australia & New Zealand	Oceans more acid than expected	Web	N/A	7/8/2008	325
Science Alert Australia & New Zealand	Warming could disrupt coral's sex	Web	N/A	7/10/2008	490
Science Centric	Researchers discover new reefs teeming with marine life in Brazil	Web	N/A	7/9/2008	468
Science Centric	New governance thinking efficient cure for global coral crisis	Web	N/A	7/10/2008	527
Science Centric	New prediction	Web	N/A	7/14/2008	693

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Science Centric	Half of US coral reefs in 'poor' or fair condition	Web	N/A	7/7/2008	121
Science Daily	New reefs teeming with marine life in Brazil	Web	N/A	7/9/2008	387
Science Daily	Half of US coral reefs in 'poor' or fair condition, NOAA report states	Web	N/A	7/9/2008	457
Science Daily	New coral bleaching prediction system calls for low level of bleaching in Caribbean this year	Web	N/A	7/10/2008	485
Science Daily	New coral bleaching prediction system calls for low level of bleaching in Caribbean this year	Web	N/A	7/15/2008	706
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Scotsman, The	Corals at risk – and we're to blame	Web	Jenny Haworth	7/11/2008	596
Scuba Diving News	New coral reefs teeming with marine life discovered in Brazil	Web	N/A	7/10/2008	487
Scubaology	1/3 of coral could face extinction	Web	N/A	7/29/2008	795
Seattle Times, The	NOAA report: US coral reefs in severe decline	Print	Brian Skoloff	7/7/2008	155
Seoul Times, The	Coral decline hits rich and poor	Print, Web	N/A	7/11/2008	645

Sign On San Diego	Sea lovers say coral is too precious to wear	Web	Samantha Critchell	7/3/2008	67
South Florida Business Journal	Saving a fragile economic cog will cost hundreds of millions	Print, Web	Paul Brinkman	7/11/2008	642
South Florida Sun-Sentinel	Fort Lauderdale conference looks for a lifeline for reefs	Print	William E. Gibson	7/7/2008	96
South Florida Sun-Sentinel	Federal agency says South Florida reefs in fair or poor condition	Print	Rafael A. Olmeda	7/7/2008	128
South Florida Sun-Sentinel	South Florida's coral reefs troubled, but 'hanging in there'	Print	Robert Nolin & Rafael A. Olmeda	7/7/2008	242
Springfield News-Leader.com	Coral may be too popular for own good	Web	Samantha Critchell	7/4/2008	79
St. Louis Post-Dispatch	Corals 'most threatened animals on Earth'	Print, Web	Kenneth R. Weiss	7/13/2008	673
Standard Freeholder	Is coral too precious to wear?	Print	Samantha Critchell	7/8/2008	282
Star, The (South Africa)	… and coral reefs that keep on disappearing	Web	N/A	7/10/2008	515
STLtoday	Corals 'most threatened animals on Earth'	Web	Kenneth R. Weiss	7/13/2008	675
Straight Goods	Coral reefs collapsing in more acid oceans	Web	Stephen Leahy	7/22/2008	761
Sun Star (Philippines)	World coral reefs facing extinction	Web	Henrylito Tacio	7/14/2008	700
Sun Star (Philippines)	Coral bleaching takes centerstage	Web	Henrylito Tacio	7/18/2008	742
Sunshine Coast Daily	Coral reef deaths bring bleak outlook	Web	N/A	7/10/2008	512
Swedish Research Council	New governance thinking efficient cure for global coral crisis	Web	Schwedischer Forschungsrat	7/8/2008	304
Sydney Morning Herald	Coral reef deaths bring bleak outlook	Print, Web	N/A	7/10/2008	497
Sydney Morning Herald	Coral reef deaths threaten tourism	Web	N/A	7/11/2008	617
TC Palm	Letter: Wastewater regulations a key step for the area	Web	Mark D. Perry	7/16/2008	724

TC Palm	Southeast Florida reefs in poor condition	Print	Rafael A. Olmeda	7/7/2008	182
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Telegraph, The	One third of coral species face extinction	Web	Roger Highfield	7/10/2008	556
Thaindian News	One third of reef-building corals threatened with extinction	Web	N/A	7/11/2008	643
The Daily Reporter	NOAA report: US coral reefs in severe decline	Web	Brian Skoloff	7/8/2008	339
The Great Beyond	US reefs under threat	Web	N/A	7/8/2008	354
theCheers.org Magazine	Half of US coral reefs in 'poor' or 'fair' condition, says NOAA report	Web	N/A	7/8/2008	359
TIME	Report: US Coral Reefs in Big Decline	Print	Brian Skoloff	7/7/2008	180
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Times & Transcript	Coral is 'too precious to wear'	Web	Samantha Critchell	7/7/2008	106
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Uncommon Ground	A little good news about coral reefs	Web	N/A	7/10/2008	526
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UPI	Half of U.S. coral reefs said at risk	Print	N/A	7/8/2008	257
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WDAM-TV – NBC	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	224
WDBJ 7	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	222
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WLNS 6 News	NOAA report: US coral reefs in severe decline	Web	Associated Press	7/7/2008	198
WMNF 88.5FM	Scientists: Act now to save coral reefs	Web	Seán Kinane	7/11/2008	640

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Associated Press

Sea lovers say coral is too precious to wear

Some argue it's being harvested at a rate that nature can't keep up with

By Samantha Critchell

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Jiangang Luo / AFP - Getty Images file

Sea coral is blessed with wonderful colors, an intricate design and memories of the lapping ocean. It's no wonder that the worlds of fashion and home decor are in the midst of a love affair with it.

Some argue, though, that coral is too precious to wear.

"We want to discourage consumers from purchasing coral," says scientist Andrew Baker. "It's like ivory. It's a product of a living animal and the harvest of this item is unsustainable."

It's unsustainable not because new coral won't grow, he says, but because there are no limits on the use or sale of coral and it's being harvested at a rate that nature can't keep up with.

"Dredging deep-sea coral forests is like clear-cutting the rainforest for sparrows: You're doing so much damage for something so small," says Baker, who is also an assistant professor at the at the University of Miami and the Pew Institute for Ocean Science.

Baker and a team from the Too Precious to Wear campaign, helmed by the nonprofit group SeaWeb that also took on the caviar and restaurant seafood causes, is lobbying to add pink and red corals, also known as Corallium, to the Convention of International Trade in Endangered Species, the global group that has put limits on rhinoceros horns, tiger feet and ivory. Coral had made it to the last round of negotiations in 2007, according to Baker, but failed to make it to the final list.

Next week, the pressures corals are facing will be discussed at the International Coral Reef Symposium, which will be attended by more than 2,500 scientists, economists, conservationists and educators. The theme of the meeting is reefs for the future.

Baker doesn't want the world to wait. SeaWeb had noticed in the past couple of years that coral — real, faux and artistic interpretations — was all over the fashion runways and home-decorating magazines, explains Julia Robertson, program manager for Too Precious to Wear.

Around the same time, though, global warming, for which coral is considered a key indicator, had become a buzz topic, so marine-science groups saw an opportunity to raise public awareness, she says.

"We wanted to tap into the recognition of coral in fashion, design, jewelry and home decor. It's easier to talk to people when they know what you're talking about," Robertson says.

The campaign was launched earlier this year with partners including Pottery Barn, Tiffany & Co., Lela Rose, Vena Cava and Chantecaille Beaute.

Sylvie Chantecaille says her beauty company got involved about 18 months ago, largely because of her interest in the ocean.

"My whole family snorkels, dives. I grew up in the South of France diving and I have seen a change in the ocean over the years," she explains. "When you spend so much time under the water, you realize how amazing it is. I wanted to do something to protect it."

So Chantecaille developed Protect the Paradise compacts — one with eye shadow, another with powder — embossed with miniature ocean scenes to raise money for marine research and conservation. The project put Chantecaille in touch with other coral fans, including Baker, who taught her to appreciate their beauty from afar.

"I love the look of coral. They're so beautiful," Chantecaille says. "I used to be completely in love with coral jewelry so I totally understand the appeal."

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THE FIJI TIMES Online

Senior journalists for world reef symposium

July 3, 2008

Two senior Pacific journalists will attend the world's leading coral reef science conference in the United States next week.

Fiji journalist Samisoni Pareti and PNG radio journalist Titi Gabi will attend the 11th International Coral Reef Symposium (ICRS) which begins Monday, July 7, in Fort Lauderdale, Florida.

Held once every four years, this year's symposium will convene on the US mainland for the first time in 30 years.

It will bring together more than 2500 international scientists, policy makers, managers, and conservationists from 150 countries to present the latest on coral reef science and management.

Reports from the event will focus on topics including the emerging link between climate change, ocean acidification and coral reef health; diseases affecting coral reefs; recovery of coral reef ecosystems following bleaching episodes and the effectiveness of Marine Protected Areas.

SeaWeb Asia Pacific program associate Vasemaca Rarabici said the selection of the journalists indicates the importance of the conference, especially for small island nations.

"Even though we are miles away from industrialised countries, we feel the impact of climate change, sea-level rise and coral bleaching," Ms Rarabici said.

SignOnSanDiego.com
BY THE UNION-TRIBUNE

Sea lovers say coral is too precious to wear

By Samantha Critchell, Associated Press

July 3, 2008

NEW YORK – Sea coral is blessed with wonderful colors, an intricate design and memories of the lapping ocean. It's no wonder that the worlds of fashion and home decor are in the midst of a love affair with it.

Some argue, though, that coral is too precious to wear.

“We want to discourage consumers from purchasing coral,” says scientist Andrew Baker. “It's like ivory. It's a product of a living animal and the harvest of this item is unsustainable.”

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Baker and a team from the Too Precious to Wear campaign, helmed by the nonprofit group SeaWeb that also took on the caviar and restaurant seafood causes, is lobbying to add pink and red corals, also known as Corallium, to the Convention of International Trade in Endangered Species, the global group that has put limits on rhinoceros horns, tiger feet and ivory. The coral had made it to the last round of negotiations in 2007, according to Baker, but failed to make it to the final list.

Next week, the pressures corals are facing will be discussed at the International Coral Reef Symposium, which will be attended by more than 2,500 scientists, economists, conservationists and educators. The theme of the meeting is reefs for the future.

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MyrtleBeachOnline.com

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THE CANADIAN PRESS

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July 3, 2008

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July 3, 2008

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News-Leader.com
SPRINGFIELD, MISSOURI

Coral may be too popular for own good

Scientists, educators concerned excess harvesting could endanger ecosystem.

By Samantha Critchell • The Associated Press

July 4, 2008

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Alternatives to coral abound

You can have your coral and save it too.
The marine conservation group SeaWeb's Too Precious To Wear campaign offers alternatives to coral to capture its beauty without harvesting the real thing.
"There has been a huge trend toward coral in the past five or six years," says artist Michael Aram, who sculpts faux coral household items. "I don't know how and when it all started, but it became an incredible trend. ... It has struck a chord."
A sampling of coral-inspired items:
• Anika Brazil Swim bathing suits, to debut later this month, with glass coral-colored beads as ornamentation.
• Stetson coral-colored cowboy boots. "We love using it as a natural complement to the rich brown leathers you see so often in western boots," says Pam Fields, CEO of Stetson. "For women, the warmth feminizes the collection and ties nicely into the coral and turquoise accessories that we see dominating the ladies area. For men, it is a way to wear a rich color that isn't 'pink.'"
• Coral-print sheets and resin-sculpted coral candleholders from Pottery Barn.
• Tiffany & Co. jewelry with a coral-branch motif.
"We have a collection in sterling silver with a necklace, bracelet and charms, and earrings in white gold," says Linda Buckley, Tiffany's vice president of public relations.
• Michael Aram's hand-hammered steel bowls with lacquered faux coral-branch bases.

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The Royal Gazette

Island urged to lead by example

By Amanda Dale

July 4, 2008

One of the world's foremost coral reef experts has called on Bermuda to lead by example.

John Ogden, Director of the Florida Institute of Oceanography, said the Island was a shining example of stewardship of the oceans in an age where management of the marine environment is critical.

Speaking at a public lecture at the Bermuda Underwater Exploration Institute this week, Dr. Ogden said that careful governance of marine ecosystems by coastal nations was essential in an era of increasing intrusion. He listed aquaculture, growing pipelines and cables, mining and dredging, ocean fertilisation and CO2 sequestration as examples.

Dr. Ogden, who is visiting the Island to research the state of our coral reefs for next week's International Coral Reef Symposium in Florida, said Bermuda could provide an example to the rest of the world in its management of the ocean.

He said that in the 132 years since the first deep sea exploration by HMS Challenger - which made Bermuda its second stop on its round-the-world voyage from 1872-76, humanity had gone from learning life actually existed in the deep ocean to slowly destroying it.

The human impact on marine ecosystems ranged from overfishing and land-based pollution, to global climate change. Dr. Ogden said cod was almost fished to extinction, whales had been hunted to destruction, and the coral reefs were dying.

"In that 132-year interval we've gone from making fundamental discoveries to a point now where everyone in this room can say the oceans are in trouble," he said.

Dr. Ogden called for more marine protected areas and no fishing zones, with satellite tracking of fishing vessels to track ships travelling at less than 3.5 knots ie. trawling.

"We need to get the message out that 'fish are wildlife' and that we need to take them out of the ocean without consequences," he said.

"And also that what we do on the land affects the ocean."

Referring to the Island's protected marine areas, Dr. Ogden said: "I think Bermuda can offer things to the world in how we deal with these problems.

"Bermuda's agencies have done an excellent job of applying the management schemes in front of them to create a situation where it looks like things are holding for now, but we need to look to the future, we need to anticipate."

He said: "I think examples of good stewardship get attention, and the world is looking for examples."

Calling for more integrated management of the oceans by nations and information-sharing, Dr. Ogden said: "In towns we have planning officers who have tools to tell them a lot about the areas of land. Why don't we have these for the oceans?

"We know a lot about the oceans, we just haven't assembled the information in any coherent way, and that is what we have to do.

"It's a big blue planet and it's all we've got, so we ought to be paying more attention to it."

Dr. Ogden added: "Global climate change is one of the things we, as a global society, have to get together and manage. But we aren't doing very well at that at the moment.

"For 20 years the coral reefs were the canaries in the coal mine. But by 1997/1998 there was no doubt that the canary had fallen off the perch. Yet we have still gone about our energy business since then," he said.

Fiji Daily Post

Pacific journalists for coral conference

July 5, 2008

TWO Senior Pacific journalists will be attending the world's leading coral reef science conference in the United States of America next week. They are Fiji's freelance journalist Samisoni Pareti and PNG Radio journalist Titi Gabi.

The 11th International Coral Reef Symposium (ICRS) begins on Monday, July 7, in Fort Lauderdale, Florida.

Held once every four years, this year's symposium will convene on the US mainland for the first time in 30 years and will bring together more than 2500 international scientists, policy makers, managers, and conservationists from approximately 150 countries to present the latest findings on coral reef science and management.

Reports from the event will focus on topics including the emerging link between climate change, ocean acidification and coral reef health; diseases affecting coral reefs around the world; recovery of coral reef ecosystems following bleaching episodes; and the effectiveness of Marine Protected Areas.

SeaWeb Asia Pacific Programme Associate Vasemaca Rarabici said the selection of Senior Journalists indicates the importance of the Conference especially for small island nations.

"Even though we are miles away from third world industrialised countries, we are strongly feeling the impact of climate change, sea-level rise, coral bleaching which are caused by the pollution from these bigger countries," Rarabici said.

"We need to report more on how these pollution impacts us and what is being done to help our small island nations.

"It's through the media that we can let our local community know what is happening around us; the international community to wake up and take heed to our problems and find solutions. The media is also an important learning tool which we can educate each other.

“Sea Web hopes that Pareti and Gabi’s selection to attend the ICRS meeting will be one way of achieving these objectives,” Rarabici added.

Sea Web is a non government organisation that helps the media promotes a healthy ocean.

PITTSBURGH
TRIBUNE-REVIEW

Sea lovers say coral is too precious to wear

Samantha Critchell, Associated Press

July 5, 2008

NEW YORK -- Sea coral is blessed with wonderful colors, an intricate design and memories of the lapping ocean. It's no wonder that the worlds of fashion and home decor are in the midst of a love affair with it.

Some argue, though, that coral is too precious to wear.

"We want to discourage consumers from purchasing coral," says scientist Andrew Baker. "It's like ivory. It's a product of a living animal, and the harvest of this item is unsustainable."

It's unsustainable not because new coral won't grow, he says, but because there are no limits on the use or sale of coral, and it's being harvested at a rate that nature can't keep up with.

"Dredging deep-sea coral forests is like clear-cutting the rainforest for sparrows: You're doing so much damage for something so small," says Baker, who also is an assistant professor at the University of Miami and the Pew Institute for Ocean Science.

Baker and a team from the Too Precious to Wear campaign, helmed by the nonprofit group SeaWeb that also took on the caviar and restaurant seafood causes, is lobbying to add pink and red corals, also known as Corallium, to the Convention of International Trade in Endangered Species, the global group that has put limits on rhinoceros horns, tiger feet and ivory. The coral had made it to the last round of negotiations in 2007, according to Baker, but failed to make it to the final list.

Next week, the pressures corals are facing will be discussed at the International Coral Reef Symposium, which will be attended by more than 2,500 scientists, economists, conservationists and educators. The theme of the meeting is reefs for the future.

Baker doesn't want the world to wait. SeaWeb had noticed in the past couple of years that coral -- real, faux and artistic interpretations -- was all over the fashion runways and home-decorating magazines, says Julia Robertson, program manager for Too Precious to Wear.

At about the same time, though, global warming, for which coral is considered a key indicator, had become a buzz topic, so marine-science groups saw an opportunity to raise public awareness, she says.

"We wanted to tap into the recognition of coral in fashion, design, jewelry and home decor. It's easier to talk to people when they know what you're talking about," Robertson says.

The campaign was launched earlier this year with partners including Pottery Barn, Tiffany & Co., Lela Rose, Vena Cava and Chantecaille Beaute.

Sylvie Chantecaille says her beauty company got involved about 18 months ago, largely because of her interest in the ocean.

"My whole family snorkels, dives. I grew up in the South of France diving, and I have seen a change in the ocean over the years," she says. "When you spend so much time under the water, you realize how amazing it is. I wanted to do something to protect it."

So Chantecaille developed Protect the Paradise compacts -- one with eye shadow, another with powder -- embossed with miniature ocean scenes -- to raise money for marine research and conservation. The project put Chantecaille in touch with other coral fans, including Baker, who taught her to appreciate their beauty from afar.

"I love the look of coral. They're so beautiful," Chantecaille says. "I used to be completely in love with coral jewelry, so I totally understand the appeal."

But, she adds, "It's going to become like ivory. I used to wear ivory, but I'd never wear it today, now that I know what it means and what it symbolizes."

Tiffany stopped selling coral jewelry in 2003 and, instead, uses precious stones to replicate the exotic color and shapes found in the sea. The company brought the bulk of manufacturing in house, allowing it to examine sourcing, sayss Linda Buckley, Tiffany vice president of public relations. While coral was not a huge part of the assortment, it set off some bells.

"Tiffany is closely associated with the natural world -- it's where we get our inspiration and materials," Buckley says. She adds: "If you have healthy coral reefs, you have healthy oceans, healthy seabeds and healthy oysters -- and we get our pearls from healthy oysters."

(Buckley notes that Tiffany also has examined their use of cultured pearls and decided it doesn't pose the same environmental risks as coral.)

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Coral from shallow reefs, which are mostly a light color, tend to be used in interior decor, while the deep-sea corals -- known as the "precious" black, pink and red corals from the Mediterranean Sea, Indian Ocean and the Pacific near Hawaii -- are used for jewelry.

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You can have your coral and save it, too

The marine conservation group SeaWeb's Too Precious To Wear campaign offers alternatives to coral to capture its beauty without harvesting any of the real thing.

"There has been a huge trend toward coral in the past five or six years," says artist Michael Aram, who sculpts faux coral household items out of enamel-painted metal. "I don't know how and when it all started, but it became an incredible trend. ... It has struck a chord."

A sampling of coral-inspired items:

• Anika Brazil Swim bathing suits, to debut later this month, with glass coral-colored beads as ornamentation.

• Stetson coral-colored cowboy boots. "We love using it as a natural complement to the rich brown leathers you see so often in western boots," says Pam Fields, CEO of Stetson. "For women, the warmth feminizes the collection and ties nicely into the coral

and turquoise accessories that we see dominating the ladies area. For men, it is a way to wear a rich color that isn't 'pink.' "

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• Torn by Ronny Kobo's coral-motif tank tops for shopbop.com.

• Creme de La Mer's World Ocean Day moisturizing cream. While technically not a coral product, it is based on a sea-kelp formula, and the company donates to a coral-saving campaign and says without healthy oceans -- of which healthy coral reefs are key -- there'd be no secret "miracle broth" ingredient.

Sea Lovers Say Coral is Too Precious to Wear

By Samantha Critchell

July 6, 2008

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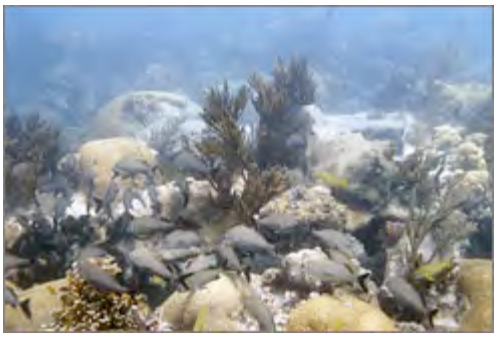
'Invasive' humans threaten U.S. coral reefs

By Dan Vergano, USA TODAY

July 7, 2008



A school of fish swims around coral formations in Dry Tortugas National Park, Fla. U.S. coral reefs are in poor or only fair condition, researchers say. By Wilfredo Lee, AP

Half of all U.S. coral reefs, the center of marine life in the Pacific and Caribbean oceans, are either in poor or fair condition, a federal agency warns today.

The report by the National Oceanic and Atmospheric Administration places much of the blame on human activities and warns of further oceanwide decline.

Reefs closer to cities were found to suffer poorer health, damaged by trash, overfishing and pollution.

"Human impacts are making the big difference," says NOAA's Timothy Keeney, co-chair of the U.S. Coral Reef Task Force. "Humans are the most invasive species of all."

Released today at the International Coral Reef Symposium in Fort Lauderdale, the report looks at the 15 federally administered shallow-water reef preserves in the Pacific and Caribbean. Among the findings:

• Caribbean reefs were blasted in 2005 by hurricanes, disease and bleaching that killed 90% of all corals in some locations. Bleaching is a loss of color often attributed in part to global warming.

• Seafood species numbers are in poor condition at both Caribbean and Pacific reefs.

"Coral reefs are beautiful, but they are also tremendous economic resources," says NOAA marine biologist Jenny Waddell. Healthy reefs benefit tourism, fisheries and serve as coastal storm breaks, she says.

Coral reefs are living creatures made from the hardened shells of tiny polyps. They cover only 1% of the world's surface but play an outsize role in the oceans, serving as nurseries for young fish, centers of diversity for species and the underpinnings of some islands. Two once-common Caribbean species, elkhorn and staghorn coral, are now threatened.

The report is based on survey responses from reef managers, as well as reports from 270 scientists, Waddell says.

"We may be reaching a tipping point for coral reefs from changes in climate and overfishing, says NOAA's Mark Monaco. "But that doesn't mean we can give up."

Sun-Sentinel.com

Fort Lauderdale conference looks for a lifeline for reefs

By William E. Gibson, Washington Bureau Chief

July 7, 2008

Staghorn coral is found in the Keys, the Bahamas and other Caribbean islands. A conference in Fort Lauderdale explored strategies for restoring the world's rapidly declining coral reefs. (Photo/Alison Moulding, National Coral Reef Institute / June 17, 2008)

Intent on helping restore the world's rapidly declining reefs, Alison Moulding is growing baby coral in her South Florida laboratory.

Under a full moon when corals tend to spawn, she and fellow researchers collected eggs and sperm from a reef off the Broward County coast last year and turned them into larva back in the lab. She hopes these babies grow big and strong enough to return to their home and help expand the reef.

"Mother Nature does it best," Moulding said. "We can help her along a little bit. But for the system to be fully healthy, we have to reduce the stresses on coral that are damaging the reefs."

Her baby-coral experiment is just one of many reef-restoration projects that will be discussed at the International Coral Reef Symposium, from today to Friday at the convention center in Fort Lauderdale. The conference is expected to draw more than 2,500 reef experts from about 150 countries.

It's a chance for scientists to compare notes and for the public to learn about worldwide attempts to curb pollution, measure the impact of global warming and contain damage from coastal development. The symposium takes place every four years, and this one is expected to be the largest and most significant because of growing awareness of climate change and deteriorating reefs.

Florida waters contain roughly two-thirds of the nation's coral reef. The warm Gulf Stream that wraps around South Florida nourishes several ridges near three seaports in a major metropolitan area — a perfect place to study a natural resource under pressure.

South Florida also makes a perfect host for the symposium because it is home to the National Coral Reef Institute at Nova Southeastern University. Much of the nation's reef research takes place there.

"If you are going to study coral, you go to Florida," said Conrad Lautenbacher, head of the National Oceanic and Atmospheric Administration, a federal agency that sponsors the symposium and gives federal money to reef research. "This is where you go to learn about management of reef areas."

Scientists at the reef institute apply their research to help communities preserve marine habitat while solving problems. For example, after researchers mapped the reef along the South Florida coastline, officials moved anchorage areas farther from Port Everglades to keep ships from running aground or dropping their anchors on the coral.

"Reefs provide living spaces for plants and animals. When it's flattened, you lose that habitat, so you lose those living organisms — corals, sponges and all kinds of fish, such as snapper and grouper," said Richard Dodge, director of NSU's reef institute.

Reefs also provide recreation, such as snorkeling and diving, while nurturing a big boating and fishing industry.

"They protect the shore by providing a buffer to wind and waves," Dodge said. "They create sand for the beach, prevent flooding and provide hurricane protection. All that is diminished when you lose the reef."

Scientists estimate 20 percent to 50 percent of the world's reef has been lost over the

past four decades. Coral is sensitive to even slight changes in water temperature and much of the world's reef is bleaching from apparent warming.

"This symposium is a way to share what's going on — very topical research, especially in this time of crisis," Dodge said. "We have some of the most extensive research right here, with reefs very close to a huge human population. We can be a microcosm of how reefs should be managed."

South Florida researchers will display their reef mapping, and Moulding will present her findings on the baby corals.

Some corals have grown big enough to be seen without a microscope, and Moulding hopes to begin putting them in larger salt-water tanks outside her lab in Dania Beach. In several years, she plans to put them back on the reef and hope they settle and grow.

"In the lab, they have higher survival rates because we can control external conditions, such as predators," she said. "Oceans have many dangers for small larva. By increasing survivorship, we have a better chance of growing more coral."

This is just one small step. More substantial measures must be taken, she said, such as controlling storm-water runoff and polluted streams from land along the coast.

"This experiment is so small-scale and there are so many problems on reefs that this is not the ultimate solution," Moulding said. "It's just one of the tools we can use to restore damaged areas."

William E. Gibson can be reached at 202-824-8256. His blog, Juice, can be found at Sun-Sentinel.com/juice.

THE NEWS&OBSERVER
newsobserver.com

Scientists wary of coral as fashion

By Samantha Critchell, The Associated Press

July 7, 2008

NEW YORK -- Sea coral is blessed with wonderful colors, an intricate design and memories of the lapping ocean. It's no wonder that the worlds of fashion and home decor are in the midst of a love affair with it.

This red coral reef candleholder is part of a trend that some marine preservationists find alarming.
PHOTO COURTESY OF MICHAEL ARAM

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Tapping a trend

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Precious kitsch

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"One coral necklace doesn't necessarily mean the end of the world, but why, when you can still celebrate it in a form that's representational, still use it? It doesn't make sense," he says.

Aram favors casting coral sculptures in metal, then painting with enamel. Coral's natural unpredictable shape allows him a lot of flexibility, he says.

"My coral is evocative of the real thing, but mine can be a fantasian coral -- you can be pretty wild with coral."

Concern over ocean reefs leads push to halt coral sales

Samantha Critchell; The Associated Press

July 7, 2008

Sea coral is blessed with wonderful colors, an intricate design and memories of the lapping ocean. It's no wonder that the worlds of fashion and home décor are in the midst of a love affair with it.

Some argue, though, that coral is too precious to wear.

"We want to discourage consumers from purchasing coral," says scientist Andrew Baker. "It's like ivory. It's a product of a living animal, and the harvest of this item is unsustainable."

It's unsustainable not because new coral won't grow, he says, but because there are no limits on the use or sale of coral and it's being harvested at a rate that nature can't keep up with.

"Dredging deep-sea coral forests is like clear-cutting the rain forest for sparrows: You're doing so much damage for something so small," says Baker, who is also an assistant professor at the at the University of Miami and the Pew Institute for Ocean Science.

Baker and a team from the Too Precious to Wear campaign, helmed by the nonprofit group SeaWeb that also took on the caviar and restaurant seafood causes, is lobbying to add coral to the Convention of International Trade in Endangered Species. That global group has put limits on rhinoceros horns, tiger feet and ivory. Coral had made it to the last round of negotiations in 2007, according to Baker, but failed to make it to the final list.

A similar case will be presented this week to the International Coral Reef Symposium in Fort Lauderdale, Fla., which will be attended by more than 2,500 scientists, economists, conservationists and educators. The theme of the meeting is reefs for the future.

Baker doesn't want the world to wait. SeaWeb had noticed in the past couple of years that coral – real, faux and artistic interpretations – was all over the fashion runways and

home-decorating magazines, explains Julia Robertson, program manager for Too Precious to Wear.

Around the same time, though, global warming, for which coral is considered a key indicator, had become a buzz topic, so marine-science groups saw an opportunity to raise public awareness, she says.

“We wanted to tap into the recognition of coral in fashion, design, jewelry and home décor. It’s easier to talk to people when they know what you’re talking about,” Robertson says.

The campaign was launched earlier this year with partners including Pottery Barn, Tiffany & Co., Lela Rose, Vena Cava and Chantecaille Beaute.

Sylvie Chantecaille says her beauty company got involved about 18 months ago, largely because of her interest in the ocean.

“My whole family snorkels, dives. I grew up in the South of France diving, and I have seen a change in the ocean over the years,” she explains. “When you spend so much time under the water, you realize how amazing it is. I wanted to do something to protect it.”

So Chantecaille developed Protect the Paradise compacts – one with eye shadow, another with powder – embossed with miniature ocean scenes to raise money for marine research and conservation. The project put Chantecaille in touch with other coral fans, including Baker, who taught her to appreciate their beauty from afar.

“I love the look of coral. They’re so beautiful,” Chantecaille says. “I used to be completely in love with coral jewelry so I totally understand the appeal.”

But, she adds, “It’s going to become like ivory. I used to wear ivory, but I’d never wear it today now that I know what it means and what it symbolizes.”

Tiffany stopped selling coral jewelry in 2003 and instead uses precious stones to replicate the exotic color and shapes found in the sea. The company brought the bulk of manufacturing in house, allowing it to examine sourcing, explains Linda Buckley, Tiffany vice president of public relations. While coral was not a huge part of the assortment, it set off some bells.

“Tiffany is closely associated with the natural world – it’s where we get our inspiration and materials,” Buckley says. She adds: “If you have healthy coral reefs, you have healthy oceans, healthy seabeds and healthy oysters – and we get our pearls from healthy oysters.”

(Buckley notes that Tiffany has also examined their use of cultured pearls and decided it doesn’t pose the same environmental risks as coral.)

“No one disputes coral as an object of beauty,” says Baker, “but it is more important as a habitat.”

Coral from shallow reefs, which are mostly a light color, tend to be used in interior décor, while the deep-sea corals – known as the “precious” black, pink and red corals from the Mediterranean Sea, Indian Ocean and the Pacific near Hawaii – are used for jewelry.

Yet, you only have to go to South Florida, where Baker is based, to find white coral being sold as a souvenir in kitschy shell shops, even though it was harvested thousands of miles away. This frustrates Baker, and he thinks it probably confuses tourists, who are getting a mixed message not to disrupt the reefs when scuba-diving but are allowed to buy chunks of dead coral.

“It’s like going to a zoo,” he says. “You learn about threatened tigers and then go to the zoo store and find a tiger pelt.”

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Coral alternatives

A sampling of coral-inspired items:

- Anika Brazil Swim bathing suits, to debut later this month, with glass coral-colored beads as ornamentation.

- Stetson coral-colored cowboy boots. “We love using it as a natural complement to the rich brown leathers you see so often in western boots,” says Pam Fields, CEO of Stetson. “For women, the warmth feminizes the collection and ties nicely into the coral and turquoise accessories that we see dominating the ladies area. For men, it is a way to wear a rich color that isn’t pink.”

- Coral-print sheets and resin-sculpted coral candleholders from Pottery Barn.

- Tiffany & Co. jewelry with a coral-branch motif. “We have a collection in sterling silver with a necklace, bracelet and charms and earrings in white gold,” says Linda Buckley, Tiffany’s vice president of public relations. “The few people who have asked about coral and why we don’t sell it, once we explain the reason why, they are very supportive.”

- Michael Aram’s hand-hammered steel bowls with lacquered faux coral-branch bases.

- Torn by Ronny Kobo’s coral-motif tank tops for shopbop.com.

- Creme de La Mer’s World Ocean Day moisturizing cream. While technically not a coral product, it is based on a sea-kelp formula, and the company makes donations to a coral-saving campaign and says without healthy oceans – of which healthy coral reefs are key – there’d be no secret “miracle broth” ingredient.

Times&Transcript

Coral is 'too precious to wear'

Jewelry manufacturers, consumers looking to help protect the world's coral

By Samantha Critchell, The Associated Press

July 7, 2008

This photo provided by Chantecaille shows a coral-inspired compact by Chantecaille. Sea coral is blessed with wonderful colours, an intricate design and reminders of the lapping ocean. It's no wonder that the worlds of fashion and home decor are in the midst of a love affair with it. Some argue, though, that coral is too precious to wear and they've started a campaign for faux coral.

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Baker and a team from the Too Precious to Wear campaign, helmed by the non-profit group SeaWeb that also took on the caviar and restaurant seafood causes, is lobbying to add pink and red corals, also known as Corallium, to the Convention of International Trade in Endangered Species, the global group that has put limits on rhinoceros horns, tiger feet and ivory. The coral had made it to the last round of negotiations in 2007, according to Baker, but failed to make it to the final list.

This week, the pressures corals are facing will be discussed at the International Coral Reef Symposium, which will be attended by more than 2,500 scientists, economists, conservationists and educators. The theme of the meeting is reefs for the future.

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Coral Reef Symposium Gets Under Way

July 7, 2008

FORT LAUDERDALE, Fla. -- A report from the National Oceanic and Atmospheric Administration indicates half of all US coral reefs are either in poor or fair condition, and it says humans are to blame.

Analysts found reefs located closer to cities were more damaged by pollution, trash, and overfishing.

Today, the Broward County Convention Center will host one of the largest gatherings of scientist, policy experts and conservationist from 150 countries at the 11th International Coral Reef Symposium. Their focus will be coral reef conservation and protection.

The Symposium and educational events are free and open to the public.

redOrbit

Human Impact Threatens U.S. Coral Reefs

By Dan Vergano

July 7, 2008

Half of all U.S. coral reefs, the center of marine life in the Pacific and Caribbean oceans, are either in poor or fair condition, a federal agency warns today.

The report by the National Oceanic and Atmospheric Administration places much of the blame on human activities and warns of further oceanwide decline.

Reefs closer to cities were found to suffer poorer health, damaged by trash, overfishing and pollution.

"Human impacts are making the big difference," says NOAA's Timothy Keeney, co-chair of the U.S. Coral Reef Task Force. "Humans are the most invasive species of all."

Coral reefs are living creatures made from the hardened shells of tiny polyps. They cover only 1% of the world's surface but play an outsize role in the oceans, serving as nurseries for young fish, centers of diversity for species and the underpinnings of some islands. Two once-common Caribbean species, elkhorn and staghorn coral, are now threatened.

Released today at the International Coral Reef Symposium in Fort Lauderdale, the report looks at the 15 federally administered shallow-water reef preserves in the Pacific and Caribbean. Among the findings:

*Caribbean reefs were blasted in 2005 by hurricanes, disease and bleaching that killed 90% of all corals in some locations. Bleaching is a loss of color often attributed in part to global warming.

*Seafood species numbers are in poor condition at both Caribbean and Pacific reefs.

"Coral reefs are beautiful, but they are also tremendous economic resources," says NOAA marine biologist Jenny Waddell. Healthy reefs benefit tourism and fisheries, and serve as coastal storm breaks, she says.

The report is based on survey responses from reef managers, as well as reports from 270 scientists, Waddell says.

"We may be reaching a tipping point for coral reefs from changes in climate and overfishing, says NOAA's Mark Monaco. "But that doesn't mean we can give up."

The U.S. Coral Reefs Are In Bigger Danger Than Ever

By Michael Todd

July 7, 2008

A recent report documented and presented by the National Oceanic and Atmospheric Administration shows that about half of the U.S. coral reefs are in a rather poor condition and without an immediate intervention it will only get worse.

According to the bureau's investigations, the marine life in the Caribbean Oceans and in the Pacific is at an all-times low, with the worrying decline being directly linked to a series of human activities such as pollution, trash dumping and overfishing sessions.

"Human impacts are making the big difference," said NOAA's Timothy Keeney, co-chair of the U.S. Coral Reef Task Force, as quoted by USA Today. "Humans are the most invasive species of all," he concluded.

The study, released earlier today and widely debated at the International Coral Reef Symposium in Fort Lauderdale, presents the bureau's conclusions after a careful analysis of 15 shallow-water reef preserves administered by the government. Some of the most alarming news refer to certain areas where more than 90 percent of all corals have been killed as a result of hurricanes, bleaching and disease. While hurricanes cannot be linked to humans, it is another story when it comes to disease spread and bleaching – the disease is connected to the massive pollution of the oceans and the bleaching process, which causes a loss of color, is a direct effect of global warming.

The coral reefs have been presented as being a lot more than just beautiful structures produced by living organisms and besides benefiting tourism they also bring a significant support in breaking costal storms.

The conclusions reached show that the whole situation is in disparate need of a good and rapid solution if not for reversing the process, at least for stopping the decline, which can only be found by bringing as many people as possible closer to the issue and presenting the effects of our actions.

PalmBeachPost.com

Growth, pollution among leading killers of Florida's reefs

By Eliot Kleinberg, Palm Beach Post Staff Writer

July 7, 2008

FORT LAUDERDALE — Half of America's reefs, particularly those adjacent to population areas, such as Palm Beach County and the Treasure Coast, are in "poor" or "fair" condition, the National Oceanic and Atmospheric Administration said today.

The 569-page status report on reefs across the United States, the first by NOAA in three years, was released at the International Reef Symposium, meeting this week on the American mainland for the first time in three decades.

Population growth, overuse, overfishing and pollution have severely damaged Florida's reef system, the world's third largest and the only barrier reef system in North America. It stretches from the Dry Tortugas, south of Key West, north to the St. Lucie Inlet, and accounts for about 84 percent of the nation's reef habitat.

A study by Nova Southeastern University, based in nearby Davie and the symposium's local organizer, has shown reefs account for 60,000 jobs and a $6 billion economic impact in southern Florida alone.

"We haven't seen significant changes in coral cover in southeast Florida in the last five years," Chantal Collier of the Florida Department of Environmental Protection, the author of the report's chapter on that region, said today. "But we have very low coral cover in this region to begin with."

The southeast Florida reef, from the upper keys to the St. Lucie Inlet, encompasses a third of Florida's reefs but has gotten less attention than the reefs of the middle and lower keys, NOAA said. That has "markedly increased in the last few years," NOAA's report said.

But, the report concluded, "the unprecedented development of southeast Florida and the multiple pressures from its growing urban population continue to outpace environmental protection efforts at federal, state, local and citizen levels."

This afternoon, Gov. Charlie Crist will sign the Ocean Outfall Bill, passed in May. It requires the dumping of 300 million gallons a day of domestic wastewater be reduced dramatically by 2018 and eliminated by 2025.

"We must act as responsible and respectable stewards," U.S. Rep. Ron Klein (D-Boca Raton) told the meeting. "If not, history will remember us as the irresponsible generation that allowed their destruction. Which we're not going to do."

This morning, Klein presented a $1.1 million federal check to the National Coral Reef Institute and the Climate Change Research Initiative.

Also, bills now in Congress would reauthorize the Coral Reef Conservation Act, and would pay for more monitoring and enforcement of protections. They include research on ocean acidification and its impact on reefs.

"This message that coral reefs are in trouble is out there and people are acting on it," Kacky Andrews, manager of NOAA's Coral Reef Conservation Program, said at the NOAA news briefing.

More than 2,500 people from more than 100 countries are attending the 11th reef symposium. It has been held every four years since 1969. This year is the International Year of the Reef; the last such "year" was in 1997.

"We are clearly at a crossroads for coral reefs," Richard Aronson, President of the International Society of Reef Studies, told the opening session.

"We're going to hear some more bad news at this meeting. But the next few years are going to determine if it's thumbs up or thumbs down," Aronson said. "We have to stay positive, positive, positive, in our outlook, no matter how bleak things look."

Worldwide, scientists say, more than one-fifth of the world's reefs already are believed lost and scientists predict another fourth will vanish in the next three decades if human impacts aren't reduced.

The Caribbean has suffered "major insults," with bleaching and disease killing 90 percent of the coral reefs in Puerto Rico and the Virgin Islands in nine months, according to NOAA marine biologist Jenny Waddell.

~eliot_kleinberg@pbpost.com

Humans Endanger Coral Reefs

By Diane Anderson

July 7, 2008

A report carried out by the National Oceanic and Atmospheric Administration points to the alarming fact that half of all US coral reefs are in poor health and that responsibility belongs to human beings.

Today will take place the 11th International Coral Reef Symposium, which will be hosted at The Broward County Convention Center. Scientist, policy experts and conservationists from 150 countries will gather in order to discuss about coral reef conservation and protection.

Issued today at the International Coral Reef Symposium in Fort Lauderdale, the report refers to the 15 federally managed shallow-water coral preserves in the Pacific and Caribbean. It is based on survey answers from coral reef administrators and on reports for more that 250 scientists, says Jenny Waddell, NOAA marine biologist.

Experts say reefs located nearby cities were discovered in poorer condition, destroyed by garbage, overfishing and pollution. "Human impacts are making the big difference," affirmed NOAA's Timothy Keeney, co-chair of the U.S. Coral Reef Task Force. "Humans are the most invasive species of all."

Among the report's findings, it has been discovered that seafood species are in deplorable state and that almost 90% of all reef in some Caribbean areas were wretched in 2005 by bleaching, losing their color, and by hurricanes.

Specialists approximate that 20 percent to 50 percent of the world's reef has been damaged in the past 40 years. Coral reefs feel even the slight variations in water temperature and global warming has a destructive impact on them.

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Report Shows Coral Reefs In U.S. Face Very Uncertain Future

July 7, 2008

Washington (dbTechno) - An investigation carried out by the National Oceanic and Atmospheric Administration has shown that coral reefs in the U.S. are in bad shape, and are in serious danger in the near future.

The report was presented following an investigation into the coral reefs, as well as marine life overall.

The study was released on Monday morning and was debated at the International Coral Reef Symposium in Ft. Lauderdale, Florida.

It shows that 90% of all corals have been killed due to hurricanes, disease, as well as bleaching.

The disease spread and bleaching have been linked to pollution caused by humans, as well as global warming.

The report also showcased that marine life in the Caribbean Oceans and Pacific Ocean are at an all-time-low. These were also linked to pollution, trash, and other human factors.

As quoted by USA Today, NOAA's Timothy Keeney, co-chair of the U.S. Coral Reef Task Force stated "Humans are the most invasive species of all."

They are calling for rapid and immediate action to fix these issues with the coral reefs and marine life.

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NOAA report states half of US coral reefs in 'poor' or 'fair' condition

July 7, 2008

Nearly half of U.S. coral reef ecosystems are considered to be in "poor" or "fair" condition according to a new NOAA analysis of the health of coral reefs under US jurisdiction. The NOAA report says that the nation's coral reef ecosystems, particularly those adjacent to populated areas, continue to face intense human-derived threats and while remote reefs are subject to threats such as marine debris, illegal fishing and climate change.

The report issued today, The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008, says that the nation's coral reef ecosystems, particularly those adjacent to populated areas, continue to face intense human-derived threats from coastal development, fishing, sedimentation and recreational use. Even the most remote reefs are subject to threats such as marine debris, illegal fishing and climate-related effects of coral bleaching, disease and ocean acidification.

The report was released by NOAA at the 11th International Coral Reef Symposium in Fort Lauderdale, Fla. More than 270 scientist and managers working throughout the Gulf of Mexico, Caribbean, the Atlantic and Pacific authored the 15 jurisdiction-specific chapters of the report. The scientists graded the coral ecosystems on a five tier scale: excellent, good, fair, poor and unknown.

"NOAA's coral program has made some significant progress since it was established 10 years ago, but we need to redouble our efforts to protect this critical resource," said retired Navy Vice Admiral Conrad C. Lautenbacher Jr., Ph.D., under secretary of commerce for oceans and atmosphere and NOAA administrator.

The 569-page document details coral reef conditions in the U.S. Virgin Islands, Puerto Rico, Navassa Island, southeast Florida, the Florida Keys, Flower Garden Banks, the Main Hawaiian Islands, the Northwestern Hawaiian Islands, American Samoa, the Pacific Remote Islands, the Republic of the Marshall Islands, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam and the Republic of Palau.

"The report shows that this is a global issue," said Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force. "While the report indicates reefs in general are healthier in the Pacific than the Atlantic, even remote reefs are subject to threats stemming from climate change as well as illegal fishing and marine debris."

The conditions of U.S. coral reefs have been declining for several decades according to the report's authors. As an indicator of this decline, since the last status report was released in 2005, two coral species -- Elkhorn and Staghorn corals --- have become the first corals ever listed as threatened under the Endangered Species Act.

The 2008 report is the third in a series, representing an evolving effort to track the condition of coral reef ecosystems at both local and national scales. It was called for in the National Coral Reef Action Strategy (NCRAS) and was designed to address the primary threats, goals and objectives outlined in the NCRAS, the Coral Reef Conservation Act of 2000, and other guid¬ance documents. NOAA's Center for Coastal Monitoring and Assessment's Biogeography Branch led the development and production of the report with support from NOAA's Coral Reef Conservation Program.

The State of Coral Reef Ecosystems of the United States and Pacific Freely Asso¬ciated States: 2008 is available for free download at http://ccma.nos.noaa.gov/stateofthereefs .

Source: NOAA Headquarters

NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
UNITED STATES DEPARTMENT OF COMMERCE

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The conditions of U.S. coral reefs have been declining for several decades according to the report's authors. As an indicator of this decline, since the last status report was released in 2005, two coral species - Elkhorn and Staghorn corals - have become the first corals ever listed as threatened under the Endangered Species Act.

The 2008 report is the third in a series, representing an evolving effort to track the condition of coral reef ecosystems at both local and national scales. It was called for in the National Coral Reef Action Strategy (NCRAS) and was designed to address the primary threats, goals and objectives outlined in the NCRAS, the Coral Reef Conservation Act of 2000, and other guidance documents. NOAA's Centre for Coastal Monitoring and Assessment's Biogeography Branch led the development and production of the report with support from NOAA's Coral Reef Conservation Program.

Source: NOAA

e! Science News
Your daily dose of Eureka!

NOAA report states half of US coral reefs in 'poor' or 'fair' condition

July 7, 2008

Nearly half of U.S. coral reef ecosystems are considered to be in "poor" or "fair" condition according to a new NOAA analysis of the health of coral reefs under U.S. jurisdiction. The report issued today, The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008, says that the nation's coral reef ecosystems, particularly those adjacent to populated areas, continue to face intense human-derived threats from coastal development, fishing, sedimentation and recreational use. Even the most remote reefs are subject to threats such as marine debris, illegal fishing and climate-related effects of coral bleaching, disease and ocean acidification.

The report was released by NOAA at the 11th International Coral Reef Symposium in Fort Lauderdale, Fla. More than 270 scientist and managers working throughout the Gulf of Mexico, Caribbean, the Atlantic and Pacific authored the 15 jurisdiction-specific chapters of the report. The scientists graded the coral ecosystems on a five tier scale: excellent, good, fair, poor and unknown.

"NOAA's coral program has made some significant progress since it was established 10 years ago, but we need to redouble our efforts to protect this critical resource," said retired Navy Vice Admiral Conrad C. Lautenbacher Jr., Ph.D., under secretary of commerce for oceans and atmosphere and NOAA administrator.

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Huliq News

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CBCnews.ca

Coral reef losses threaten marine life, warn U.S. scientists

July 7, 2008

Half of all coral reefs off U.S. coastlines are in either poor or fair condition, say scientists who warn that marine life in the Pacific and Caribbean oceans depends on the reefs.

Garbage, overfishing and water pollution are the main culprits, with reefs closest to urban centres suffering the most.

Researchers with the National Oceanic and Atmospheric Administration sounded the warning Monday at the International Coral Reef Symposium in Fort Lauderdale.

"We need to redouble our efforts to protect this critical resource," NOAA administrator Conrad Lautenbacher said in a release.

The report singled out the threat of coral bleaching, which occurs when the reef is under stress, from increased water temperature, for example, and it releases photosynthesizing algae that live within its tissue.

The algae are responsible for the coral's distinctive colour, and once they are lost, the reef deteriorates.

American coral reefs have been declining for several decades, according to the report's authors. Since the last status report was released in 2005, two species — Elkhorn and Staghorn corals — have become the first ever listed as threatened under the U.S. Endangered Species Act.

Sun-Sentinel.com

Federal agency says South Florida reefs in fair or poor condition

By Rafael A. Olmeda

July 7, 2008

Boynton Beach's Biv Watson, the dive coordinator for the Palm Beach County Reef Research Team and a member of the Palm Beach Hammer Heads, counts fish on the Delray Ledges during the Great Annual Fish Count to identify and document fish diversity and population trends for REEF, the Reef Environmental Education Foundation. (Sun-Sentinel/Joe Amon / July 29, 2007)

Nearly half of the coral reefs under U.S. jurisdiction, including all the reefs in southeast Florida, were rated in fair or poor condition in a survey released by the National Oceanic and Atmospheric Administration today.

According to the analysis released at the International Coral Reef Symposium being

held at the Broward County Convention Center, reefs from the Florida Keys to Port St. Lucie did not see any real decline in quality over the last five years, but that is partly because the damage has been done over decades of development, pollution and other factors, said Jenny Waddell, the study's lead editor.

"Only recently have people become aware of the potential damaging effects of human activity," Waddell said.

In releasing the study, "The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008," NOAA scientists said they hope to spur government and the public to make reef protection a greater priority.

Factors that lead to declining reef quality include pollution, temperature warming and untreated sewer water, experts said.

The suffering of South Florida's reef system could have been worse, Waddell said.

Some of the reef damage caused by hurricanes in 2004 and 2005 was offset by the natural churning that took place, allowing nutrients to feed the algae on coral and prevent widespread bleaching that might otherwise have harmed the reefs.

Reef systems along the South Florida coast are credited with attracting tourism, boosting the local economy and creating thousands of jobs.

But they also attract a good deal of recreational fishing, one of the causes of the decline in reef quality.

Rafael Olmeda can be reached at rolmeda@sun-sentinel.com or 954-356-4694.

honoluluadvertiser.com

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July 7, 2008

Advertiser Staff

Nearly half of U.S. coral reef ecosystems are considered to be in "poor" or "fair" condition, according to an NOAA analysis of the health of coral reefs under U.S. jurisdiction.

The findings were released today at the 11th International Coral Reef Symposium in Fort Lauderdale, Fla.

The main Hawaiian Islands and the Northwestern Hawaiian Islands were included in the report, which also said reefs in the Pacific are generally healthier than the Atlantic.

According to "The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008," the the nation's coral reef ecosystems, particularly those adjacent to populated areas, continue to face intense human-derived threats from coastal development, fishing, sedimentation and recreational use. The report said even the most remote reefs are subject to threats such as marine debris, illegal fishing and climate-related effects of coral bleaching, disease and ocean acidification.

More than 270 scientist and managers working throughout the Gulf of Mexico, Caribbean, the Atlantic and Pacific authored the 15 jurisdiction-specific chapters of the report. The scientists graded the coral ecosystems on a five tier scale: excellent, good, fair, poor and unknown. Their findings indicate coral reefs have been declining for several decades and said that two coral species — Elkhorn and Staghorn corals --- have become the first corals ever listed as threatened under the Endangered Species Act.

Besides the main Hawaiian Islands and the the Northwestern Hawaiian Islands, the 569-page document details coral reef conditions in the U.S.. Virgin Islands, Puerto Rico, Navassa Island, southeast Florida, the Florida Keys, Flower Garden Banks, American Samoa, the Pacific Remote Islands, the Republic of the Marshall Islands, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam and the Republic of Palau.

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TCPALM
FLORIDA'S TREASURE COAST AND PALM BEACHES

Southeast Florida reefs in poor condition

Rafael A. Olmeda, Sun-Sentinel

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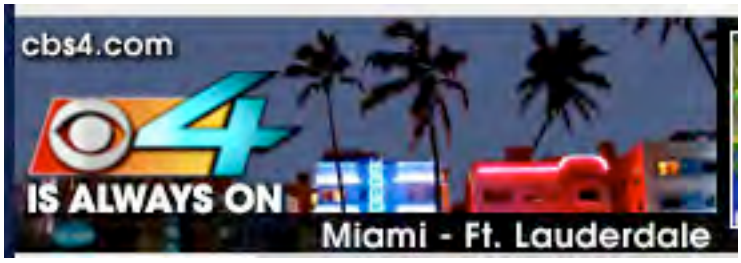

Ft. Lauderdale Hosts Symposium To Save Coral Reefs

Coral Reefs In Florida Generate $6.3 Billion In Revenue

July 7, 2008

FT. LAUDERDALE (CBS4) — Hundreds of politicians, experts on the environment and marine biologists have gathered in South Florida to discuss how to save Florida's coral reef and reefs around the world.

The 11th International Coral Reef Symposium got underway Monday in Ft. Lauderdale. The symposium is held every four years. It's fitting that it is being held this year which has been designated the International Year of the Reef which is a worldwide campaign to raise awareness about the value and importance of coral reefs and threats to their sustainability.

"With this year recognized as the International Year of the Reef, it is a good opportunity to raise awareness, educate and motivate people about the importance and vulnerability of coral reefs," said Florida Department of Environmental Protection (DEP) Secretary Michael W. Sole. "Florida is committed to preserving the biodiversity, health, heritage and social and economic value of coral reef ecosystems."

Destruction of coral reefs from pollution, overfishing, coastal development and climate change is happening on a global scale. At the symposium, scientists, policymakers, conservationists, and managers are discussing and implementing science-based strategies to improve and increase coral reef protection.

During Monday's activities, Governor Charlie Crist signed a bill into law that will eliminate the use of ocean outfalls for wastewater disposal in southeast Florida.

"Coral reefs are extraordinary living ecosystems that draw visitors, support our economy

and protect our beaches and homes from erosion and storm surge," said Governor Crist. "Florida will continue to take steps, such new legislation reducing nutrients and other pollutants in the ocean that will protect these sensitive ecosystems for residents and visitors for generations to come"

An extensive, beautiful coral reef ecosystem stretches more than 100 miles along the southeast Florida coast, from Miami-Dade to Martin County. These reefs are part of the third longest reef system in the world and are one of the greatest natural resources in Florida and the United States. Roughly one third of Florida's 18 million residents live within this region, which attracts more than 25 million visitors a year. Fishing, diving and boating in the region provide a tremendous source of income for Florida and its coastal communities. Natural and artificial reefs in Florida generate $6.3 billion in sales and income and sustain more than 71,000 jobs annually.

Around the world, coral reefs generate $375-billion in revenue and protect the coastlines of 109 countries. They also provide 10-percent of the world's food supply.

Currently, two-thirds of the world's reefs are in danger of being destroyed.

Associated Press

NOAA report: US coral reefs in severe decline

By Brian Skoloff

July 7, 2008

FORT LAUDERDALE, Fla. (AP) — Almost half the coral reef ecosystems in United States territory are in poor or fair condition, mostly because of rising ocean temperatures, according to a government report released Monday.

The reefs discussed in the National Oceanic and Atmospheric Administration report serve as breeding grounds for many of the world's seafood species and act as indicators of overall ocean health.

"They are a major indicator of something that could go wrong with the environment," said Timothy Keeney, NOAA's deputy assistant secretary for oceans and atmosphere.

Keeney said 25 percent of all marine species need coral reefs to live and grow, while 40 percent of the fish caught commercially use reefs to breed.

"If we lose the reefs, you lose a very significant and important habitat," Keeney said.

Since NOAA's last report in 2005, the Caribbean region has lost at least 50 percent of its corals, largely because sea temperatures have risen, Keeney said.

Elkhorn and staghorn corals have also been listed as threatened under the Endangered Species Act, the first corals ever to receive such protections based on rapid declines.

The 569-page report took 18 months to complete with input from 270 federal, state and university scientists. It documented 15 ecosystems in U.S. states and territories, including the U.S. Virgin Islands, Puerto Rico, Florida, Hawaii, American Samoa and Guam. It was released at the 11th International Coral Reef Symposium in Fort Lauderdale.

The report's authors noted it was the first detailed NOAA study to go beyond anecdotal evidence and patchy science to provide conclusive data that the nation's coral reefs are in trouble.

"We can actually document these declines now," said Jenny Waddell, coeditor of the study and a NOAA marine biologist.

The report found that coral bleaching caused largely by rising sea temperatures is a major factor. Carbon dioxide released by burning fossil fuels is absorbed by the oceans, making the waters more acidic and corrosive on corals.

Land-based pollution, such as sewage, beach erosion, coastal development and overfishing also are to blame.

The study does not make recommendations, but simply serves as what its authors deem a "call to action" for state governments and Caribbean countries.

Keeney sees corals as "a sentinel species of the planet," and calls them "the rain forests of the sea." Beyond their importance as breeding grounds for fish, reefs could hold cures for diseases.

He said there are also positive signs that people are beginning to understand "the value of coral reefs to our economy."

Kenney argues the report adds another layer of scientific certainty that man-made climate change is stressing the nation's oceans and could ultimately have huge economic and social impacts if its effects are not reversed.

"There's no question that ... man-made actions are the major cause for these losses and stresses on the reefs," Keeney said.

Dave Allison, a senior campaign director for the advocacy group Oceana, said the entire world's coral reefs "border on disaster."

"All the world's coral reefs are being stressed by both short-term and long-term human impacts," Allison said. "We've known about the human impact on corals for decades. It's just that the combination of problems confronting the corals have never come together in such a perfect storm."

NOAA report: http://www.noaanews.noaa.gov/stories2008/20080707_coral.html

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Written By BRIAN SKOLOFF

wnyt.com

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NOAA report: US coral reefs in severe decline

July 7, 2008

By Brian Skoloff

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"We can actually document these declines now," said Jenny Waddell, coeditor of the study and a NOAA marine biologist.

The report found that coral bleaching caused largely by rising sea temperatures is a major factor. Carbon dioxide released by burning fossil fuels is absorbed by the oceans, making the waters more acidic and corrosive on corals.

Land-based pollution, such as sewage, beach erosion, coastal development and overfishing also are to blame.

The study does not make recommendations, but simply serves as what its authors deem a "call to action" for state governments and Caribbean countries.

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Associated Press

July 7, 2008

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San Francisco Chronicle

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July 7, 2008

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The Seattle Times

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PalmBeachPost.com | Blogs

McCain to Crist: Congrats

By Michael C. Bender

July 7, 2008

In South Florida today for the International Coral Reef Symposium, Gov. Charlie Crist weighed in on handful of issues.

Casinos: On his casino pact with the Seminoles tossed by the state Supreme Court last week, Crist said he was considering asking for a rehearing or appealing to the U.S. Supreme Court. “I love working with the legislature, so of course if that’s the best approach to take that’s what we’ll do.”

Executions: Crist said he deciding which warrants to sign. “I will be signing some shortly.”

Engagement: Crist, who asked New York socialite Carole Rome to be his wife on Thursday, said he received a call over the weekend from Republican presidential candidate John McCain. “He called to congratulate me on getting engaged,” Crist said.

(Eliot Kleinberg, Palm Beach Post staff writer)

peopleandplanet.net
people and coasts and oceans

Half of US coral reefs are in trouble

July 7, 2008

Nearly half of the coral reef ecosystems in the United States are in "poor" or "fair" condition, according to a new report released by the National Oceanic and Atmospheric Administration (NOAA). Our contributing editor. Henrylito Tacio, reports from the 11th International Coral Reef Symposium, in Fort Lauderdale, Florida.

"The nation's coral reef ecosystems, particularly those adjacent to populated areas, continue to face intense human-derived threats, especia;lly those from development, fishing, sedimentation, and recreational use," said NOAA in a press statement released during the launching of the report here.

Winter plague-like coral disease at the Flower Garden Banks National Marine Sanctuary (FGBNMS) in the Gulf of Mexico. Photo: FGBNMS/Schmahl.

The report, The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008, was issued during the first day of the 11th International Coral Reef Symposium (ICRS).

More than 270 scientists and managers, working throughout the Gulf of Mexico, Caribbean, the Atlantic and Pacific, authored the 15-jurisdiction specific chapters of the 569-page document. The scientists graded the coral ecosystems on a five tier scale: excellent, good, fair, poor, and unknown.

Global issue

"The report shows that this is a global issue," said Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the US Coral Reef Task Force. "While the report indicates reefs in general are healthier in the Pacific than

the Atlantic, even remote reefs are subject to threats stemming from climate change as well as illegal fishing and marine debris."

The declining conditions of the US coral reefs didn't happen overnight, the experts make clear. Snce the last status report was released in 2005, two coral species – Elkhorn and Staghorn corals – have been listed as threatened under the Endangered Species Act.

"We need to redouble our efforts to protect this critical resource," urged retired navy Vice Admiral Conrad C. Lautenbacher Jr., NOAA Administrator.

For further details, visit the website of NOAA at www.noaa.gov. The report can be accessed from the Center for Coastal Monitoring and Assessment

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The report found that coral bleaching caused largely by rising sea temperatures is a major factor. Carbon dioxide released by burning fossil fuels is absorbed by the oceans, making the waters more acidic and corrosive on corals.

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The study does not make recommendations, but simply serves as what its authors deem a "call to action" for state governments and Caribbean countries.

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NOAA report: US coral reefs in severe decline

By Brian Skoloff, Associated Press Writer

July 7, 2008

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"They are a major indicator of something that could go wrong with the environment," said Timothy Keeney, NOAA's deputy assistant secretary for oceans and atmosphere.

Keeney said 25 percent of all marine species need coral reefs to live and grow, while 40 percent of the fish caught commercially use reefs to breed.

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Since NOAA's last report in 2005, the Caribbean region has lost at least 50 percent of its corals, largely because sea temperatures have risen, Keeney said.

Elkhorn and staghorn corals have also been listed as threatened under the Endangered Species Act, the first corals ever to receive such protections based on rapid declines.

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The report's authors noted it was the first detailed NOAA study to go beyond anecdotal evidence and patchy science to provide conclusive data that the nation's coral reefs are in trouble.

"We can actually document these declines now," said Jenny Waddell, coeditor of the study and a NOAA marine biologist.

The report found that coral bleaching caused largely by rising sea temperatures is a major factor. Carbon dioxide released by burning fossil fuels is absorbed by the oceans, making the waters more acidic and corrosive on corals.

Land-based pollution, such as sewage, beach erosion, coastal development and overfishing also are to blame.

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Global Warming Chief Among Threats to Coral Reefs

July 7, 2008

FORT LAUDERDALE, Florida, July 7, 2008 (ENS) - Nearly half of U.S. coral reef ecosystems are considered to be in "poor" or "fair" condition according to a new analysis of the health of coral reefs under U.S. jurisdiction by the National Oceanic and Atmospheric Administration, NOAA.

The report was released by NOAA today at the opening of the 11th International Coral Reef Symposium in Fort Lauderdale where more than 2,500 scientists and government officials are gathered this week to discuss coral reef protection strategies and research priorities to further protection of sensitive coral ecosystems.

The symposium's theme, Reefs for the Future, highlights the importance of the world's coral reefs, as well as the urgent need for accelerated action to protect them.

Coral reef off the coast of southeastern Florida (Photo by D. Gillam courtesy NOAA)

"The report shows that this is a global issue," said Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the U.S. Coral Reef Task Force. "While the report indicates reefs in general are healthier in the Pacific than the Atlantic, even remote reefs are subject to threats stemming from climate change, as well as illegal fishing and marine debris."

U.S. coral reef ecosystems, particularly those near populated areas, continue to face threats from human activities such as coastal development, pollution, fishing, sedimentation and recreational use, finds the report, "The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008."

"NOAA's coral program has made some significant progress since it was established 10 years ago, but we need to redouble our efforts to protect this critical resource," said NOAA Administrator Conrad Lautenbacher Jr.

More than 270 scientists and managers working in the Gulf of Mexico, the Caribbean, the Atlantic and and the Pacific authored the 15 chapters of the report - each focused on one jurisdiction. The scientists graded the coral ecosystems on a five tier scale - excellent, good, fair, poor and unknown.

The report details coral reef conditions in the U.S. Virgin Islands, Puerto Rico, Navassa Island, southeast Florida, the Florida Keys, Flower Garden Banks, the Main Hawaiian Islands, the Northwestern Hawaiian Islands, American Samoa, the Pacific Remote Islands, the Republic of the Marshall Islands, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam and the Republic of Palau.

The 2008 report is the third in a series tracking the condition of U.S. coral reef ecosystems at local and national scales. The reports show that the condition of U.S. coral reefs has been declining for decades. Since the last status report was released in 2005, two coral species - elkhorn and staghorn corals - have become the first corals ever listed as threatened under the U.S. Endangered Species Act.

"Coral reefs are extraordinary living ecosystems that draw visitors, support our economy and protect our beaches and homes from erosion and storm surge," said Florida Governor Charlie Crist told the conference participants. "Florida will continue to take steps, such as new legislation reducing nutrients and other pollutants in the ocean, that will protect these sensitive ecosystems for residents and visitors for generations to come."

Governor Crist held a bill signing ceremony for Senate Bill 1302, which will eliminate the use of ocean outfalls for wastewater disposal in southeast Florida by 2025.

An extensive, beautiful coral reef ecosystem stretches more than 100 miles along the southeast Florida coast, from Miami-Dade to Martin County. These reefs are part of the third longest reef system in the world and are one of the greatest natural resources in Florida and the United States.

The state of Florida, in partnership with NOAA, also manages the coral reefs in the Florida Keys National Marine Sanctuary.

"Florida is proud to help sponsor this internationally-recognized conference that brings together thousands of representatives from the marine science, resource management, conservation and policy-making communities," said Florida's Environment Secretary Michael Sole. "By collaborating with our partners on the best available current science, as well as future research, we can better protect our coral reef systems, and continue to preserve these vital habitats that provide shelter, food, breeding and nursery areas for a

rich and diverse assortment of marine life, including important recreational and commercial fisheries."

The world's oceans are acidifying far more rapidly than scientists expected, with serious implications for the future of corals, reef algae, shellfish and some ocean food chains, according to a keynote paper presented at the symposium by Australian earth scientist Malcolm McCulloch of the ARC Centre of Excellence for Coral Reef Studies and Australian National University.

Coral in the waters of Raiatea, the second largest of the islands of French Polynesia (Photo courtesy ARC Centre of Excellence for Coral Reef Studies)

The paper presents new coral evidence suggesting the oceans may have acidified by almost a third of a unit of pH as a result of human emissions of the greenhouse gas carbon dioxide.

"We've measured an increase of almost 0.3 of a pH unit in acidity in corals, which is much higher than has been detected so far in ocean water itself," Professor McCullough said.

"This suggests either that the corals are somehow amplifying the effect - or else that we may have gravely underestimated the rate at which the burning f fossil fuels is turning the oceans acidic," he said.

Acidic oceans may cause living creatures which depend on an alkaline environment to cease forming their shells and skeletons. This applies to about a third of sea life, said McCullough.

As the oceans become saturated with carbon dioxide, their ability to absorb carbon from the atmosphere is expected to decline, leaving more CO2 in the air to insulate the planet and accelerate the pace at which it warms.

McCullough presented evidence that coralline algae - the "cement" that binds together the fronts of coral reefs against the ocean's power - will be more seriously affected than even the coral itself, causing reefs to crumble away.

How serious the impact of ocean acidification will be on corals themselves is not yet clear, McCullough says. "We are unsure of the explanation for why the corals are showing these high levels of acidification - but we need to find out, and quickly."

The International Coral Reef Symposium convenes every four years, and this year it coincides with the International Year of the Reef, a worldwide campaign to raise

awareness about the value and importance of coral reefs and threats to their sustainability.

TIME IN PARTNERSHIP WITH CNN

Report: US Coral Reefs in Big Decline

By AP/Brian Skoloff

July 7, 2008

A school of fish pass over a coral reef at Hanauma Bay, Hawaii. Donald Miralle / Getty

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Coral reefs concentrate attention at symposium

Reported by: Jay Cashmere

Photographer: Gary Russ

If there was ever a convention that brought the world closer to the study of coral reefs, it is the 2008 International Coral Reef Symposium.

Blue Chromis on Coral Reef (PBCRR)

"This is the largest meeting for coral reef scientists in the world," says Richard Dodge of the National Coral Reef Institute.

The week long conference at the Broward County Convention Center brings together the "who's who" in the coral reef industry. It's been dubbed the olympics of coral reefs. 2,500 hundred are expected to visit 50 exhibits, take field trip and learn more on this precious resource.

"There are so many people here and all of them are focused on the same goals: understanding our coral reefs, why are they declining, how can we protect them, how can we manage them more effectively," says Joshua Voss of Harbor Branch Oceanographic Institute at FAU.

150 countries are represented from policy makers to conservationists. Florida Governor Charlie Christ stopped by to ink a new bill protecting reefs off Florida.

"Cleaning up and making sure we protect our reefs, making sure we don't have sewerage going into the Atlantic, that's exactly the right thing to do," says Crist.

Crist signed off on Senate Bill 1302 which will eliminate ocean outfall sewerage disposal in Southeast Florida coastal waters. Instead better treatment and re-use standards will now begin.

"It's historic, it's a key piece of legislation," says Ed Tichenor.

Tichenor, of Palm Beach County Reef Rescue, was among those on hand to watch Crist sign into law the Leah Shad Memorial Ocean Outfall Program . Tichenor joined thousands over the past several years study and fight the outfalls from Delray to Miami.

The bill now requires wastewater facilities to develop a detailed plan by 2013 to decrease the nutrients pollutants discharged through the pipes. It eliminates the use of all outfall pipes by 2025 and prohibits any new ones.

The study of coral reef got a boost at the symposium Monday morning when Congressman Ron Klein presented a federal check in the amount of $1,100,000 to go toward coral reef research. The research and findings have been crucial with especially in a recent NOAA report showing the state of coral reefs across the world.

"It's variable but in many areas there is some decline, fortunately in Southeast Florida it's stabilized," says Dodge.

From bleaching to disease, certain reefs are constantly in a state of crisis which is why constant monitoring is a must and all eyes are making sure of that right here in South Florida this week.

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NOAA report: US coral reefs in severe decline

Associated Press

July 7, 2008

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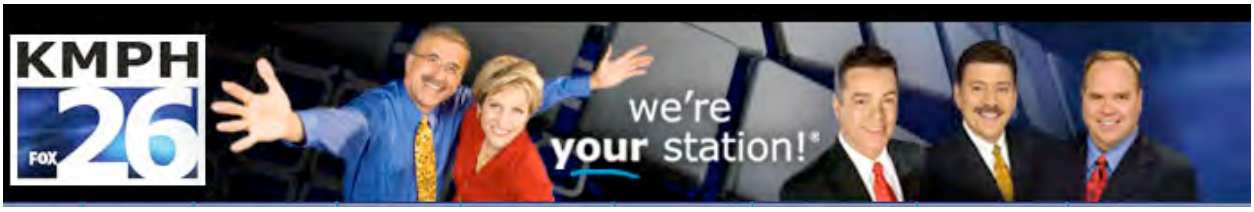

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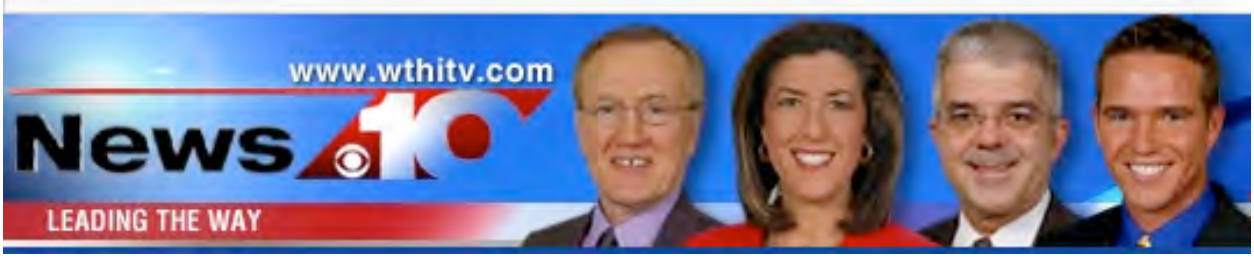

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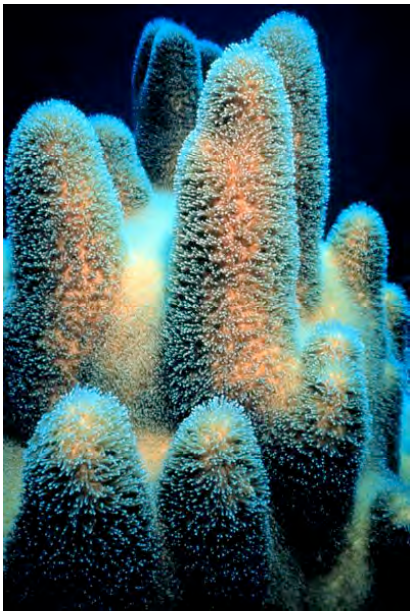
Mother Jones
SMART, FEARLESS JOURNALISM



America's Coral Reefs Declining

By Julia Whitty

July 7, 2008

Not good news. NOAA reports that half of US coral reef ecosystems are in poor or fair shape. This includes reefs in the US Virgin Islands, Puerto Rico, Navassa Island, Florida, Flower Garden Banks, the Hawaiian Islands, American Samoa, the Pacific Remote Islands, the Marshall Islands, Micronesia, the Northern Mariana Islands, Guam and Palau.

The nation's coral reefs face intense threats from development, overfishing, run-off from the land, and recreational use. Even the most remote reefs suffer from marine debris, illegal fishing, and climate change problems, including coral bleaching, coral diseases, and ocean acidification.

More than 270 researchers authored the 15 chapters of the 569-page report, grading the ecosystems' health as excellent, good, fair, poor or unknown. They note that US reefs have been declining for decades. Since the last status report in 2005, two coral species, Elkhorn and Staghorn, have become the first corals ever listed as threatened under the Endangered Species Act.

One thing's for sure, we're going to leave behind tons of documents detailing exactly how the the world got frakked while we awaited the anti-Bush.

Julia Whitty is Mother Jones' environmental correspondent, lecturer, and 2008 winner of the Kiriyama Prize and the John Burroughs Medal Award.

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The Tech Herald

Report sounds warning on U.S. and Pacific coral reefs

by Rich Bowden

July 7, 2008

Image: Coral reef, Belize. Credit: mikebaird/flickr

A study by the U.S. National Oceanic and Atmospheric Administration (NOAA) has said half of all coral reefs in United States' territory are in either "poor" or "fair" condition.

The report entitled, "The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008" says the region's coral reefs face environmental pressure from "coastal development, fishing, sedimentation and recreational use" and warns that even remote reefs are suffering from the combined effects of "marine debris, illegal fishing and climate-related effects of coral bleaching, disease and ocean acidification."

The report says that half of all reefs from the Caribbean to the Pacific, "are not in good condition and are continuing steadily on a long-term decline."

"It's a pretty alarming situation," said Jeannette Waddell, the report's co-editor and a marine biologist with the National Oceanic and Atmospheric Administration's National Ocean Service. "Coral reefs around the world are confronted by the same types of threats. In some places it is worse. In some places, it's slightly better. But we're finding that even remote reefs are showing signs of decline," she told ABC News.

Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force, said while the report was limited to

the region of the United States and its associated states, clearly the problem for coral reefs was a global one.

"While the report indicates reefs in general are healthier in the Pacific than the Atlantic, even remote reefs are subject to threats stemming from climate change, as well as illegal fishing and marine debris," he said.

The 2008 NOAA report is the third in a series of studies designed to track the health of coral reef ecosystems at a local and national level. All three reports can be downloaded free here.

Madison, WI
WKOWTV.COM Making A Difference

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Montana's News Station .com

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CLIMATE CHANGE: CHANGING OUR WORLD

Global Warming Chief Among Threats to Coral Reefs

Posted by Nick Robson

July 7, 2008

FORT LAUDERDALE, Florida, July 7, 2008 (ENS) - Nearly half of U.S. coral reef ecosystems are considered to be in "poor" or "fair" condition according to a new analysis of the health of coral reefs under U.S. jurisdiction by the National Oceanic and Atmospheric Administration, NOAA.

The report was released by NOAA today at the opening of the 11th International Coral Reef Symposium in Fort Lauderdale where more than 2,500 scientists and government officials are gathered this week to discuss coral reef protection strategies and research priorities to further protection of sensitive coral ecosystems.

The symposium's theme, Reefs for the Future, highlights the importance of the world's coral reefs, as well as the urgent need for accelerated action to protect them.

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July 7, 2008

(AP) FORT LAUDERDALE, Fla. - Almost half the coral reef ecosystems in United States territory are in poor or fair condition, mostly because of rising ocean temperatures, according to a government report released Monday.

The reefs discussed in the National Oceanic and Atmospheric Administration report serve as breeding grounds for many of the world's seafood species and act as indicators of overall ocean health.

"They are a major indicator of something that could go wrong with the environment," said Timothy Keeney, NOAA's deputy assistant secretary for oceans and atmosphere.

Keeney said 25 percent of all marine species need coral reefs to live and grow, while 40 percent of the fish caught commercially use reefs to breed.

"If we lose the reefs, you lose a very significant and important habitat," Keeney said.

Since NOAA's last report in 2005, the Caribbean region has lost at least 50 percent of its corals, largely because sea temperatures have risen, Keeney said.

Elkhorn and staghorn corals have also been listed as threatened under the Endangered Species Act, the first corals ever to receive such protections based on rapid declines.

The 569-page report took 18 months to complete with input from 270 federal, state and university scientists. It documented 15 ecosystems in U.S. states and territories, including the U.S. Virgin Islands, Puerto Rico, Florida, Hawaii, American Samoa and Guam. It was released at the 11th International Coral Reef Symposium in Fort Lauderdale.

The report's authors noted it was the first detailed NOAA study to go beyond anecdotal evidence and patchy science to provide conclusive data that the nation's coral reefs are in trouble.

"We can actually document these declines now," said Jenny Waddell, coeditor of the study and a NOAA marine biologist.

The report found that coral bleaching caused largely by rising sea temperatures is a major factor. Carbon dioxide released by burning fossil fuels is absorbed by the oceans, making the waters more acidic and corrosive on corals.

Land-based pollution, such as sewage, beach erosion, coastal development and overfishing also are to blame.

The study does not make recommendations, but simply serves as what its authors deem a "call to action" for state governments and Caribbean countries.

Keeney sees corals as "a sentinel species of the planet," and calls them "the rain forests of the sea." Beyond their importance as breeding grounds for fish, reefs could hold cures for diseases.

He said there are also positive signs that people are beginning to understand "the value of coral reefs to our economy."

Kenney argues the report adds another layer of scientific certainty that man-made climate change is stressing the nation's oceans and could ultimately have huge economic and social impacts if its effects are not reversed.

"There's no question that ... man-made actions are the major cause for these losses and stresses on the reefs," Keeney said.

Dave Allison, a senior campaign director for the advocacy group Oceana, said the entire world's coral reefs "border on disaster."

"All the world's coral reefs are being stressed by both short-term and long-term human impacts," Allison said. "We've known about the human impact on corals for decades. It's just that the combination of problems confronting the corals have never come together in such a perfect storm."

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NOAA report: http://www.noaanews.noaa.gov/stories2008/20080707_coral.html

Oceana: http://www.oceana.org/north-america/home/

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Coral too precious to wear

July 7, 2008

By Samantha Critchell

MIAMI, Florida (7 July 2008) — Sea coral is blessed with wonderful colors, an intricate design and memories of the lapping ocean. It's no wonder that the worlds of fashion and home décor are in the midst of a love affair with it.

Some argue, though, that coral is too precious to wear.

"We want to discourage consumers from purchasing coral," says scientist Andrew Baker. "It's like ivory. It's a product of a living animal, and the harvest of this item is unsustainable."

It's unsustainable not because new coral won't grow, he says, but because there are no limits on the use or sale of coral and it's being harvested at a rate that nature can't keep up with.

"Dredging deep-sea coral forests is like clear-cutting the rain forest for sparrows: You're doing so much damage for something so small," says Baker, who is also an assistant professor at the at the University of Miami and the Pew Institute for Ocean Science.

Baker and a team from the Too Precious to Wear campaign, helmed by the nonprofit group SeaWeb that also took on the caviar and restaurant seafood causes, is lobbying to add coral to the Convention of International Trade in Endangered Species. That global group has put limits on rhinoceros horns, tiger feet and ivory. Coral had made it to the last round of negotiations in 2007, according to Baker, but failed to make it to the final list.

A similar case will be presented this week to the International Coral Reef Symposium in Fort Lauderdale, Fla., which will be attended by more than 2,500 scientists, economists, conservationists and educators. The theme of the meeting is reefs for the future.

Baker doesn't want the world to wait. SeaWeb had noticed in the past couple of years that coral – real, faux and artistic interpretations – was all over the fashion runways and home-decorating magazines, explains Julia Robertson, program manager for Too Precious to Wear.

Around the same time, though, global warming, for which coral is considered a key indicator, had become a buzz topic, so marine-science groups saw an opportunity to raise public awareness, she says.

"We wanted to tap into the recognition of coral in fashion, design, jewelry and home décor. It's easier to talk to people when they know what you're talking about," Robertson says.

The campaign was launched earlier this year with partners including Pottery Barn, Tiffany & Co., Lela Rose, Vena Cava and Chantecaille Beaute.

Sylvie Chantecaille says her beauty company got involved about 18 months ago, largely because of her interest in the ocean.

"My whole family snorkels, dives. I grew up in the South of France diving, and I have seen a change in the ocean over the years," she explains. "When you spend so much time under the water, you realize how amazing it is. I wanted to do something to protect it."

So Chantecaille developed Protect the Paradise compacts – one with eye shadow, another with powder – embossed with miniature ocean scenes to raise money for marine research and conservation. The project put Chantecaille in touch with other coral fans, including Baker, who taught her to appreciate their beauty from afar.

"I love the look of coral. They're so beautiful," Chantecaille says. "I used to be completely in love with coral jewelry so I totally understand the appeal."

Coral jewelry is gaining in popularity among female consumers who remain ignorant or unconcerned about the many threats to coral reefs including unsustainable harvesting.

But, she adds, "It's going to become like ivory. I used to wear ivory, but I'd never wear it today now that I know what it means and what it symbolizes."

Tiffany stopped selling coral jewelry in 2003 and instead uses precious stones to replicate the exotic color and shapes found in the sea. The company brought the bulk of manufacturing in house, allowing it to examine sourcing, explains Linda Buckley, Tiffany vice president of public relations. While coral was not a huge part of the assortment, it set off some bells.

"Tiffany is closely associated with the natural world – it's where we get our inspiration and materials," Buckley says. She adds: "If you have healthy coral reefs, you have healthy oceans, healthy seabeds and healthy oysters – and we get our pearls from healthy oysters."

(Buckley notes that Tiffany has also examined their use of cultured pearls and decided it doesn't pose the same environmental risks as coral.)

"No one disputes coral as an object of beauty," says Baker, "but it is more important as a habitat."

Coral from shallow reefs, which are mostly a light color, tend to be used in interior décor, while the deep-sea corals – known as the "precious" black, pink and red corals from the Mediterranean Sea, Indian Ocean and the Pacific near Hawaii – are used for jewelry.

Yet, you only have to go to South Florida, where Baker is based, to find white coral being sold as a souvenir in kitschy shell shops, even though it was harvested thousands of miles away. This frustrates Baker, and he thinks it probably confuses tourists, who are getting a mixed message not to disrupt the reefs when scuba-diving but are allowed to buy chunks of dead coral.

"It's like going to a zoo," he says. "You learn about threatened tigers and then go to the zoo store and find a tiger pelt."

Fashion and décor surely aren't the main culprits in the destruction of the reefs, but artist Michael Aram makes the case to take them out of the equation entirely.

"One coral necklace doesn't necessarily mean the end of the world, but why, when you can still celebrate it in a form that's representational, still use it? It doesn't make sense," he says.

Aram favors casting coral sculptures in metal, then painting with enamel. Coral's natural unpredictable shape allows him a lot of flexibility, he says.

"My coral is evocative of the real thing but … you can be pretty wild with coral."

Coral alternatives

A sampling of coral-inspired items:

- Anika Brazil Swim bathing suits, to debut later this month, with glass coral-colored beads as ornamentation.
- Stetson coral-colored cowboy boots. "We love using it as a natural complement to the rich brown leathers you see so often in western boots," says Pam Fields,

CEO of Stetson. "For women, the warmth feminizes the collection and ties nicely into the coral and turquoise accessories that we see dominating the ladies area. For men, it is a way to wear a rich color that isn't pink."

- Coral-print sheets and resin-sculpted coral candleholders from Pottery Barn.
- Tiffany & Co. jewelry with a coral-branch motif. "We have a collection in sterling silver with a necklace, bracelet and charms and earrings in white gold," says Linda Buckley, Tiffany's vice president of public relations. "The few people who have asked about coral and why we don't sell it, once we explain the reason why, they are very supportive."
- Michael Aram's hand-hammered steel bowls with lacquered faux coral-branch bases.
- Torn by Ronny Kobo's coral-motif tank tops for shopbop.com.
- Creme de La Mer's World Ocean Day moisturizing cream. While technically not a coral product, it is based on a sea-kelp formula, and the company makes donations to a coral-saving campaign and says without healthy oceans – of which healthy coral reefs are key – there'd be no secret "miracle broth" ingredient.

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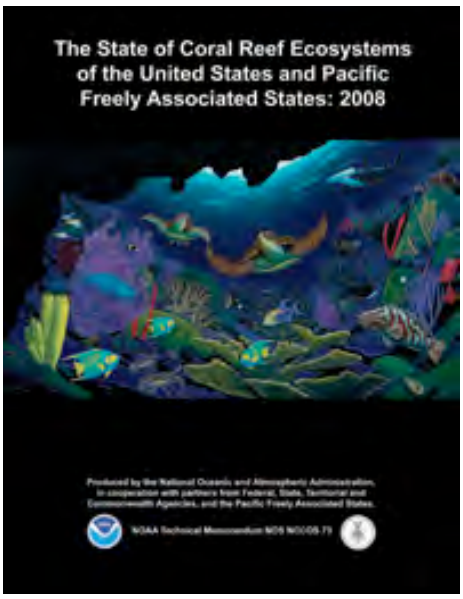
U.S. coral reefs in trouble

July 7, 2008

Nearly half of U.S. coral reefs are in "poor" or "fair" condition according to a new study by the National Oceanic and Atmospheric Administration (NOAA).

The report, The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008, says that coral reefs face an onslaught of threats from coastal development, fishing, sedimentation and recreational activities. Climate-related effects of coral bleaching, disease and ocean acidification also pose a risk to coral health.

"NOAA's coral program has made some significant progress since it was established 10 years ago, but we need to redouble our efforts to protect this critical resource," said NOAA administrator Conrad C. Lautenbacher Jr.



The report was released at the 11th International Coral Reef Symposium in Fort Lauderdale, Florida. It reviews the conditions of reefs in the U.S. Virgin Islands, Puerto Rico, Navassa Island, southeast Florida, the Florida Keys, Flower Garden Banks, the Main Hawaiian Islands, the Northwestern Hawaiian Islands, American Samoa, the Pacific Remote Islands, the Republic of the Marshall Islands, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam and the Republic of Palau.

"The report shows that this is a global issue," said Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force. "While the report indicates reefs in general are healthier in the Pacific than the Atlantic, even remote reefs are subject to threats stemming from climate change, as well as illegal fishing and marine debris."

The report notes that two species of coral — Elkhorn and Staghorn corals — have become the first corals ever listed as threatened under the Endangered Species Act. It also highlighted the importance of healthy coral reefs in protecting coastal areas from storm damage and the massive Indian Ocean tsunami of 2004.

Findings from the report:

- Approximately half of the coral reef ecosystem re-sources under U.S. or FAS jurisdiction are considered by scientists to be in 'poor' or 'fair' condition and have declined over time due to several natural and anthropogenic threats.
- Reef habitats adjacent to populated areas tend to experience more intense threat levels related to issues like coastal development and recreational use, but even remote reefs far from human settlements are imperiled by illegal fishing, marine debris, and climate-related impacts such as bleaching, disease and acidification.
- The majority of key resources in the Caribbean/Atlantic/Gulf of Mexico region were reported to be in poor or fair condition. Only 6 of the 24 responses (25%) reported conditions were good (4) or excellent (2).
- Of the six jurisdictions in the Caribbean/Atlantic/Gulf of Mexico region, the most remote jurisdiction, the Flower Garden Banks, had the fewest high threats (1), and all four key resources were reported to be in good or excellent condition.
- In the Pacific, the majority (69%) of key resources (for which condition was known) were reported to be in good (16) or excellent (8) condition.

The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008

Sun-Sentinel.com

South Florida's coral reefs troubled, but 'hanging in there'

By Robert Nolin & Rafael A. Olmeda | South Florida Sun-Sentinel

July 7, 2008

Boynton Beach's Biv Watson, the dive coordinator for the Palm Beach County Reef Research Team and a member of the Palm Beach Hammer Heads, counts fish on the Delray Ledges during the Great Annual Fish Count to identify and document fish diversity and population trends for REEF, the Reef Environmental Education Foundation. (Sun-Sentinel/Joe Amon / July 29, 2007)

When it comes to the health of South Florida's coral reefs, the prognosis is not as gloomy as it could be. But it's not that sunny, either.

Coral reefs stretching from the Keys to Martin County haven't deteriorated over the past five years, government scientists say. But that may be because damage inflicted over decades by storms, pollution, sewage and warmer temperatures has already been done.

"Coral generally has been hanging in there," said Ken Banks, natural resources specialist with the Broward County Environmental Protection and Growth Management Department. "I'm optimistic about some things and pessimistic about others."

The status of the reefs was outlined in a survey released Monday by the National Oceanic and Atmospheric Administration. The 569-page NOAA report, distributed at the International Coral Reef Symposium being held this week at the Broward County Convention Center in Fort Lauderdale, is the first reef analysis since 2005.

South Florida's reefs, like half of those under U.S. jurisdiction, are rated fair or poor. The other half are listed as excellent or good.

Off South Florida, the reefs' coral cover is rated fair, for example, while water quality is rated poor. The prevalence of coral disease is low, however, the survey said.

Threats to the reefs, which extend less than two miles offshore, include recreational fishing and damage from vessel groundings off Port Everglades. Low-grade threats are coral bleaching and climate change.

"We still have algae blooms that impact the reef in a bad way," Banks said. "The coral is dying off but we don't have a lot of coral here anyway."

Chantal Collier, coral reef program manager for the Florida Department of Environmental Protection, led the team that analyzed the reefs that stretch more than 100 miles along the South Florida coast. Development along that high-growth area, as well as beach renourishment and dredging, have altered sediment patterns that affect the health of the reefs.

"Coastal development is increasingly rapid," said Collier, who expressed hope that the survey would help get out the message that reef protection is important.

Gov. Charlie Crist, attending the opening day of the conference, echoed that message.

"Our reefs are one of our greatest natural resources," he said. "As a Floridian, I understand the fact that our economy is inextricably linked to our environment. Making sure we protect our environment only helps our economy."

According to the study, reef-based tourism accounts for $2.3 billion in revenue in South Florida. But overfishing threatens reefs by damaging habitat or upsetting the ecological balance between fish and reef.

"Evidence is warning us that many of our coral reef ecosystems are imperiled, and we as a community must act now," said Kacky Andrews, director of NOAA's Coral Reef Conservation Program.

Besides overfishing, factors that lead to reef decline are pollution, warmer seawater temperatures and untreated sewage.

Crist aimed to eliminate the last threat by signing into law Monday a bill that would ban all ocean-sewage dumping by 2025. The law also prohibits the construction of new outfall pipes or expansion of existing ones.

Recent damage to South Florida's reef system could have been worse, said Jenny Waddell, the study's lead editor. For example, reef injury from the hurricanes of 2004

and 2005 was offset by the natural churning that took place, allowing nutrients to feed the algae on coral and thus prevent widespread bleaching, which is harmful.

The report partly credits official policies for keeping matters from becoming more severe.

Staff Writer Jon Burstein contributed to this report.

Robert Nolin can be reached at rnolin@sun-sentinel.com or 954-356-4525.

DIVE IN
Get an underwater look at the some of the damage to South Florida's coral reefs at Sun-Sentinel.com/reefs

Report: Rising Temperatures Threaten Coral Reefs

Study Examines Reefs Around America, Pacific Islands, Caribbean

July 7, 2008

HONOLULU -- A government report warns that rising ocean temperatures have left nearly half of the country's coral reef ecosystems in poor to fair condition.

The reefs serve as the breeding grounds for many of the world's seafood species. Their condition is an indicator of the oceans' overall health.

The report by the National Oceanic and Atmospheric Administration was the topic of conversation at the International Coral Reef Symposium in Fort Lauderdale, Fla.

The report found that the main Hawaiian Islands suffer from the invasion of alien algae. Meanwhile, the Northern Hawaiian Islands face a similar problem as many areas around the world. They said the rise in sea level and marine debris threatens the coral ecosystems.

The document notes that the Caribbean region has lost at least 50 percent of its corals because of rising sea temperatures since the last report in 2005. It also says the elkhorn and staghorn corals are the first corals to be listed as threatened under the Endangered Species Act.

A coeditor of the study, Jenny Waddell, said this is the first time that declines in the ecosystem have been documented.

Los Angeles Times

Coral reefs on 'slippery slope to slime'

Kenneth R. Weiss

July 7, 2008

Federal scientists today opened the International Coral Reef Symposium in Fort Lauderdale, Fla., with dismal news: About half of the remaining coral reefs in U.S. waters are in poor or fair health.

The findings released by the National Oceanic and Atmospheric Administration were part of a comprehensive assessment of coral reefs in the Florida Keys, Hawaii and in U.S. waters around islands sprinkled throughout the Caribbean and the Pacific Ocean.

"The condition of our nation's corals have been declining for several decades and half of them are in poor or fair condition," said Jenny Waddell, who edited the 569-page health assessment written by 270 co-authors.

Corals around the world face multiple stresses that include overfishing of algae-eating fish that keep coral reefs clean; sewage and fertilizer runoff that turns the water a soupy green and shades corals from the sunlight they need or overgrows the reefs with suffocating mats of algae.

Other problems associated with global warming now contribute to the poor health. Warmer than usual seawater stresses corals to the point that they "bleach" bone white, expelling algae from their skeletons that give them their color. Some of these tiny animals recover but many fall victim to disease or otherwise die.

In addition, scientists at the meeting here have been focusing on oceans becoming more acidic as they absorb nearly half of the carbon dioxide released by smokestacks and tailpipes into the atmosphere. If the trends continue, it will make it difficult or

impossible for corals to extract the material from alkaline seawater that they need to build their shells.

Reefs in the Caribbean have been particularly hard hit since the last U.S. coral reef health assessment in 2005, Waddell said. A massive bleaching event killed about half of the corals at monitoring stations in Puerto Rico and the U.S. Virgin Islands, she said. At some spots, 90% of the corals died.

The problem, said Kacky Andrews, program manager of the federal Coral Reef Conservation Program, is that so many of these stresses are hitting reefs all at once.

"There is no quick fix," Andrews said.

She characterized the health report card as a call to action for governments, businesses and citizens to do their part to save reefs that provide an important protection against storms and a habitat for tropical fish, as well as providing food and recreation. She noted that a global campaign to raise awareness, the International Year of the Coral Reef, lists recommendations on what needs to be done.

Without broad-based action, Andrews said, the future looks grim. To give a sense of how grim, she quoted Jeremy Jackson, an influential scientist at Scripps Institution of Oceanography who says that colorful coral reefs are quickly turning into slimy mats of algae and bacteria.

"Jeremy Jackson has coined the term, slippery slope to slime," Andrews said.

-- Kenneth R. Weiss, from Fort Lauderdale, Fla.

Photo: A hawkfish is shown among branching coral. Credit: Chuck Savall

OverTheLimit

Your Daily Dose Of Over The Top News

Coral Reefs Failing In US Coastal Areas

Miami, FL- The overall health of the coral reefs that are found along the coastline of the United States and locations throughout the Caribbean to the Pacific is at risk.

According to a new report issued by the NOAA governmental agency, the health of different coral reefs is on the decline.

The National Oceanic and Atmospheric National Ocean Service is the author of a new report that shows that reefs that are present along the coastline of the United States, as well as reefs elsewhere in the world are in danger.

The condition of reefs is in peril, and their long-term health appears to be at risk, according to the new report.

Coral Reefs are an element in the ecosystem of the world's oceans, and they are not only an element that provides needed tourism dollars, but they also are beneficial in a wide variety of ways.

There are literally cutting edge medicines that are being developed because of the science and benefits from coral reefs. These same reefs appear to be threatened from a variety of sources, and the overall outlook for many of the coral reefs in the world appears grim.

Human pollution, climate change, as well as a number of other sources appear to be the main culprits in the decline of overall reef health.

The report was issued by the United States NOAA group, and examined reefs throughout the world, focusing on the health of reefs in United States protected waters.

Life in the Balance: Coral Reefs Are Declining

Government Report Says Pollution and Climate Changes Threaten Coral Reefs

By CLAYTON SANDELL

July 7, 2008

A gov't report estimates that nearly half of the coral reefs in areas from the Caribbean to the Pacific are threatened by climate change, pollution and tropical storms.
(Getty Images)

Coral reefs — a key element in ocean ecosystems that provide not only coastline protection but billions of dollars in benefits from tourism, as well as ingredients used in cutting-edge medicines — are increasingly threatened from the effects of global warming and other hazards, according to a new U.S. government report.

The report estimates that nearly half of the coral reefs in areas from the Caribbean to the Pacific "are not in good condition and are continuing steadily on a long-term decline."

"It's a pretty alarming situation," said Jeannette Waddell, the report's co-editor and a marine biologist with the National Oceanic and Atmospheric Administration's National Ocean Service. "Coral reefs around the world are confronted by the same types of threats. In some places it is worse. In some places, it's slightly better. But we're finding that even remote reefs are showing signs of decline," she told ABC News. The NOAA report looked at the health of coral reefs in 15 areas under the jurisdiction of the United States and a group of countries called the Pacific Freely Associated States, which include Palau, the Marshall Islands and Micronesia.

A major threat facing corals is climate change, the report says, which affects coral reefs in multiple ways.

First, warmer ocean temperatures cause corals to expel the colorful living algae in their tissues, leaving them with a "bleached" white look.

"It really stresses out the coral and makes them more susceptible to things like disease," Waddell said.

A major bleaching and disease event in 2005 devastated coral reefs across the Caribbean. In the U.S. Virgin Islands and Puerto Rico, scientists say an average of 50 percent of the coral was lost. Some areas lost 90 percent of their coral.

Another problem for corals is that human-induced climate change is altering the chemistry of the oceans, making them more acidic. It happens as fossil fuels are burned, releasing carbon dioxide into the atmosphere. Much of that carbon dioxide is absorbed by the ocean, which becomes more corrosive.

"If the ocean continues to acidify, it's possible that it would preclude corals from growing, because they won't be able to draw the nutrients and elements out of the water that they need to create the structures that they produce as coral colonies," Waddell said. "It's also possible that ocean acidification may become so extreme that it may begin to dissolve the corals that already exist, which would spell disaster for costal communities."

A 1997 report in the science journal Nature estimated that the resources and economic benefits derived from coral reefs are worth $375 billion a year.

"Coral reefs only cover about one percent of the world's surface, but they are a very diverse and important environment or ecosystem," said Mark Monaco, a marine biologist with NOAA's National Centers for Coastal Ocean Science.

"They provide us fisheries, they provide us culture from the cultural resources, they provide us pharmaceuticals, and they provide us protection from storm events," he told ABC News.

In areas that have been hit by severe tsunamis, experts point out that damage is usually less severe in places with intact coral reefs just offshore.

Scientists who study the medical benefits of coral reefs say there are about 20 compounds in clinical trials derived from the corals themselves or the many organisms that depend on them.

"That biodiversity is holding the key to treatment of diseases current and future," said William Gerwick, a professor of oceanography and pharmaceutical sciences who holds a dual appointment at the Scripps Institute of Oceanography and the University of California San Diego Skaggs School of Pharmacy and Pharmaceutical Sciences.

"As we disturb that biodiversity, and reduce the species' richness, we change that equation dramatically," said Gerwick, who was not involved in the NOAA report.

Gerwick points to a drug compound derived from a species of sea squirt small, colorful organisms that live on coral reefs that has been approved by the European Union for treating soft tissue cancers. The drug, marketed under the name Yondelis in Europe, is in clinical trials in the United States.

Some corals have recently gotten better protections from the federal government. In 2006, two coral species were designated as "threatened" under the Endangered Species Act.

Climate change isn't the only threat to coral reefs. Tropical storms, coastal pollution, even boats and their anchors are serious concerns.

"The declining conditions that we're seeing is exacerbated by having a number of threats work together to cause the decline," Waddell said.

The report the work of 270 contributors is being presented today at the International Coral Reef Symposium in Fort Lauderdale, Fla.

"I think if we don't change the way we're going with these reef ecosystems we can't expect them to get better," Monaco said. "So we're going to have to make some hard choices society-wise, political-wise, economic-wise to protect these ecosystems.

Reefs could be gone in 50 years: Experts

July 8, 2008

New research presented at the International Coral Reef Symposium underway in Florida suggests climate change could kill off many of the world's reefs within 50 years.

In a series of presentations on the first day of the five-day meeting, scientists from Australia and the United States rejected previous reports that coral reefs might adapt to the amount of carbon dioxide being absorbed by the world's oceans. They say CO2 levels are rapidly approaching a critical limit, beyond which reef systems simply won't survive.

Presenter: Corinne Podger
Speakers:Professor Ove Hoegh-Guldberg, Director of the Centre for Marine Studies at the University of Queensland; Mark Eakin, of Coral Reef Watch

PODGER: For decades, the idea that oceans might absorb some of the carbon dioxide associated with greenhouse gas emissions was seen as a bonus. But two years ago, it emerged the extra CO2 was making the world's oceans more acidic - and causing corals to crumble and deteriorate. Now, an Australian scientist believes he's identified the point of no return. Professor Ove Hoegh-Guldberg is the director of the Centre for Marine Studies at the University of Queensland. He says 500 parts per million will reached within half a century - and when that happens, most reefs will die.

HOEGH-GULDBERG: The rise of carbon dioxide in the atmosphere has two consequences for coral reefs. The first is, through its effect on the global temperature, causing essentially thermal stress, and this manifests itself through mass bleaching events. The second problem is that CO2 going into the atmsophere also goes into the ocean in increasing amounts, and that's causing an acidificaiton of the oceans above coral reefs, and the effect of that is that it drops the concentration of something called carbonate. Now, that happens to be the crucial molecular building block for the limestone skeletons that corals put down.

PODGER: At the same time as changing ocean chemistry, greenhouse gases are warming the oceans up - causing mass bleaching in the Indo-Pacific in 1998, and the Caribbean two years ago. While reefs can recover to some extent, these events are

becoming more frequent, giving reefs little chance of fighting back, according to Mark Eakin, of Coral Reef Watch in the US:

EAKIN: These events - 1998 in the Pacific, 2005 in the Caribbean - are severe events that caused the bleaching of a lot of corals and more importantly the death of a lot of corals. When the temperatures get too high, the relationship between the plant and animal breaks down and the corals expel the algae that live in their tissues. That results in the coral starting to starve to death, and if it's a short event, they can survive this, they can recover the algae. But if the temperature stays warm for too long, then the corals are going to starve to death, there'll be other problems, the corals are going to die.

PODGER: Professor Ove Hoegh-Guldberg says there is evidence that coral reefs can adapt significantly to these symptoms of climate change - but says that adaptation isn't keeping up with the rapid shifts in ocean acidity:

HOEGH-GULDBERG: The rate of change that we're seeing over the past 100 years and what we're planning to inflict on the earth is about 100 to 1,000 times faster than the Ice Age transitions that transformed Europe and its biology - just as an example, it transformed the entire planet at that period. There is a problem. Evolution takes time, and what we are seeing is a mismatch between the rate at which evolution can adapt to change, and the rate of change. So over the past 10 years, there's been an increased effort to try and understand this - and I think what what we're seeing, and this conference is the last part of that discussion - is that the evidence is suggesting that they can't keep up and we're seeing an increased rate of coral degradation as a result.

PODGER: Professor Hoegh-Guldberg says efforts to preserve coral reefs have been undermined by a lack of consensus on how much damage climate change is causing, and says that's another key challenge for the Symposium in Florida.

HOEGH-GULDBERG: I think it's very important that the scientific community puts out consensus statements. Now the best of these is the IPCC - the Intergovernmental Panel on Climate Change - so they've really come out with clear statements. Often we see a sole voice that comes out and says 'I don't believe', and the media will pick that up and that will have as much coverage as perhaps the consensus of thousands of scientists. So in this area here, we've been seeing headlines saying coral reefs can adapt but they've been based on almost no science. And I think the plea that I have for the next three days is that we try to digest the latest science and come up with those clear statements about where things lie.

PODGER: If the message is given clearly enough, Professor Hoegh-Guldberg hopes governments will take more action on reducing the greenhouse gas emissions that are killing even well best-managed systems like the Great Barrier Reef off by 2-percent a year.

HOEGH-GULDBERG: We can't take 375,000 square kilometres of the Great Barrier Reef and dust it with chemicals to somehow fix the acidity problem or somehow cool the water. We've got to deal with the root cause of the problem, and that is emissions of CO2. Now, there is pain with this, but at the end of the day there's going to be less pain for people if we deal with it now as opposed to not put the effort into controlling emissions and have really quite disastrous futures.

Biology News Net

NOAA report states half of US coral reefs in 'poor' or 'fair' condition

July 8, 2008

Fort Lauderdale, Fla.— Nearly half of U.S. coral reef ecosystems are considered to be in "poor" or "fair" condition according to a new NOAA analysis of the health of coral reefs under U.S. jurisdiction.

The report issued today, The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008, says that the nation's coral reef ecosystems, particularly those adjacent to populated areas, continue to face intense human-derived threats from coastal development, fishing, sedimentation and recreational use. Even the most remote reefs are subject to threats such as marine debris, illegal fishing and climate-related effects of coral bleaching, disease and ocean acidification.

The report was released by NOAA at the 11th International Coral Reef Symposium in Fort Lauderdale, Fla. More than 270 scientist and managers working throughout the Gulf of Mexico, Caribbean, the Atlantic and Pacific authored the 15 jurisdiction-specific chapters of the report. The scientists graded the coral ecosystems on a five tier scale: excellent, good, fair, poor and unknown.

"NOAA's coral program has made some significant progress since it was established 10 years ago, but we need to redouble our efforts to protect this critical resource," said retired Navy Vice Admiral Conrad C. Lautenbacher Jr., Ph.D., under secretary of commerce for oceans and atmosphere and NOAA administrator.

The 569-page document details coral reef conditions in the U.S. Virgin Islands, Puerto Rico, Navassa Island, southeast Florida, the Florida Keys, Flower Garden Banks, the Main Hawaiian Islands, the Northwestern Hawaiian Islands, American Samoa, the Pacific Remote Islands, the Republic of the Marshall Islands, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam and the Republic of Palau.

"The report shows that this is a global issue," said Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force. "While the report indicates reefs in general are healthier in the Pacific than the Atlantic, even remote reefs are subject to threats stemming from climate change as well as illegal fishing and marine debris."

The conditions of U.S. coral reefs have been declining for several decades according to the report's authors. As an indicator of this decline, since the last status report was released in 2005, two coral species -- Elkhorn and Staghorn corals --- have become the first corals ever listed as threatened under the Endangered Species Act.

The 2008 report is the third in a series, representing an evolving effort to track the condition of coral reef ecosystems at both local and national scales. It was called for in the National Coral Reef Action Strategy (NCRAS) and was designed to address the primary threats, goals and objectives outlined in the NCRAS, the Coral Reef Conservation Act of 2000, and other guid¬ance documents. NOAA's Center for Coastal Monitoring and Assessment's Biogeography Branch led the development and production of the report with support from NOAA's Coral Reef Conserva¬tion Program.

Source : ben.sherman@noaa.gov

UPI.com
100 YEARS OF JOURNALISTIC EXCELLENCE

Half of U.S. coral reefs said at risk

July 8, 2008

WASHINGTON, July 8 (UPI) -- Scientists said nearly half of all coral reef ecosystems under U.S. jurisdiction are in poor or fair condition.

The National Oceanic and Atmospheric Administration said coral reefs are under threat from coastal development, fishing, sedimentation and recreational use.

"Even the most remote reefs are subject to threats such as marine debris, illegal fishing and climate-related effects of coral bleaching, disease and ocean acidification," NOAA said Monday in a release.

A 569-page document detailing coral reef conditions was released by the NOAA at the 11th International Coral Reef Symposium in Fort Lauderdale, Fla.

Tim Keeney -- deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force -- said coral reefs are healthier in the Pacific Ocean than the Atlantic Ocean.

INQUIRER.net

US coral reefs in severe decline -- report

Agence France-Presse

July 8, 2008

FORT LAUDERDALE, Florida -- Almost half the coral reef ecosystems in United States territory are in poor or fair condition, mostly because of rising ocean temperatures, according to a government report released Monday.

The reefs discussed in the National Oceanic and Atmospheric Administration report serve as breeding grounds for many of the world's seafood species and act as indicators of overall ocean health.

"They are a major indicator of something that could go wrong with the environment," said Timothy Keeney, NOAA's deputy assistant secretary for oceans and atmosphere.

Keeney said 25 percent of all marine species need coral reefs to live and grow, while 40 percent of the fish caught commercially use reefs to breed.

"If we lose the reefs, you lose a very significant and important habitat," Keeney said.

Since NOAA's last report in 2005, the Caribbean region has lost at least 50 percent of its corals, largely because sea temperatures have risen, Keeney said.

Elkhorn and staghorn corals have also been listed as threatened under the Endangered Species Act, the first corals ever to receive such protections based on rapid declines.

The 569-page report took 18 months to complete with input from 270 federal, state and university scientists. It documented 15 ecosystems in US states and territories, including the U.S. Virgin Islands, Puerto Rico, Florida, Hawaii, American Samoa and Guam. It was released at the 11th International Coral Reef Symposium in Fort Lauderdale.

The report's authors noted it was the first detailed NOAA study to go beyond anecdotal evidence and patchy science to provide conclusive data that the nation's coral reefs are in trouble.

"We can actually document these declines now," said Jenny Waddell, coeditor of the study and a NOAA marine biologist.

The report found that coral bleaching caused largely by rising sea temperatures is a major factor. Carbon dioxide released by burning fossil fuels is absorbed by the oceans, making the waters more acidic and corrosive on corals.

Land-based pollution, such as sewage, beach erosion, coastal development and overfishing also are to blame.

The study does not make recommendations, but simply serves as what its authors deem a "call to action" for state governments and Caribbean countries.

Keeney sees corals as "a sentinel species of the planet," and calls them "the rain forests of the sea." Beyond their importance as breeding grounds for fish, reefs could hold cures for diseases.

He said there were also positive signs that people were beginning to understand "the value of coral reefs to our economy."

Kenney argues the report adds another layer of scientific certainty that man-made climate change is stressing the nation's oceans and could ultimately have huge economic and social impacts if its effects are not reversed.

"There's no question that ... man-made actions are the major cause for these losses and stresses on the reefs," Keeney said.

Dave Allison, a senior campaign director for the advocacy group Oceana, said the entire world's coral reefs "border on disaster."

"All the world's coral reefs are being stressed by both short-term and long-term human impacts," Allison said. "We've known about the human impact on corals for decades. It's just that the combination of problems confronting the corals have never come together in such a perfect storm."

thewest.com.au The West Australian

Australia leading way in ocean protection

July 8, 2008

Australia's management of the World Heritage-listed Great Barrier Reef has been recognised as a model for the way the world's oceans should be handled.

A report by some of the world's leading coral reef researchers credits the Great Barrier Reef Marine Park Authority (GBRMPA) and its former chair Virginia Chadwick with groundbreaking moves to protect the reef.

Measures mentioned in the report include the 2004 extension of areas of the reef closed to fishing from four per cent to 33 per cent under the Great Barrier Reef Zoning Plan.

The report was unveiled today at the 11th International Coral Reef Symposium in Fort Lauderdale, Florida - attended by more than 2,000 coral scientists - and published in the prestigious Proceedings of the US National Academy of Science.

Current GBRMPA chair Russell Reichelt said he was “thrilled” the authority had been singled out as a world leader in coral reef management and that he would continue Ms Chadwick's good work.

Dr Reichelt said the zoning plan had increased the density of fish in some areas by up to five times the 2004 levels.

But it would have to be changed to suit marine environments in other countries.

“What works here might need to be significantly changed to operate in South-East Asia or Pacific Island countries because underlying institutional arrangements and cultural arrangements are different,” Dr Reichelt told AAP.

“If there were lessons in it for other countries, it would be to look at some of the principles but expect it to operate differently in different places.”

Dr Reichelt said climate change and the acidification of the world's oceans was still the main threat to coral reefs but much could still be done on a smaller scale to help them survive.

“The resilience of the reef is enhanced by keeping large areas of the system functioning naturally and after the rezoning effort, my attention is now turned towards water quality.

“What I can do is try and make the system as healthy as possible to ensure it has the best chance of surviving what the climate change pressures throw at it.”

Conservation group WWF-Australia also welcomed the study but renewed its call for the boundaries of the Great Barrier Reef Marine Park to be expanded to include the Coral Sea.

“It's great to see the world's leading coral reef researchers recognise the reef has the best management in the business,” said Dr Gilly Llewellyn, head of WWF-Australia's oceans program.

“However, it exposes a stark contrast to the Coral Sea - Australia's second premiere coral reef site - which is virtually unprotected.”

She said the Coral Sea was one of the last marine ecosystems on earth where there were healthy populations of sharks, rare corals and other marine life and deserved to be protected from threats such as unsustainable fishing.

BRISBANE
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THE MONEY TIMES
It's all about Money, Honey!

Half of U.S. coral reefs said at risk

July 8, 2008

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A 569-page document detailing coral reef conditions was released by the NOAA at the 11th International Coral Reef Symposium in Fort Lauderdale, Fla.

Tim Keeney -- deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force -- said coral reefs are healthier in the Pacific Ocean than the Atlantic Ocean.

THE BARRE MONTPELIER TIMES ARGUS ESTABLISHED 1897

Coral reefs in severe decline, says NOAA

By Brian Skoloff, Associated Press

July 8, 2008

FORT LAUDERDALE, Fla. — Almost half the coral reef ecosystems in United States territory are in poor or fair condition, mostly because of rising ocean temperatures, according to a government report released Monday.

The reefs discussed in the National Oceanic and Atmospheric Administration report serve as breeding grounds for many of the world's seafood species and act as indicators of overall ocean health.

"They are a major indicator of something that could go wrong with the environment," said Timothy Keeney, NOAA's deputy assistant secretary for oceans and atmosphere.

Keeney said 25 percent of all marine species need coral reefs to live and grow, while 40 percent of the fish caught commercially use reefs to breed.

"If we lose the reefs, you lose a very significant and important habitat," Keeney said.

Since NOAA's last report in 2005, the Caribbean region has lost at least 50 percent of its corals, largely because sea temperatures have risen, Keeney said.

Elkhorn and staghorn corals have also been listed as threatened under the Endangered Species Act, the first corals ever to receive such protections based on rapid declines.

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"We can actually document these declines now," said Jenny Waddell, coeditor of the study and a NOAA marine biologist.

The report found that coral bleaching caused largely by rising sea temperatures is a major factor. Carbon dioxide released by burning fossil fuels is absorbed by the oceans, making the waters more acidic and corrosive on corals.

Land-based pollution, such as sewage, beach erosion, coastal development and overfishing also are to blame.

The study does not make recommendations, but simply serves as what its authors deem a "call to action" for state governments and Caribbean countries.

Keeney sees corals as "a sentinel species of the planet," and calls them "the rain forests of the sea." Beyond their importance as breeding grounds for fish, reefs could hold cures for diseases.

He said there are also positive signs that people are beginning to understand "the value of coral reefs to our economy."

Kenney argues the report adds another layer of scientific certainty that man-made climate change is stressing the nation's oceans and could ultimately have huge economic and social impacts if its effects are not reversed.

"There's no question that ... man-made actions are the major cause for these losses and stresses on the reefs," Keeney said.

Dave Allison, a senior campaign director for the advocacy group Oceana, said the entire world's coral reefs "border on disaster."

"All the world's coral reefs are being stressed by both short-term and long-term human impacts," Allison said. "We've known about the human impact on corals for decades. It's just that the combination of problems confronting the corals have never come together in such a perfect storm."

NOAA report: http://www.noaanews.noaa.gov/stories200-8/20080707—coral.html

Oceana: http://www.oceana.org/north-america/home/

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NOAA report: U.S. coral reefs in severe decline

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A Service of Foster's Daily Democrat

Sea lovers say coral is too precious to wear

By Samantha Critchell, AP Fashion Writer

July 8, 2008

NEW YORK (AP) _ Sea coral is blessed with wonderful colors, an intricate design and memories of the lapping ocean. It's no wonder that the worlds of fashion and home decor are in the midst of a love affair with it.

Some argue, though, that coral is too precious to wear.

"We want to discourage consumers from purchasing coral," says scientist Andrew Baker. "It's like ivory. It's a product of a living animal and the harvest of this item is unsustainable."

It's unsustainable not because new coral won't grow, he says, but because there are no limits on the use or sale of coral and it's being harvested at a rate that nature can't keep up with.

"Dredging deep-sea coral forests is like clear-cutting the rainforest for sparrows: You're doing so much damage for something so small," says Baker, who is also an assistant professor at the at the University of Miami and the Pew Institute for Ocean Science.

Baker and a team from the Too Precious to Wear campaign, helmed by the nonprofit group SeaWeb that also took on the caviar and restaurant seafood causes, is lobbying to add coral to the Convention of International Trade in Endangered Species, the global group that has put limits on rhinoceros horns, tiger feet and ivory. Coral had made it to the last round of negotiations in 2007, according to Baker, but failed to make it to the final list.

Next week, a similar case will be presented to the International Coral Reef Symposium, which will be attended by more than 2,500 scientists, economists, conservationists and educators. The theme of the meeting is reefs for the future.

Baker doesn't want the world to wait. SeaWeb had noticed in the past couple of years that coral — real, faux and artistic interpretations — was all over the fashion runways

and home-decorating magazines, explains Julia Robertson, program manager for Too Precious to Wear.

Around the same time, though, global warming, for which coral is considered a key indicator, had become a buzz topic, so marine-science groups saw an opportunity to raise public awareness, she says.

"We wanted to tap into the recognition of coral in fashion, design, jewelry and home decor. It's easier to talk to people when they know what you're talking about," Robertson says.

The campaign was launched earlier this year with partners including Pottery Barn, Tiffany & Co., Lela Rose, Vena Cava and Chantecaille Beaute.

Sylvie Chantecaille says her beauty company got involved about 18 months ago, largely because of her interest in the ocean.

"My whole family snorkels, dives. I grew up in the South of France diving and I have seen a change in the ocean over the years," she explains. "When you spend so much time under the water, you realize how amazing it is. I wanted to do something to protect it."

So Chantecaille developed Protect the Paradise compacts — one with eye shadow, another with powder — embossed with miniature ocean scenes to raise money for marine research and conservation. The project put Chantecaille in touch with other coral fans, including Baker, who taught her to appreciate their beauty from afar.

"I love the look of coral. They're so beautiful," Chantecaille says. "I used to be completely in love with coral jewelry so I totally understand the appeal."

But, she adds, "It's going to become like ivory. I used to wear ivory but I'd never wear it today now that I know what it means and what it symbolizes."

Tiffany stopped selling coral jewelry in 2003 and instead uses precious stones to replicate the exotic color and shapes found in the sea. The company brought the bulk of manufacturing in house, allowing it to examine sourcing, explains Linda Buckley, Tiffany vice president of public relations. While coral was not a huge part of the assortment, it set off some bells.

"Tiffany is closely associated with the natural world — it's where we get our inspiration and materials," Buckley says. She adds: "If you have healthy coral reefs, you have healthy oceans, healthy seabeds and healthy oysters — and we get our pearls from healthy oysters."

(Buckley notes that Tiffany has also examined their use of cultured pearls and decided it doesn't pose the same environmental risks as coral.)

"No one disputes coral as an object of beauty," says Baker, "but it is more important as a habitat."

Coral from shallow reefs, which are mostly a light color, tend to be used in interior decor, while the deep-sea corals — known as the "precious" black, pink and red corals from the Mediterranean Sea, Indian Ocean and the Pacific near Hawaii — are used for jewelry.

Yet, you only have to go to South Florida, where Baker is based, to find white coral being sold as a souvenir in kitschy shell shops, even though it was harvested thousands of miles away. This frustrates Baker and he thinks it probably confuses tourists, who are getting a mixed message not to disrupt the reefs when scuba-diving, but allowing them to buy chunks of dead coral.

"It's like going to a zoo," he says. "You learn about threatened tigers and then go to the zoo store and find a tiger pelt."

Fashion and decor surely aren't the main culprits in the destruction of the reefs, but artist Michael Aram makes the case to take them out of the equation entirely.

"One coral necklace doesn't necessarily mean the end of the world, but why, when you can still celebrate it in a form that's representational, still use it? It doesn't make sense," he says.

Aram favors casting coral sculptures in metal, then painting with enamel. Coral's natural unpredictable shape allows him a lot of flexibility, he says.

"My coral is evocative of the real thing but mine can be a fantasian coral — you can be pretty wild with coral."

SFGate
home of the
San Francisco Chronicle

Health of U.S. coral reefs drops

Report blames fossil fuels, pollution as main culprits

Brian Skoloff, Associated Press

July 8, 2008

(07-08) 04:00 PDT Fort Lauderdale, Fla. -- Almost half of the coral reef ecosystems in United States territory are in poor or fair condition, mostly because of rising ocean temperatures, according to a government report released Monday.

The reefs discussed in the National Oceanic and Atmospheric Administration report serve as breeding grounds for many of the world's seafood species and act as indicators of overall ocean health.

"They are a major indicator of something that could go wrong with the environment," said Timothy Keeney, NOAA's deputy assistant secretary for oceans and atmosphere.

Keeney said 25 percent of all marine species need coral reefs to live and grow, while 40 percent of the fish caught commercially use reefs to breed. "If we lose the reefs, you lose a very significant and important habitat," Keeney said.

Since NOAA's last report in 2005, the Caribbean region has lost at least 50 percent of its corals, largely because sea temperatures have risen, Keeney said.

Elkhorn and staghorn corals have also been listed as threatened under the Endangered Species Act, the first corals ever to receive such protections based on rapid declines.

The 569-page report took 18 months to complete with input from 270 federal, state and university scientists. It documented 15 ecosystems in U.S. states and territories, including the U.S. Virgin Islands, Puerto Rico, Florida, Hawaii, American Samoa and Guam. It was released at the 11th International Coral Reef Symposium in Fort Lauderdale.

The report's authors noted it was the first detailed NOAA study to go beyond anecdotal evidence and patchy science to provide conclusive data that the nation's coral reefs are in trouble.

The report found that coral bleaching caused largely by rising sea temperatures is a major factor. Carbon dioxide released by burning fossil fuels is absorbed by the oceans, making the waters more acidic and corrosive on corals. Land-based pollution, such as sewage, beach erosion, coastal development and overfishing also are to blame.

The study does not make recommendations, but simply serves as what its authors deem a "call to action" for state governments and Caribbean countries.

Keeney sees corals as "a sentinel species of the planet," and calls them "the rain forests of the sea." Beyond their importance as breeding grounds for fish, reefs could hold cures for diseases.

Kenney says the report adds another layer of scientific certainty that man-made climate change is stressing the nation's oceans and could ultimately have huge economic and social impacts if its effects are not reversed.

U.S. coral reefs in severe decline

Associated Press

Jul. 8, 2008

Half the coral-reef ecosystems in U.S. territory are in poor or fair condition, mostly because of rising ocean temperatures, according to a federal report released Monday.

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redOrbit

Half of U.S. Coral Reefs Said at Risk

July 8, 2008

Scientists said nearly half of all coral reef ecosystems under U.S. jurisdiction are in poor or fair condition.

The National Oceanic and Atmospheric Administration said coral reefs are under threat from coastal development, fishing, sedimentation and recreational use.

Even the most remote reefs are subject to threats such as marine debris, illegal fishing and climate-related effects of coral bleaching, disease and ocean acidification, NOAA said Monday in a release.

A 569-page document detailing coral reef conditions was released by the NOAA at the 11th International Coral Reef Symposium in Fort Lauderdale, Fla.

Tim Keeney -- deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force -- said coral reefs are healthier in the Pacific Ocean than the Atlantic Ocean.

Source: United Press International

HeraldTribune.com

U.S. coral reefs are in peril

Report says warmer ocean water is a key cause of the decline

By Brian Skoloff, The Associated Press

July 8, 2008

FORT LAUDERDALE - Almost half the coral reef ecosystems in United States territory are in poor or fair condition, mostly because of rising ocean temperatures, according to a government report released here Monday at the 11th International Coral Reef Symposium.

The reefs discussed in the National Oceanic and Atmospheric Administration report serve as breeding grounds for many of the world's seafood species and act as indicators of overall ocean health.

A large mound of symmetrical brain coral in St. Croix, Virgin Islands, is bleached because of record hot waters in fall 2005. Scientists say warming is an even bigger marine problem now.

"They are a major indicator of something that could go wrong with the environment," said Timothy Keeney, NOAA's deputy assistant secretary for oceans and atmosphere.

Keeney said 25 percent of all marine species need coral reefs to live and grow, while 40 percent of the fish caught commercially use reefs to breed.

"If we lose the reefs, you lose a very significant and important habitat," Keeney said.

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The report's authors noted it was the first detailed NOAA study to go beyond anecdotal evidence and patchy science to provide conclusive data that the nation's coral reefs are in trouble.

"We can actually document these declines now," said Jenny Waddell, co-editor of the study and a NOAA marine biologist.

The report found that coral bleaching caused largely by rising sea temperatures is a major factor. Carbon dioxide released by burning fossil fuels is absorbed by the oceans, making the waters more acidic and corrosive on corals.

Land-based pollution, such as sewage, beach erosion, coastal development and overfishing also are to blame.

The study does not make recommendations, but simply serves as what its authors deem a "call to action" for state governments and Caribbean countries.

Keeney sees corals as "a sentinel species of the planet," and calls them "the rain forests of the sea." Beyond their importance as breeding grounds for fish, reefs could hold cures for diseases.

He said there are also positive signs that people are beginning to understand "the value of coral reefs to our economy."

Keeney argues that the report adds another layer of scientific certainty that man-made climate change is stressing the nation's oceans and could ultimately have huge economic and social impacts if its effects are not reversed.

"There's no question that ... man-made actions are the major cause for these losses and stresses on the reefs," Keeney said.

Dave Allison, a senior campaign director for the advocacy group Oceana, said the entire world's coral reefs "border on disaster."

"All the world's coral reefs are being stressed by both short-term and long-term human impacts," Allison said. "We've known about the human impact on corals for decades. It's just that the combination of problems confronting the corals have never come together in such a perfect storm."

innovations report
Forum für Wissenschaft, Industrie und Wirtschaft

New governance thinking efficient cure for global coral crisis

nächste Meldung

July 8, 2008

A new and alternative management of Australia's Great Barrier Reef Marine Park has been hailed as a groundbreaking international model for better managing the oceans, in a leading US scientific publication.

In a study published July 7 in the prestigious Proceedings of the US National Academy of Science, Per Olsson and Carl Folke of the Stockholm Resilience Centre at Stockholm University and Terry Hughes of the ARC Centre of Excellence for Coral Reef Studies in Australia have identified the keys to successful marine ecosystem-based management.

Their findings were revealed today at the 11th International Coral Reef Symposium, in Fort Lauderdale, Florida, where the world's leading coral reef scientists and managers have gathered.

"The core issue is that the global 'coral crisis' is really a crisis of governance," says Prof. Terry Hughes. "Round the world, people are struggling with the difficulties of managing these sensitive coral ecosystems in the face of all the human and natural pressures they are subject to."

"Many people have tried to protect marine environments but as soon as some form of governance was put in place and everyone relaxed, it was overtaken by events – either human or natural", Hughes says.

According to co-writer Per Olsson, the critical realization in the case of the Great Barrier Reef was that its management had to be flexible and adaptive, based on continual scientific monitoring of what is going on.

"This flexibility was important in order to deal with change, and to navigate the transition to an improved system of governance. It enabled new interactions and ways of working together with the authorities. Such flexibility is fundamental for bureaucratic organizations", Dr. Olsson says.

The paper highlights the role of leadership and consensus-building, and credits the Great Barrier Reef Marine Park Authority and its Chair, Virginia Chadwick, with having sought and gained the support of the public, industry and governments at all levels for

putting the management of the world's largest coral reef system onto an ecological footing.

"Our study shows the importance of leadership and strategies for responding to signals of change before ecosystem collapse occurs", Dr. Olsson says.

A critical step in the process was to convince local communities that the reef was facing many threats, and to enlist public support for managing it more flexibly. This was accomplished through a major "Reef Under Pressure" community consultation campaign.

"Combined with the declines in populations of dugongs, turtles, sharks and other fish, polluted runoff from the land and global warming impacts, it became clear to everyone that the original management system was becoming less and less adequate as the pressures on the reef grew." Prof. Hughes says.

One of the most visible and controversial initiatives under the new regime was to extend the area closed to all forms of fishing from 6 to 33 per cent of the total reef area – creating the largest no-take zone in the world.

"The Barrier Reef example illustrates a shift in thinking to an integrated view of humans and nature, based on active stewardship of marine ecosystems for human well-being" Dr. Olsson says.

Backing all of this was the necessary legislation and regulatory powers and also having a sufficient flow of good science to inform the management process constantly. The study underscores the particular importance of integrating good science with good policy.

The report concludes that laws alone cannot bring about the changes necessary to protect the world's ocean ecosystems – good science and public participation, understanding and support are also vital.

"In contrast to the GBR case, marine zoning in some countries has been severely constrained because of poverty, inflexible institutions, lack of public support, difficulties developing acceptable legislation, and failures to achieve desired results even after zoning is established. These are the critical barriers that we must urgently address and overcome" Professor Hughes said.

"Understanding successes and failures in marine governance systems is a first step in improving their adaptive capacity to secure ecosystem services in the face of uncertainty and rapid change," Prof. Folke say

OrlandoSentinel.com

U.S. scientists fear for the nation's coral reefs, share data at Fort Lauderdale seminar

Ludmilla Lelis | Sentinel Staff Writer

July 8, 2008

FORT LAUDERDALE - Nearly half of the U.S. coral reefs are in poor or fair condition, federal officials announced Monday.

And in the Atlantic and Caribbean, the percentage of declining coral is even higher -- 75 percent.

That's the assessment by the National Oceanic and Atmospheric Administration, announced at a conference of more than 2,500 of the world's coral-reef scientists and managers. The new report provides an update from the last national analysis in 2002 and details conditions off the states and U.S. territories across the Caribbean, Gulf of Mexico, Atlantic and Pacific.

The culprits behind the decline are the same suspects troubling reefs around the world. Marine debris. Development. Illegal fishing. Storm damage. And oceans that are becoming warmer and more acidic, causing coral diseases or bleaching.

Florida corals, and other reefs in the Atlantic and Caribbean basins, suffer several problems at the same time, making them less resilient than coral reefs in the Pacific that grow back much faster, said Jenny Waddell, editor of the report, which includes more than 270 authors.

At the same time, the U.S. assessment team, and other scientists attending the International Coral Reef Symposium in Fort Lauderdale, were optimistic.

NOAA officials lauded recent changes that are helping Florida corals, including new legislation that will shut down six South Florida sewage outfalls into the ocean by 2018.

Gov. Charlie Crist made an appearance to sign that sewage-outfall bill into law. "Florida's coral reefs are the third largest in the word," Crist said. "Obviously we have a lot to protect and be proud of."

Scientists and government managers will spend much of the week discussing the latest techniques, sharing what they know on making corals resilient and restoring damaged corals.

Ludmilla Lelis can be reached at llelis@orlandosentinel.com or 386-253-0964.

Half of US coral reefs in 'poor' or 'fair' condition, says NOAA report

July 8, 2008

Washington, July 8 (ANI): Almost 50 percent of U.S. coral reef ecosystems are in 'poor' or 'fair' condition, according to the National Oceanic and Atmospheric Administration (NOAA) report.

The report has revealed that the nation's coral reef ecosystems, particularly those adjacent to populated areas, connue to face intense human-derived threats from coastal development, fishing, sedimentation and recreational use.

Even the most remote reefs are subject to threats such as marine debris, illegal fishing and climate-related effects of coral bleaching, disease and ocean acidification, according to the report.

"NOAA's coral program has made some significant progress since it was established 10 years ago, but we need to redouble our efforts to protect this critical resource," said retired Navy Vice Admiral Conrad C. Lautenbacher Jr., Ph.D., under secretary of commerce for oceans and atmosphere and NOAA administrator.

Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force, said: "The report shows that this is a global issue."

"While the report indicates reefs in general are healthier in the Pacific than the Atlantic, even remote reefs are subject to threats stemming from climate change as well as illegal fishing and marine debris," he added.

According to the report's authors, the conditions of U.S. coral reefs have been declining for several decades.

As an indicator of this decline, since the last status report was released in 2005, two coral species - Elkhorn and Staghorn corals - have become the first corals ever listed as threatened under the Endangered Species Act.

The 2008 report is the third in a series, representing an evolving effort to track the condition of coral reef ecosystems at both local and national scales.

The 569-page document details coral reef conditions in the U.S. Virgin Islands, Puerto Rico, Navassa Island, southeast Florida, the Florida Keys, Flower Garden Banks, the Main Hawaiian Islands, the Northwestern Hawaiian Islands, American Samoa, the Pacific Remote Islands, the Republic of the Marshall Islands, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam and the Republic of Palau.The report was released by NOAA at the 11th International Coral Reef Symposium in Fort Lauderdale, Fla. (ANI)

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Is coral too precious to wear?

Sea lovers say damage is too great

By Samantha Critchell

July 8, 2008

Sea coral is blessed with wonderful colours, an intricate design and memories of the lapping ocean. It's no wonder that the worlds of fashion and home decor are in the midst of a love affair with it.

Some argue, though, that coral is too precious to wear.

"We want to discourage consumers from purchasing coral," says scientist Andrew Baker. "It's like ivory. It's a product of a living animal and the harvest of this item is unsustainable."

It's unsustainable not because new coral won't grow, he says, but because there are no limits on the use or sale of coral and it's being harvested at a rate that nature can't keep up with.

"Dredging deep-sea coral forests is like clear-cutting the rainforest for sparrows: You're doing so much damage for something so small," says Baker, who is also an assistant professor at the University of Miami and the Pew Institute for Ocean Science.

Baker and a team from the Too Precious to Wear campaign, helmed by the non-profit group SeaWeb that also took on the caviar and restaurant seafood causes, is lobbying to add pink and red corals, also known as Corallium, to the Convention of International Trade in Endangered Species, the global group that has put limits on rhinoceros horns, tiger feet and ivory. The coral had made it to the last round of negotiations in 2007, according to Baker, but failed to make it to the final list.

Next week, the pressures corals are facing will be discussed at the International Coral Reef Symposium, which will be attended by more than 2,500 scientists, economists, conservationists and educators. The theme of the meeting is reefs for the future.

Baker doesn't want the world to wait. SeaWeb had noticed in the past couple of years that coral -real, faux and artistic interpretations -was all over the fashion runways and home-decorating magazines, explains Julia Robertson, program manager for Too Precious to Wear.

Around the same time, though, global warming, for which coral is considered a key indicator, had become a buzz topic, so marine-science groups saw an opportunity to raise public awareness, she says.

"We wanted to tap into the recognition of coral in fashion, design, jewelry and home decor. It's easier to talk to people when they know what you're talking about," Robertson says.

The campaign was launched earlier this year with partners including Pottery Barn, Tiffany & Co., Lela Rose, Vena Cava and Chantecaille Beaute.

Sylvie Chantecaille says her beauty company got involved about 18 months ago, largely because of her interest in the ocean.

"My whole family snorkels, dives. I grew up in the south of France diving and I have seen a change in the ocean over the years," she explains. "When you spend so much time under the water, you realize how amazing it is. I wanted to do something to protect it."

So Chantecaille developed Protect the Paradise compacts -one with eye shadow, another with powder - embossed with miniature ocean scenes to raise money for marine research and conservation. The project put Chantecaille in touch with other coral fans, including Baker, who taught her to appreciate their beauty from afar.

"I love the look of coral. They're so beautiful," Chantecaille says. "I used to be completely in love with coral jewelry, so I totally understand the appeal."

But, she adds, "It's going to become like ivory. I used to wear ivory, but I'd never wear it today now that I know what it means and what it symbolizes."

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"It's like going to a zoo," he says. "You learn about threatened tigers and then go to the zoo store and find a tiger pelt."

- - -

TAKING AN ALTERNATIVE ROUTE

By Samantha Critchell, The Associated Press

You can have your coral and save it too.

The marine conservation group SeaWeb's Too Precious To Wear campaign offers alternatives to coral to capture its beauty without harvesting any of the real thing.

"There has been a huge trend toward coral in the past five or six years," says artist Michael Aram, who sculpts faux coral household items out of enamel-painted metal. "I don't know how and when it all started, but it became an incredible trend. ... It has struck a chord."

A sampling of coral-inspired items:

-Anika Brazil Swim bathing suits, to debut later this month, with glass coral-coloured beads as ornamentation.

-Stetson coral-coloured cowboy boots. "We love using it as a natural complement to the rich brown leathers you see so often in western boots," says Pam Fields, CEO of

Stetson. "For women, the warmth feminizes the collection and ties nicely into the coral and turquoise accessories that we see dominating the ladies area. For men, it is a way to wear a rich colour that isn't `pink.'"

-Coral-print sheets and resin-sculpted coral candleholders from Pottery Barn.

-Tiffany & Co. jewelry with a coral-branch motif. "We have a collection in sterling silver with a necklace, bracelet and charms, and earrings in white gold," says Linda Buckley, Tiffany's vice-president of public relations. "The few people who have asked about coral and why we don't sell it. Once we explain the reason why, they are very supportive."

-Michael Aram's hand-hammered steel bowls with lacquered faux coral-branch bases.

-Torn by Ronny Kobo's coral-motif

tank tops for shopbop.com.

-Creme de La Mer's World Ocean Day moisturizing cream. While technically not a coral product, it is based on a sea-kelp formula, and the company donates to a coral-saving campaign and says without healthy oceans -of which healthy coral reefs are key -there'd be no secret "miracle broth" ingredient.

Star Bulletin

Vol. 13, Issue 190 - Tuesday, July 8, 2008

Hawaii reefs doing well but are still in hot water

Humans pose main trouble for isles' coral, report says

July 8, 2008

Star-Bulletin staff and news services

Despite bleak news of poor coral reef ecosystems in U.S. states and territories released in a federal report yesterday, coral reefs around the main Hawaiian islands are good, on average, and good to excellent in the Northwestern Hawaiian Islands.

Almost half the coral reef ecosystems in U.S. territory are in poor or fair condition, mostly because of rising ocean temperatures, according to the National Oceanic and Atmospheric Administration report.

The reefs discussed in the report serve as breeding grounds for many of the world's seafood species and act as indicators of overall ocean health.

"They are a major indicator of something that could go wrong with the environment," said Timothy Keeney, NOAA's deputy assistant secretary for oceans and atmosphere.

But Hawaii has not seen the kind of massive mortality caused by cells of hot water sitting for weeks over corals such as in the Caribbean, said Athline Clark, who helped prepare the report and is state superintendent for Papahanaumokuakea Marine National Monument in the Northwestern Hawaiian Islands.

The Northwestern Hawaiian Islands reefs are isolated and pristine, while those around the main Hawaiian islands are generally and on average in good condition, but are in fair or poor conditions in other areas, she said.

Waters off heavily populated areas, such as Oahu, commonly suffer more reef degradation than waters around some of the other islands, said Clark, who works for the state Department of Land and Natural Resources.

Clark cited isolated incidents of higher ocean temperatures in the northern part of the Northwestern Hawaiian Islands in 2002 and 2004, and the main Hawaiian islands in the 1990s, though not to the degree that they have occurred in the Caribbean.

While those can be attributed to global warming, most of the problems affecting Hawaii's reefs are more from human use and not major climatic shifts, Clark said, though he acknowledged that "at the end of the day, it's all about us."

Reefs around the main Hawaiian islands are subject to a number of impacts such as altering the shoreline, water pollution, alien species such as algae, losing critical nursery habitat, and high-pressure fishing including recreational fishing, Clark said.

The decline in near-shore reef fish around the main Hawaiian islands can be attributed to these types of human activity, not climate change, Clark said.

Also, "upland development where sediment comes down and smothers reefs" is a major concern, especially on Kauai, she said. Other problems came from the Ka Loko Dam breach and heavy rain that washes sediment onto the reefs and leaves them covered in mud and trees, she said.

"If we lose the reefs, you lose a very significant and important habitat," Keeney said.

Since NOAA's last report in 2005, the Caribbean region has lost at least 50 percent of its corals, largely because sea temperatures have risen, Keeney said.

The 569-page report took 18 months to complete with input from 270 federal, state and university scientists. It documented 15 ecosystems in U.S. states and territories, including the U.S. Virgin Islands, Puerto Rico, Florida, Hawaii, American Samoa and Guam. It was released at the 11th International Coral Reef Symposium in Fort Lauderdale, Fla.

"We can actually document these declines now," said Jenny Waddell, co-editor of the study and an NOAA marine biologist.

The report found that coral bleaching caused largely by rising sea temperatures is a major factor. Carbon dioxide released by burning fossil fuels is absorbed by the oceans, making the waters more acidic and corrosive on corals.

The study does not make recommendations, but simply serves as what its authors deem a "call to action" for state governments and Caribbean countries.

Keeney sees corals as "a sentinel species of the planet" and calls them "the rain forests of the sea." Beyond their importance as breeding grounds for fish, reefs could hold cures for diseases.

The Associated Press and Star-Bulletin reporter Leila Fujimori contributed to this report.

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NEWS YOU CAN USE!

Half of US coral reefs in "poor" or "fair" condition, says NOAA report

by Sahil Nagpal

July 8, 2008

Washington, July 8 : Almost 50 percent of U. S. coral reef ecosystems are in ‘poor’ or ‘fair’ condition, according to the National Oceanic and Atmospheric Administration (NOAA) report.

The report has revealed that the nation''s coral reef ecosystems, particularly those adjacent to populated areas, continue to face intense human-derived threats from coastal development, fishing, sedimentation and recreational use.

Even the most remote reefs are subject to threats such as marine debris, illegal fishing and climate-related effects of coral bleaching, disease and ocean acidification, according to the report.

"NOAA''s coral program has made some significant progress since it was established 10 years ago, but we need to redouble our efforts to protect this critical resource," said retired Navy Vice Admiral Conrad C. Lautenbacher Jr., Ph. D., under secretary of commerce for oceans and atmosphere and NOAA administrator.

Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force, said: "The report shows that this is a global issue.”

"While the report indicates reefs in general are healthier in the Pacific than the Atlantic, even remote reefs are subject to threats stemming from climate change as well as illegal fishing and marine debris," he added.

According to the report’s authors, the conditions of U. S. coral reefs have been declining for several decades.

As an indicator of this decline, since the last status report was released in 2005, two coral species - Elkhorn and Staghorn corals - have become the first corals ever listed as threatened under the Endangered Species Act.

The 2008 report is the third in a series, representing an evolving effort to track the condition of coral reef ecosystems at both local and national scales.

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The report was released by NOAA at the 11th International Coral Reef Symposium in Fort Lauderdale, Fla. (ANI)

TheLedger.com

Coral Reefs Are in Severe Decline, Study Reports

July 8, 2008

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Keeney said 25 percent of all marine species need coral reefs to live and grow, while 40 percent of the fish caught commercially use reefs to breed.

"If we lose the reefs, you lose a very significant and important habitat," Keeney said.

Since NOAA's last report in 2005, the Caribbean region has lost at least 50 percent of its corals, largely because sea temperatures have risen, Keeney said.

Elkhorn and staghorn corals have also been listed as threatened under the Endangered Species Act, the first corals ever to receive such protections based on rapid declines.

The 569-page report took 18 months to complete with input from 270 federal, state and university scientists. It documented 15 ecosystems in U.S. states and territories. It was released at the 11th International Coral Reef Symposium in Fort Lauderdale.

The report's authors said it was the first detailed NOAA study to go beyond anecdotal evidence and patchy science for conclusive data that the nation's coral reefs are in trouble.

Half of US coral reefs in 'poor' or 'fair' condition, says NOAA report

Written by ANI

July 8, 2008

Washington, July 8 (ANI): Almost 50 percent of U.S. coral reef ecosystems are in 'poor' or 'fair' condition, according to the National Oceanic and Atmospheric Administration (NOAA) report.

The report has revealed that the nation's coral reef ecosystems, particularly those adjacent to populated areas, continue to face intense human-derived threats from coastal development, fishing, sedimentation and recreational use.

Even the most remote reefs are subject to threats such as marine debris, illegal fishing and climate-related effects of coral bleaching, disease and ocean acidification, according to the report.

"NOAA's coral program has made some significant progress since it was established 10 years ago, but we need to redouble our efforts to protect this critical resource," said retired Navy Vice Admiral Conrad C. Lautenbacher Jr., Ph.D., under secretary of commerce for oceans and atmosphere and NOAA administrator.

Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force, said: "The report shows that this is a global issue."

"While the report indicates reefs in general are healthier in the Pacific than the Atlantic, even remote reefs are subject to threats stemming from climate change as well as illegal fishing and marine debris," he added.

According to the report's authors, the conditions of U.S. coral reefs have been declining for several decades.

As an indicator of this decline, since the last status report was released in 2005, two coral species - Elkhorn and Staghorn corals - have become the first corals ever listed as threatened under the Endangered Species Act.

The 2008 report is the third in a series, representing an evolving effort to track the condition of coral reef ecosystems at both local and national scales.

The 569-page document details coral reef conditions in the U.S. Virgin Islands, Puerto Rico, Navassa Island, southeast Florida, the Florida Keys, Flower Garden Banks, the Main Hawaiian Islands, the Northwestern Hawaiian Islands, American Samoa, the Pacific Remote Islands, the Republic of the Marshall Islands, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam and the Republic of Palau.

The report was released by NOAA at the 11th International Coral Reef Symposium in Fort Lauderdale, Fla. (ANI)

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Isle reefs still 'fair to good'

They're healthier than Atlantic ones but also face threats, report says

By Leanne Ta, Advertiser Staff Writer

July 8, 2008

Hawai'i's coral reefs face a growing list of pressures, but are still healthier than those in the Atlantic, according to a federal report issued yesterday.
Advertisement

Coral reefs surrounding the main Hawaiian Islands and the Northwest Hawaiian Islands are in fair to good condition, while nearly half of U.S. coral reef ecosystems are in poor to fair condition, says the study from the National Oceanic and Atmospheric Administration.

Still, recreational overuse, fishing, pollution and alien species threaten to harm Hawai'i's reefs, home to more than 7,000 species of marine plants and animals.

The study, "The State of Coral Reef Ecosystems of the U.S. and Pacific Freely Associated States: 2008," was released yesterday at the 11th International Coral Reef Symposium in Fort Lauderdale, Fla. More than 270 researchers contributed to the 569-page report, which categorized coral ecosystems into five levels: excellent, good, fair, poor and unknown.

"Overall, Hawai'i's reefs compare much better than reefs in Florida and the Caribbean," said NOAA's Alan Friedlander.

"Hawai'i is doing well, especially in the Northwest Hawaiian Islands where reefs are very well protected and very pristine," said Friedlander, who is one of the authors of the study.

The report comes during the International Year of the Reef, a global campaign to raise awareness about the value of preserving coral reefs. For Hawai'i, which has a marine tourism industry worth $800 million a year, healthy reefs are important ecologically and economically.

Hawai'i's isolation has meant that a high proportion of Hawai'i's marine species — about 25 percent — are found only in the Islands.

SHIPS, FERRY A THREAT

The 2008 report is the third in a series designed to assess the condition of 15 U.S. coral reef ecosystems in the Pacific, Atlantic, Caribbean and Gulf of Mexico.

While Hawai'i's reefs fared well compared with reefs in other parts of the country, Friedlander warned that residents should not be complacent.

"We need to be cautiously optimistic," he said. "We've lost a lot of reefs over the last several decades. There are still places that are in much better shape than Hawai'i, so there are important lessons to be learned."

Along with overfishing, pollution and climate change, Hawai'i's reefs also face threats associated with increased Neighbor Island visits from cruise ships and the Superferry, he said.

"Whenever you are exporting a large population from O'ahu to places where reefs are still very healthy, there is always a fear of reef degradation," he said.

MANAGEMENT NEEDED

To help preserve Hawai'i's coral reefs, Friedlander said, an integrated system of local management needs to be developed. "Each reef area is unique, so it needs to be managed at a community level," he said.

Action should be taken to preserve Hawai'i's reefs while they are still healthy, Friedlander added. "It's easier to conserve than to rehabilitate. If we waited five to 10 years, far more costly and dramatic measures will need to be taken," he said.

In the Caribbean and Atlantic regions, many coral reefs have been permanently damaged by rising sea temperatures, the study suggested. In Southeast Florida, pressures from growing urban populations and commercial activities have contributed to coral bleaching and increased coral disease. In recent years, overfishing and shipping have significantly damaged reefs in Puerto Rico.

While each region faces its particular problems, the report indicates that coastal development and rising sea temperatures caused by global warming are threats to all U.S. reefs.

Global warming may be difficult to stop, Friedlander said, but "we can make our reefs more resilient to climate change through local management."

"By starting at the community level and working together, we can take care of the larger issues," he said.

The Associated Press contributed to this report. Reach Leanne Ta at 535-2430 or lta@honoluluadvertiser.com.

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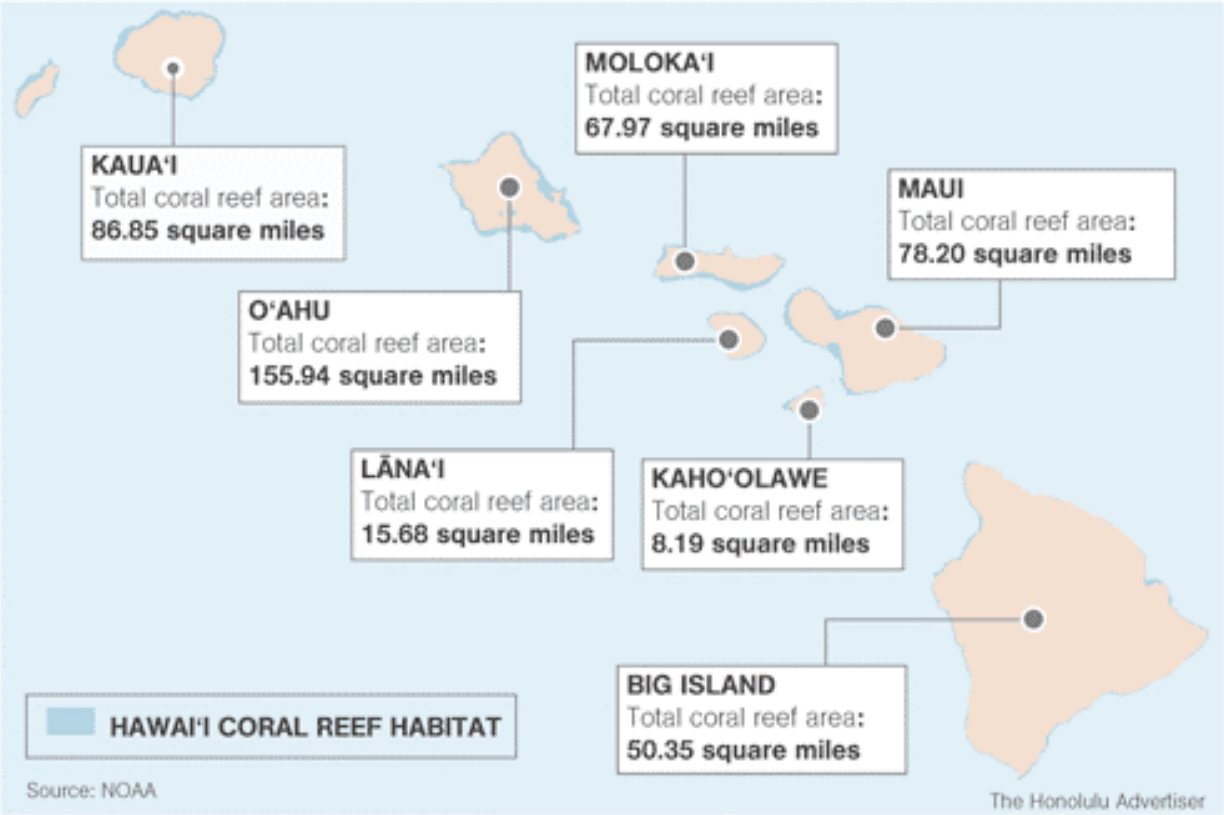

NEWSCENTER 11
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NOAA report: US coral reefs in severe decline

Associated Press

July 8, 2008

FORT LAUDERDALE, Fla. (AP) -- Almost half the coral reef ecosystems in United States territory are in poor or fair condition, mostly because of rising ocean temperatures, according to a government report released Monday.

The reefs discussed in the National Oceanic and Atmospheric Administration report serve as breeding grounds for many of the world's seafood species and act as indicators of overall ocean health.

"They are a major indicator of something that could go wrong with the environment," said Timothy Keeney, NOAA's deputy assistant secretary for oceans and atmosphere.

Keeney said 25 percent of all marine species need coral reefs to live and grow, while 40 percent of the fish caught commercially use reefs to breed.

"If we lose the reefs, you lose a very significant and important habitat," Keeney said.

Since NOAA's last report in 2005, the Caribbean region has lost at least 50 percent of its corals, largely because sea temperatures have risen, Keeney said.

Elkhorn and staghorn corals have also been listed as threatened under the Endangered Species Act, the first corals ever to receive such protections based on rapid declines.

The 569-page report took 18 months to complete with input from 270 federal, state and university scientists. It documented 15 ecosystems in U.S. states and territories, including the U.S. Virgin Islands, Puerto Rico, Florida, Hawaii, American Samoa and Guam. It was released at the 11th International Coral Reef Symposium in Fort Lauderdale.

The report's authors noted it was the first detailed NOAA study to go beyond anecdotal evidence and patchy science to provide conclusive data that the nation's coral reefs are in trouble.

"We can actually document these declines now," said Jenny Waddell, coeditor of the study and a NOAA marine biologist.

The report found that coral bleaching caused largely by rising sea temperatures is a major factor. Carbon dioxide released by burning fossil fuels is absorbed by the oceans, making the waters more acidic and corrosive on corals.

Land-based pollution, such as sewage, beach erosion, coastal development and overfishing also are to blame.

The study does not make recommendations, but simply serves as what its authors deem a "call to action" for state governments and Caribbean countries.

Keeney sees corals as "a sentinel species of the planet," and calls them "the rain forests of the sea." Beyond their importance as breeding grounds for fish, reefs could hold cures for diseases.

He said there are also positive signs that people are beginning to understand "the value of coral reefs to our economy."

Kenney argues the report adds another layer of scientific certainty that man-made climate change is stressing the nation's oceans and could ultimately have huge economic and social impacts if its effects are not reversed.

"There's no question that ... man-made actions are the major cause for these losses and stresses on the reefs," Keeney said.

Dave Allison, a senior campaign director for the advocacy group Oceana, said the entire world's coral reefs "border on disaster."

"All the world's coral reefs are being stressed by both short-term and long-term human impacts," Allison said. "We've known about the human impact on corals for decades. It's just that the combination of problems confronting the corals have never come together in such a perfect storm."

CORAL BONES

WILL TROPICAL CORAL REEFS BE THE FIRST ECOSYSTEM TO BE ELIMINATED BY CLIMATE CHANGE?

ICRS

Caspar Henderson

July 8, 2008

News and reports from the International Coral Reef Symposium here. Highlights for 7 July included:

> Presentation of a check [cheque] for US $1,100,000 (approx Euro 700,000, GBP 556,000) from the U.S. Federal government for coral reef research in the U.S.
>
> Launch of The Status of Coral Reef Ecosystems of the United States Report
>
> Forecasting Storm Mediated Changes in Reef Coral Assemblages (J. Madin, M. O'Donnell, S. Connolly)
>
> Is 500 ppm Co2 and 2 C of Warming the \221Tipping Point\222 for Coral Reefs? If So, How Should We Respond? (O. Hoegh-Guldberg)

Divemaster News

American Coral Reefs in Poor Condition

July 8, 2008

Nearly half of U.S. coral reef ecosystems are considered to be in "poor" or "fair" condition according to a new NOAA analysis of the health of coral reefs under U.S. jurisdiction.

The report issued July 7, The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008, says that the nation's coral reef ecosystems, particularly those adjacent to populated areas, continue to face intense human-derived threats from coastal development, fishing, sedimentation and recreational use. Even the most remote reefs are subject to threats such as marine debris, illegal fishing and climate-related effects of coral bleaching, disease and ocean acidification.

The report was released by NOAA at the 11th International Coral Reef Symposium in Fort Lauderdale, Fla. More than 270 scientist and managers working throughout the Gulf of Mexico, Caribbean, the Atlantic and Pacific authored the 15 jurisdiction-specific chapters of the report. The scientists graded the coral ecosystems on a five tier scale: excellent, good, fair, poor and unknown.

"NOAA's coral program has made some significant progress since it was established 10 years ago, but we need to redouble our efforts to protect this critical resource," said retired Navy Vice Admiral Conrad C. Lautenbacher Jr., Ph.D., under secretary of commerce for oceans and atmosphere and NOAA administrator.

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"The report shows that this is a global issue," said Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force. "While the report indicates reefs in general are healthier in the Pacific than the Atlantic, even remote reefs are subject to threats stemming from climate change as well as illegal fishing and marine debris."

The conditions of U.S. coral reefs have been declining for several decades according to the report's authors. As an indicator of this decline, since the last status report was released in 2005, two coral species -- Elkhorn and Staghorn corals --- have become the first corals ever listed as threatened under the Endangered Species Act.

The 2008 report is the third in a series, representing an evolving effort to track the condition of coral reef ecosystems at both local and national scales. It was called for in the National Coral Reef Action Strategy (NCRAS) and was designed to address the primary threats, goals and objectives outlined in the NCRAS, the Coral Reef Conservation Act of 2000, and other guidance documents. NOAA's Center for Coastal Monitoring and Assessment's Biogeography Branch led the development and production of the report with support from NOAA's Coral Reef Conservation Program.

redOrbit

South Florida Reefs May Have Been Damaged By Storms and Pollution

By Robert Nolin & Rafael A. Olmeda, South Florida Sun-Sentinel

July 8 2008

When it comes to the health of South Florida's coral reefs, the prognosis is not as gloomy as it could be. But it's not that sunny, either.

Coral reefs stretching from the Keys to Martin County haven't deteriorated over the past five years, government scientists say. But that may be because damage inflicted over decades by storms, pollution, sewage and warmer temperatures has already been done.

"Coral generally has been hanging in there," said Ken Banks, natural resources specialist with the Broward County Environmental Protection and Growth Management Department. "I'm optimistic about some things and pessimistic about others."

The status of the reefs was outlined in a survey released Monday by the National Oceanic and Atmospheric Administration. The 569-page NOAA report, distributed at the International Coral Reef Symposium being held this week at the Broward County Convention Center in Fort Lauderdale, is the first reef analysis since 2005.

South Florida's reefs, like half of those under U.S. jurisdiction, are rated fair or poor. The other half are listed as excellent or good.

Off South Florida, the reefs' coral cover is rated fair, for example, while water quality is rated poor. The prevalence of coral disease is low, however, the survey said.

Threats to the reefs, which extend less than two miles offshore, include recreational fishing and damage from vessel groundings off Port Everglades. Low-grade threats are coral bleaching and climate change.

"We still have algae blooms that impact the reef in a bad way," Banks said. "The coral is dying off but we don't have a lot of coral here anyway."

Chantal Collier, coral reef program manager for the Florida Department of Environmental Protection, led the team that analyzed the reefs that stretch more than 100 miles along the South Florida coast. Development along that high-growth area, as well as beach renourishment and dredging, have altered sediment patterns that affect the health of the reefs.

"Coastal development is increasingly rapid," said Collier, who expressed hope that the survey would help get out the message that reef protection is important.

Gov. Charlie Crist, attending the opening day of the conference, echoed that message.

"Our reefs are one of our greatest natural resources," he said. "As a Floridian, I understand the fact that our economy is inextricably linked to our environment. Making sure we protect our environment only helps our economy."

According to the study, reef-based tourism accounts for $2.3 billion in revenue in South Florida. But overfishing threatens reefs by damaging habitat or upsetting the ecological balance between fish and reef.

"Evidence is warning us that many of our coral reef ecosystems are imperiled, and we as a community must act now," said Kacky Andrews, director of NOAA's Coral Reef Conservation Program.

Besides overfishing, factors that lead to reef decline are pollution, warmer seawater temperatures and untreated sewage.

Crist aimed to eliminate the last threat by signing into law Monday a bill that would ban all ocean-sewage dumping by 2025. The law also prohibits the construction of new outfall pipes or expansion of existing ones.

Recent damage to South Florida's reef system could have been worse, said Jenny Waddell, the study's lead editor. For example, reef injury from the hurricanes of 2004 and 2005 was offset by the natural churning that took place, allowing nutrients to feed the algae on coral and thus prevent widespread bleaching, which is harmful.

The report partly credits official policies for keeping matters from becoming more severe.

Staff Writer Jon Burstein contributed to this report.

Robert Nolin can be reached at rnolin@sun-sentinel.com or 954-356-4525.

DIVE IN Get an underwater look at the some of the damage to South Florida's coral reefs at Sun-Sentinel.com/reefs

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Red Orbit, July 8, 2008

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New governance thinking efficient cure for global coral crisis

Schwedischer Forschungsrat - The Swedish Research Council

July 8, 2008

A new and alternative management of Australia's Great Barrier Reef Marine Park has been hailed as a groundbreaking international model for better managing the oceans, in a leading US scientific publication. In a study published July 7 in the prestigious Proceedings of the US National Academy of Science, Per Olsson and Carl Folke of the Stockholm Resilience Centre at Stockholm University and Terry Hughes of the ARC Centre of Excellence for Coral Reef Studies in Australia have identified the keys to successful marine ecosystem-based management. Their findings were revealed today at the 11th International Coral Reef Symposium, in Fort Lauderdale, Florida, where the world's leading coral reef scientists and managers have gathered.

"The core issue is that the global 'coral crisis' is really a crisis of governance," says Prof. Terry Hughes. "Round the world, people are struggling with the difficulties of managing these sensitive coral ecosystems in the face of all the human and natural pressures they are subject to."

"Many people have tried to protect marine environments but as soon as some form of governance was put in place and everyone relaxed, it was overtaken by events - either human or natural", Hughes says.

According to co-writer Per Olsson, the critical realization in the case of the Great Barrier Reef was that its management had to be flexible and adaptive, based on continual scientific monitoring of what is going on.

"This flexibility was important in order to deal with change, and to navigate the transition to an improved system of governance. It enabled new interactions and ways of working together with the authorities. Such flexibility is fundamental for bureaucratic organizations", Dr. Olsson says.

The paper highlights the role of leadership and consensus-building, and credits the Great Barrier Reef Marine Park Authority and its Chair, Virginia Chadwick, with having sought and gained the support of the public, industry and governments at all levels for putting the management of the world's largest coral reef system onto an ecological footing.

"Our study shows the importance of leadership and strategies for responding to signals of change before ecosystem collapse occurs", Dr. Olsson says.

A critical step in the process was to convince local communities that the reef was facing many threats, and to enlist public support for managing it more flexibly. This was accomplished through a major "Reef Under Pressure" community consultation campaign.
"Combined with the declines in populations of dugongs, turtles, sharks and other fish, polluted runoff from the land and global warming impacts, it became clear to everyone that the original management system was becoming less and less adequate as the pressures on the reef grew." Prof. Hughes says.

One of the most visible and controversial initiatives under the new regime was to extend the area closed to all forms of fishing from 6 to 33 per cent of the total reef area - creating the largest no-take zone in the world.

"The Barrier Reef example illustrates a shift in thinking to an integrated view of humans and nature, based on active stewardship of marine ecosystems for human well-being" Dr. Olsson says.

Backing all of this was the necessary legislation and regulatory powers and also having a sufficient flow of good science to inform the management process constantly. The study underscores the particular importance of integrating good science with good policy.

The report concludes that laws alone cannot bring about the changes necessary to protect the world's ocean ecosystems - good science and public participation, understanding and support are also vital.

"In contrast to the GBR case, marine zoning in some countries has been severely constrained because of poverty, inflexible institutions, lack of public support, difficulties developing acceptable legislation, and failures to achieve desired results even after zoning is established. These are the critical barriers that we must urgently address and overcome" Professor Hughes said.

"Understanding successes and failures in marine governance systems is a first step in improving their adaptive capacity to secure ecosystem services in the face of uncertainty and rapid change," Prof. Folke says.

About Stockholm Resilience Centre
The Stockholm Resilience Centre is a new international centre that advances transdisciplinary research for governance of social-ecological systems with a special emphasis on resilience - the ability to deal with change and continue to develop.

For more information, see website www.stockholmresilience.su.se

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Report States Half of U.S. Coral Reefs in "Poor" or "Fair" Condition

July 8, 2008

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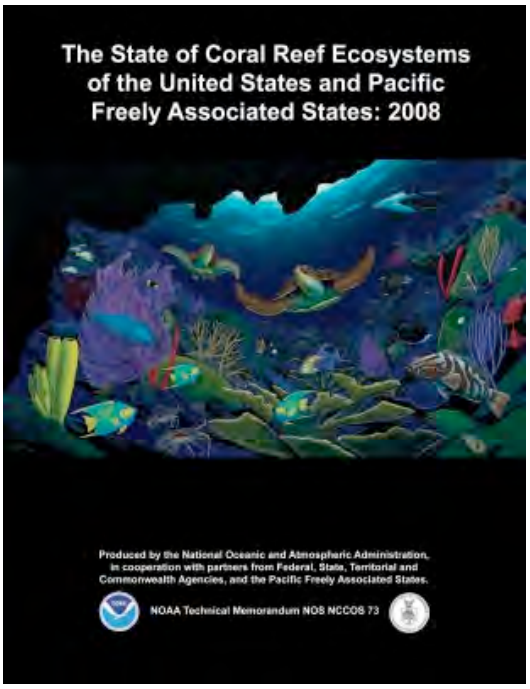

The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008. Credit: NOAA

"NOAA's coral program has made some significant progress since it was established 10 years ago, but we need to redouble our efforts to protect this critical resource," said retired Navy Vice Admiral Conrad C. Lautenbacher Jr., Ph.D., under secretary of commerce for oceans and atmosphere and NOAA administrator.

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"The report shows that this is a global issue," said Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force. "While the report indicates reefs in general are healthier in the Pacific than the Atlantic, even remote reefs are subject to threats stemming from climate change, as well as illegal fishing and marine debris."

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Related Link
The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008 is available for free download at ccma.nos.noaa.gov/stateofthereefs

Albuquerque Express

Half of US coral reefs in 'poor' or 'fair' condition, says NOAA report

(ANI)

July 8, 2008

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MALAYSIA SUN

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(ANI)

July 8, 2008

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NEWS AGENCY
THE STORY UNDERNEATH

CLIMATE CHANGE: Corals Collapsing in More Acid Oceans

Stephen Leahy

July 8, 2008

FORT LAUDERDALE, U.S., Jul 8 (IPS) - Coral reefs need to be put on "life support" if they are to survive climate change, but their ultimate survival is dependant on major reductions in fossil fuel emissions, say experts.

Coral reefs like this one could be gone by 2050 due to ocean acidification from global warming.
Credit:Chuck Savall

"We're going to hear lots of bad news about corals in the next few decades," Rich Aronson, president of the International Society for Reef Studies, told 3,000 scientists, conservationists and policy makers at the 11th International Coral Reef Symposium (ICRS) in Fort Lauderdale, Florida Monday.

Climate change is making the ocean too warm and too acidic for most corals species to survive beyond the year 2050, many marine scientists now believe.

"The situation is serious to the point of desperation," Aronson told IPS in an interview.

Past and present carbon emissions from burning fossil fuels have already altered the oceans, leading to declines in corals in many areas. This trend will continue for decades even if it were possible to eliminate all emissions today, scientists say. Current emissions are running at eight to nine gigatonnes a year and rising, resulting in dramatically altered oceans where few of the current coral species will be able to survive.

"This is a pivotal moment. We must act strongly and immediately if we are to have coral reefs as we know them," Aronson said.

The action he and others urge involves major reductions in carbon emissions, protecting reefs from overfishing, pollution and other threats and helping corals be more resilient so they can better withstand changing conditions. The latter will act as a kind of life support system until the world community manages to sharply reduce carbon

emissions. That may give corals the time they need to adapt to a changed ocean. Currently the rate of change is far too rapid for species to adapt, experts here say.

Coral reefs support about 25 to 33 percent of the oceans' living creatures. Some one billion people depend directly and indirectly on reefs for their livelihoods. Sea birds and many species of fish would affected by the loss of reefs.

Surprisingly, most scientists pegged overfishing as the biggest threat to corals just four years ago at the last International Coral Reef Symposium, Joan Kleypas of the National Centre for Atmospheric Research in Boulder, Colorado told the symposium. In the intervening four years, a great deal of research has been completed on the impacts of climate change on the oceans, and that has now convinced nearly all experts that it is by far the biggest threat to oceans.

Most corals begin to die when ocean temperatures increase by more than 2.0 degrees C and that is likely to happen under nearly all future carbon emission scenarios before 2100. Detailed computer models show that all corals will suffer severe bleaching in one to five years. If emissions decline rapidly in the next decade and if corals are more resilient to ocean warming, then there is hope, according to recent research.

There is some evidence that some corals can survive some warming of ocean temperatures, but there is no solution for acidification, says Klepas.

The oceans naturally absorb carbon from the atmosphere but because of human emissions they are absorbing more and more. This additional carbon has altered the oceans' chemistry, making them 25 to 30 percent more acidic. Each day, the oceans absorb 30 million tonnes of CO2, gradually and inevitably increasing their acidity, and leaving less calcium carbonate in the water for corals and shell-form species like phytoplankton to grow or maintain their skeletons.

"Acidification affects all marine species, not just corals," Kleypas noted. However, little research has been done to understand specifically what those effects may be.

Kleypas admits it looks impossible to save corals, but she remains hopeful. "We need to keep CO2 levels at a reasonable rate and corals may be okay," she said.

There is enough information about how to reduce carbon emissions and even a growing realisation that such reduction may not be costly in economic terms, Aronson said. Protecting reefs from other threats like overfishing and pollution is not difficult, but will require political leadership. Saving corals needs to be an international effort spearheaded by the United Nations.

"We (scientists) have to be pragmatic and we have to be smart about politics," Aronson said. "All of us -- scientists, conservationists and the public -- have to rise up and fight to protect reefs."

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NOAA: Warming Seas Killing U.S. Coral Reefs

AP

July 08, 2008

FORT LAUDERDALE, Fla. — Almost half the coral reef ecosystems in United States territory are in poor or fair condition, mostly because of rising ocean temperatures, according to a government report released Monday.

The reefs discussed in the National Oceanic and Atmospheric Administration report serve as breeding grounds for many of the world's seafood species and act as indicators of overall ocean health.

"They are a major indicator of something that could go wrong with the environment," said Timothy Keeney, NOAA's deputy assistant secretary for oceans and atmosphere.

Keeney said 25 percent of all marine species need coral reefs to live and grow, while 40 percent of the fish caught commercially use reefs to breed.

"If we lose the reefs, you lose a very significant and important habitat," Keeney said.

Since NOAA's last report in 2005, the Caribbean region has lost at least 50 percent of its corals, largely because sea temperatures have risen, Keeney said.

Elkhorn and staghorn corals have also been listed as threatened under the Endangered Species Act, the first corals ever to receive such protections based on rapid declines.

The 569-page report took 18 months to complete with input from 270 federal, state and university scientists. It documented 15 ecosystems in U.S. states and territories, including the U.S. Virgin Islands, Puerto Rico, Florida, Hawaii, American Samoa and Guam. It was released at the 11th International Coral Reef Symposium in Fort Lauderdale.

The report's authors noted it was the first detailed NOAA study to go beyond anecdotal evidence and patchy science to provide conclusive data that the nation's coral reefs are in trouble.

"We can actually document these declines now," said Jenny Waddell, coeditor of the study and a NOAA marine biologist.

The report found that coral bleaching caused largely by rising sea temperatures is a major factor. Carbon dioxide released by burning fossil fuels is absorbed by the oceans, making the waters more acidic and corrosive on corals.

Land-based pollution, such as sewage, beach erosion, coastal development and overfishing also are to blame.

The study does not make recommendations, but simply serves as what its authors deem a "call to action" for state governments and Caribbean countries.

Keeney sees corals as "a sentinel species of the planet," and calls them "the rain forests of the sea." Beyond their importance as breeding grounds for fish, reefs could hold cures for diseases.

He said there are also positive signs that people are beginning to understand "the value of coral reefs to our economy."

Kenney argues the report adds another layer of scientific certainty that man-made climate change is stressing the nation's oceans and could ultimately have huge economic and social impacts if its effects are not reversed.

"There's no question that ... man-made actions are the major cause for these losses and stresses on the reefs," Keeney said.

Dave Allison, a senior campaign director for the advocacy group Oceana, said the entire world's coral reefs "border on disaster."

"All the world's coral reefs are being stressed by both short-term and long-term human impacts," Allison said. "We've known about the human impact on corals for decades. It's just that the combination of problems confronting the corals have never come together in such a perfect storm."

Technology, Discovery & Innovation
SCI-TECH TODAY.COM

'Invasive' Humans Threaten U.S. Coral Reefs

By Dan Vergano

July 8, 2008

Coral reefs are living creatures made from the hardened shells of tiny polyps. They cover only 1 percent of the world's surface but play an outsize role in the oceans, serving as nurseries for young fish, centers of diversity for species and the underpinnings of some islands. Two Caribbean coral species, elkhorn and staghorn, are now threatened.

Half of all U.S. coral reefs, the center of marine life in the Pacific and Caribbean oceans, are either in poor or fair condition, a federal agency warns today.

The report by the National Oceanic and Atmospheric Administration places much of the blame on human activities and warns of further oceanwide decline.

Reefs closer to cities were found to suffer poorer health, damaged by trash, overfishing and pollution.

"Human impacts are making the big difference," says NOAA's Timothy Keeney, co-chair of the U.S. Coral Reef Task Force. "Humans are the most invasive species of all."

Coral reefs are living creatures made from the hardened shells of tiny polyps. They cover only 1 percent of the world's surface but play an outsize role in the oceans, serving as nurseries for young fish, centers of diversity for species and the underpinnings of some islands. Two once-common Caribbean species, elkhorn and staghorn coral, are now threatened.

Released today at the International Coral Reef Symposium in Fort Lauderdale, the report looks at the 15 federally administered shallow-water reef preserves in the Pacific and Caribbean. Among the findings:

*Caribbean reefs were blasted in 2005 by hurricanes, disease and bleaching that killed 90 percent of all corals in some locations. Bleaching is a loss of color often attributed in part to global warming.

*Seafood species numbers are in poor condition at both Caribbean and Pacific reefs.

"Coral reefs are beautiful, but they are also tremendous economic resources," says NOAA marine biologist Jenny Waddell. Healthy reefs benefit tourism and fisheries, and serve as coastal storm breaks, she says.

The report is based on survey responses from reef managers, as well as reports from 270 scientists, Waddell says.

"We may be reaching a tipping point for coral reefs from changes in climate and overfishing, says NOAA's Mark Monaco. "But that doesn't mean we can give up."

DISCOVER
Science, Technology, and The Future

U.S. Coral Reefs Are Getting Sicker and Sicker

By Eliza Strickland

July 8th, 2008

Image: flickr/*laszlo-photo*

Put this one in the bad news file: A new report from the National Oceanic and Atmospheric Administration (NOAA) states that half of the coral reef ecosystems in U.S. waters are ailing, and that their condition has declined precipitously in the three years since the last report. Since 2005 the Caribbean has lost 50 percent of its corals primarily because of rising ocean temperatures, which are linked to global warming, the report says.

Besides being a marvel of the natural world, the coral reefs serve as breeding grounds for many of the world's seafood species and act as indicators of overall ocean health…. [NOAA official Timothy] Keeney said 25 percent of all marine species need coral reefs to live and grow, while 40 percent of the fish caught commercially use reefs to breed. "If we lose the reefs, you lose a very significant and important habitat," Keeney said [AP].

The report, which was released at the International Coral Reef Symposium, describes reef conditions in the waters around Florida, Hawaii, and U.S. territories scattered across the Caribbean and Pacific. Corals around the world face multiple stresses that include overfishing of algae-eating fish that keep coral reefs clean; sewage and fertilizer runoff that turns the water a soupy green and shades corals from the sunlight they need or overgrows the reefs with suffocating mats of algae. Other problems associated with global warming now contribute to the poor health. Warmer than usual seawater stresses corals to the point that they "bleach" bone white, expelling algae from their skeletons that give them their color. Some of these tiny animals recover but many fall victim to disease or otherwise die [Greenspace blog, Los Angeles Times].

In another indicator of the worsening condition of the reefs, elkhorn and staghorn corals that were once common in the Caribbean have recently been listed as "threatened" under the Endangered Species Act; they're the first coral species to receive such a designation. Says Keeney: "Human impacts are making the big difference…. Humans are the most invasive species of all" [USA Today].

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NOAA report: US coral reefs in severe decline

By Brian Skoloff, Associated Press Writer

July 8, 2008

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ABC
Australian Broadcasting Corporation
Radio Australia

Sense of urgency at coral reef meeting

July 8, 2008

The world's largest scientific meeting on coral reefs is underway in the United States.

The International Coral Reef Symposium is held once every four years, and this year it's taking place in Florida.

Radio Australia's Corinne Podger reports that nearly 2,500 coral experts are at the Symposium, presenting the latest research on the world's reefs - from the Pacific to China to the coasts of Africa.

Coral reefs are threatened by warming sea levels and increased human contact. [Reuters]

This meeting's taken the theme 'Reefs for the Future', and hundreds of presentations are focusing on the threats posed by overfishing, pollution, and the temperature rises and severe weather events linked to climate change.

There's a sense of urgency here, with many reefs on the brink of extinction - with dramatic implications for around 500-million people who rely on them for food and income.

But there's also room for hope, in the form of successful experiments in farming and transplanting healthy coral to damaged reefs, and the estabishment of more marine parks and sanctuaries.

There's an increasing emphasis on better communication between stakeholders, from fishing and indigenous communities, to local and national governments, to improve the management of reef resources and reinforce legislation.

Summit tackles threats to reefs

July 8, 2008

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But there is also room for hope, in the form of successful experiments in farming and transplanting healthy coral to damaged reefs, and the establishment of more marine parks and sanctuaries.

And there is an increasing emphasis on better communication between stakeholders, from fishing and indigenous communities, to local and national governments, to improve the management of reef resources and reinforce legislation.

ScienceAlert
Australia & New Zealand

Oceans more acid than expected

July 8, 2008

The world's oceans may be acidifying far more rapidly than scientists expected, with serious implications for the future of corals, reef algae, shell fish and some ocean food chains.

Coral evidence has found that ocean acidification may be advancing more quickly than thought

New coral evidence suggesting the oceans may have acidified by almost a third of a unit of pH as a result of human emissions of CO2 was presented 7 July 2008 to the International Coral Reef Symposium, at Fort Lauderdale, Florida, in a keynote paper by Australian earth scientist Professor Malcolm McCulloch of the ARC Centre of Excellence for Coral Reef Studies and Australian National University.

"We've measured an increase of almost 0.3 of a pH unit in acidity in corals – which is much higher than has been detected so far in ocean water itself," Prof. McCullough says.

"This suggests either that the corals are somehow amplifying the effect – or else that we may have gravely underestimated the rate at which the burning of fossil fuels is turning the oceans acidic."

Acidic oceans have two important implications, Prof. McCulloch says. First, they may cause living creatures which depend on an alkaline environment to cease forming their shells and skeletons – this applies to about a third of sea life.

Second, as the oceans become saturated with CO2 their ability to absorb carbon from the atmosphere is expected to decline, leaving more CO2 in the air to insulate and accelerate the pace at which the planet warms.

"We are unsure of the explanation for why the corals are showing these high levels of acidification – but we need to find out, and quickly," he says. "Clearly something is

happening in the oceans, and we need to understand whether it is a major problem or not."

There is also emerging evidence that coralline algae, which are the 'cement' that binds together the fronts of coral reefs against the ocean's power, will be more seriously affected than even the coral itself, causing reefs to crumble away.

How serious the impact of ocean acidification will be on corals themselves is not yet clear he says. "If half the data obtained by scientists in tank experiments is correct, then coral reefs are in a lot of trouble. However in the sea itself, the corals may be able to adjust. New experiments into acidification being conducted on actual reefs will give us a clearer picture."

On a more encouraging note, new evidence suggests that coccoliths – marine plankton with chalky skeletons which make up an important part of the ocean food chain – may initially benefit from the changes in ocean acidity levels which will favour organisms which use bicarbonate (rather than carbonate) to form their skeletons. However higher levels of acidification would eventually shut down even these.

Prof. McCulloch also told the ICRS meeting that there is a growing scientific consensus that sea levels are rising faster than expected.

"We know that sea levels have been rising due to thermal expansion, but there is now mounting evidence that the melting of the Greenland and Arctic icecap could lead to the same sort of catastrophic deglaciation as occurred at the end of the last Ice Age, several thousand years ago when the climate warmed dramatically."

Prof. McCulloch says there are fossil coral reefs at Margaret River, Western Australia, which now lie about three to four metres above the current sea level. These date back to this era of higher sea levels, and provide an indicator of how high they rose when the major ice caps last melted extensively.

Report: Healthy Marshall Islands' Coral Reefs Face New Threats

July 8, 2008

"Today, coral reef ecosystems in the Marshall Islands are in excellent condition. The outer and less populated atolls in particular support healthy and diverse communities of marine life. However, in recent years, the coral reefs in the Marshall Islands have become increasingly threatened by pressures of fisheries, climate change and sea-level rise, increased urbanization and a loss of cultural traditions."

A 569-page report, the third in an ongoing series of assessments of the condition of coral reef ecosystems in the United States and Pacific Freely Associated states by NOAA's Coral Reef Conservation Program, evaluates the impacts of thirteen major threats and summarizes the current conservation management activities being implemented in the 15 jurisdictions. Highlights from the Marshall Islands Chapter follow:

More Highlights from Marshall Islands Chapter:

For example, the outer atolls in RMI suffer from occasional forays of fishers involved in the live fish trade and illegal shark finners. Coral reefs near the population centers at Majuro atoll (30,000) and Ebeye (15,000) are far more impacted by fishing and pollution than other parts of the RMI.

Many of the Marshall Islands' coral reefs remain unexplored, but capacity for coral reef assessment and monitoring is growing. Over the past few years, the College of the Marshall Islands (CMI), Natural Resource Assessment Surveys (NRAS), Coastal Management Advisory Council (CMAC), Marshall Islands Conservation Society and the Re-Imman Project Team have collected baseline information on the condition of RMI coral reefs with strong support from the Marshall Islands Marine Resources Authority (MIMRA), local communities and local governments. The CMI Marine Science program is helping to build local capacity for conservation. A national database of survey data for six atolls is maintained at the CMI and MIMRA offices. The information presented in this chapter is based on these surveys, personal observations by CMI staff and reports of a University of Hawaii expedition to Ailinginae atoll in 2002. A long-term comprehensive monitoring project is underway at Rongelap and similar efforts are under development for Majuro, Ailuk and other atolls in the future.

Conservation and sustainable resource management has always been a part of Marshallese traditional culture. The increasing threats to marine resources have strengthened commitment within the RMI government and communities to establish and manage community-based conservation areas in addition to other resource conservation strategies.

Over the last decade, various efforts have been made to establish community-based conservation areas on different atolls. Those conservation initiatives have been led either by MIMRA, as part of the development of sustainable local fisheries, by the national Environment Protection Authority (RMIEPA) or by local atoll governments (e.g., Mili's 2003 efforts have stalled, but a recent initiative on Ailuk established management areas and a management plan for the atoll).

Other communities and leaders are seeking protection through international conservation efforts, such as the nomination of Ailinginae and Bikini Atolls for inclusion on the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site list.

In 2006, the president of the Marshall Islands signed the Micronesia Challenge, a commitment by Micronesian countries and territories to "effectively conserve" 30% of nearshore marine and 20% of terrestrial resources by 2020. The need for an overarching framework for conservation area planning was recently addressed by development of a national document outlining the principles, process and guidelines for the design, establishment and management of conservation areas that are fully owned and endorsed by local communities based on their needs, values and cultural heritage (Re-Imman Project Team, 2008).

Climate Change and Coral Bleaching

Because the country is comprised of numerous low-lying islands that depend on intact coral reef ecosystems for protection from erosion, the RMI is particularly threatened by climate change and associated sea level rise. Among the anticipated effects of climate change are an increasing incidence of storms, drought and sea level rise. Recently Majuro Atoll suffered both a serious storm (October 2006) and an extended drought, which led to the declaration of a water emergency.

Sea level rise

The Intergovernmental Panel on Climate Change's (IPCC) 3rd Assessment Report (IPCC, 2001) reported that sea level has been rising an average of 0.01 to 0.02 m per century since 1000 BC, but the 4th Assessment (IPCC, 2007) established that sea level rise over 20th century was 0.17 m. For various emissions scenarios and with a nominal allowance for ice sheet effects, the IPCC projects sea level rise in the 21st century to be between 0.18 and 0.79 m, but the report also cautions that "larger values cannot be excluded" since the "understanding of these effects is too limited to assess their likelihood or provide a best estimate or an upper bound for sea-level rise" (IPCC, 2007).

Rahmstorf (2007) analyzed the tendency of observed sea level rise to exceed the upper limit of IPCC forecasts, and projected a total 21st century sea level rise of 0.5 to 1.4 m unless mitigation measures are implemented.

The land area of the Marshall Islands averages about 2 m above sea level (www.rmiembassyus.org/Environment.htm); the highest elevations are generally found along shorelines with lower elevations inland (ELP, unpub. data). RMI government is very concerned with sea level rise. The potential impact of sea level rise has been demonstrated quite dramatically during extreme high tides when the groundwater lens rises above the surface in the low-lying areas. Building dykes and pumping would be impractical to maintain land below sea level, as the soil substrate is porous coral rubble. Construction of seawalls is equally unfeasible as it would require islanders to mine nearshore areas for building materials, similar to the blast mining that occurs on Majuro reef flats (Barnett and Adger, 2001) and the widespread hand mining of beaches (McKenzie et al., 2006).

There is currently a move to dredge sand and gravel from lagoons (Smith and Collen, 2004) in order to conserve ocean reefs. Ocean reefs are an initial line of defence against the sea as they dissipate wave energy, provide habitat for foraminiferans which make up most of the sand in the lagoon and cement together reef structure. Holthus et al. (1992) estimated a 7% loss to the Marshall Islands gross national product with a 1 m sea level rise through application of the Bruun (1962) rule for beach erosion. But Forbes and Solomon (1997) assert that the Bruun rule is “clearly inappropriate where shorelines have responded to past high water levels by progradation rather than recession, and where the nearshore profile is constrained by the reef flat.” A regional high stand of sea level at about 2-3 m above the present level in 2000 B.C. (before human habitation) was responsible for the formation of island foundations (Dickinson, 2006). The current population center at Majuro Atoll, however, is not situated on this relatively high land at Laura, but on much lower and partially reclaimed land.

Bleaching

Corals in the Marshall Islands have been spared from mass bleaching events like those that have impacted Palau and the Caribbean, but observations made primarily on Majuro indicate that modest bleaching events have occurred on at least five occasions. Bleaching events in the RMI, which usually are restricted to intertidal depths, were first observed in an undated photographed used for tourism promotion between 1998 and 2000. An event beginning in September 2001 during a period of calm, cloudless weather (Abraham et al., 2005; Pinca et al., 2005) resulted in considerable coral mortality, which intensified and spread to slightly greater depths during low tides in October and November 2001. Mortality among shallow Acropora colonies on both lagoon and ocean shores was well documented (Jacobson, unpub. data). Local knowledge suggests that similar events did not occur in the RMI previously.

Coral bleaching at deeper sites was observed on Majuro in both 2003 and 2006. The 2003 event involved Acropora, Porites, Millepora and other colonies down to depths of

at least 10 m. In 2006, up to 5% of massive Porites spp. colonies within the northern lagoon were entirely or partially bleached, but with no apparent mortality (Figure 12.3). At several lagoon sites, up to 90% of Acropora colonies also bleached, leading to significant mortality (approximately 20-50%) down to 3 m depth. Significantly, many massive Faviid and Platygyra colonies growing at 5-8 m on the fore reef bleached and suffered “crown” mortality in 2006. This pattern of mortality primarily affects the top surfaces of colonies and can result in scars that persist for many years; such scars had not been observed previously on Majuro (Jacobson, unpub. data). Recent subtidal bleaching events have been largely restricted to a few species and usually result in a low overall incidence of bleaching (typically less than 20% of all coral below several meters depth). The 2003 and 2006 events occurred during a period of elevated sea water temperatures which may have contributed to a subsequent coral disease outbreak. Widespread bleaching was observed on corals in the lagoon of neighboring Arno atoll in December 2006 (Richardson, unpub. data). The atoll’s population of Isopora cuneata, an important reef-building species, was severely reduced or impacted. Only shaded colony bases survived.

Few reports of coral bleaching have emerged from outer atolls, but this is more likely due to a lack of monitoring and not a lack of bleaching. A visit to Jaluit atoll in 2003 and 2004 permitted scientists to document a dramatic subtidal bleaching event and subsequent coral mortality there. Bleaching on Jaluit during this event was restricted to tabulate colonies of A. robusta, a form uncommon on Majuro.

Diseases

Coral disease in the Marshall Islands is not yet well characterized. An outbreak of Acropora white disease affecting tabulate colonies on the exposed outer reefs in Majuro is the most intensively documented case so far. A bacterial pathogen, Vibrio coralliilyticus, which has been shown to be the cause of white plague type II in the Caribbean, was isolated from Majuro lagoon in 2004; the bacteria is known to co-occur with a large histophagous ciliate and results in brown band disease in corals of Australia’s Great Barrier Reef. The outbreak of Acropora white disease has persisted for at least seven years, with a peak during 2003-2004. The peak of the outbreak coincided with the highest temperatures recorded at a lagoon site over a ten year period, and coral bleaching occurred on site at the end of 2003, indicating a possible link between temperature and disease virulence.

In 2006, disease incidence remained relatively low (annual mortality was 5% of live tabulate Acropora area) as it had in 2005, compared to a peak of 16% mortality in 2004. The sustained monitoring of this outbreak has revealed an interesting change in disease symptoms. In 2006 and 2007, table corals were found with large disease-killed lesions, yet little or no signs of disease spreading is visible (i.e., if any white band is present, it is restricted to a small portion of the edge of the lesion). Clearly, corals are not dying as rapidly as they had in 2004. However, following a return of warm conditions in 2006, disease incidence in 2007 appears to be increasing once again.

Two other rarely seen disease syndromes affect Platygyra and Goniastrea spp., which display progressive overgrowth with green filamentous algae (spreading at a rate of mm per week), and Turbinaria, in which multiple lesions expand at a rate of 2-4 cm per year. These cases of disease were found only on the southern, pollution-impacted shore of Majuro. Coralline lethal orange disease is also common on Majuro along the southern shore, and typically spreads at a rate of 1-2 mm/day (Jacobson, in prep.)

Tropical Storms

The Marshall Islands are continuously buffeted by the Pacific Ocean. Narrow strips of land, most of which is less than a meter above high tide, are subject to erosion during storms from surge and large waves. Climate change related storms and associated surge waves threaten coral reef communities, terrestrial natural resources and the livelihood of thousands of people in the Marshall Islands. Past typhoons and tidal waves have devastated parts of Majuro, Arno, Mili, Jaluit, Likiep and Namdrik atolls, and such storm phenomena are expected to continue and possibly intensify with global warming.

An October 7, 2006 storm (which later became Typhoon Soulik) caused large surf and a storm surge that flooded areas of Majuro, inundating parts of the highway and destroying a section of the airport seawall. Large tabulate Acropora colonies were damaged, coral rubble and trash were deposited on the island and some breadfruit trees were killed when salt water pooled around their roots. Fortunately, beach erosion was partially or completely offset by the transport and accumulation of coral rubble. However, the long-term effects of coastal erosion are readily apparent on Majuro, where waves have undercut the shoreline, causing the collapse of coastal land and coconut palms. Recovery of coral reef communities from single and chronic catastrophic events, such as, storms is expected to be slow in situations where the physical environment has been altered (Connell, 1997)

The threat of increased coastal erosion and the loss of some lagoon beaches have prompted a move to outlaw shore dragline dredging on Majuro. Of the two alternatives, suction dredging and importing aggregate, the latter is more expensive. As a result, plans are being made to suction dredge materials from deeper (below 10 m) areas of the northern lagoon where accumulation “deltas” of foraminifera sand are found (see the Associated Biological Communities sec-tion of this chapter for a summary of the area’s foraminifera ecology). However, land owners in the northern lagoon oppose this choice, so it is likely that suction dredging will be restricted to areas of the southern la-goon, despite the disadvantage of smaller grain size. Finding environmentally friendly local sources of aggregate and hard rock is more problematic.

Coastal Pollution

Due to the collapse of the solid waste collection system between 2004 and 2007 (e.g., corroded dumpsters and broken down trucks) and insufficient toilet facilities, much household waste, as well as most fecal waste, was simply deposited along Majuro’s

shoreline. The lack of an effective seawall barrier at the landfill allowed large amounts of floating garbage to escape, blanketing down-current shores with myriad bits of plastic refuse, especially bags and diapers, which can be found in the water column, particularly during high wave events. Much of this garbage becomes entangled on coral. The solid waste landfill on Majuro is nearing capacity. A local non-governmental organization (NGO), the Marshall Is-lands Conservation Society, with New Zealand and U.S. funding, has implemented a new recycling program to increase composting of plant waste (with cardboard soon to be included) and begin community battery collections in an attempt to extend the life of the landfill and divert toxics from the environment.

Regardless of improvements in waste management, black leachate continues to escape from the landfill onto the adjacent reef flat with potentially serious ramifications for the reef ecosystem. For this reason it is crucial to prevent the development of new landfills elsewhere on the atoll. In early 2007, the responsibility for solid waste collection was placed under a single authority, the Majuro Atoll Waste Corporation. Despite a perennial shortfall of funding, the corporation has succeeded in fortifying the seawall and stabilizing the refuse with a cover of sand dredged from the lagoon.

Although incineration has been proposed as an alternative waste manage-ment strategy, the high cost of the incinerator and concerns over hazardous by-products (e.g., toxic emissions and ash) has prevented adoption of this option. Though the use of plastic bags and Styrofoam packaging for food is clearly unsus-tainable, these practices persist in urbanized areas and are expanding to outer atolls. In a small step in the right direction, the CMI has committed itself to use only biodegradable packaging, and encourages its vendors to do the same

Tourism and Recreation

The good of RMI's coral reefs and islands, and the historical significance of the RMI appeals to SCUBA divers, sport fishers and World War II history enthusiasts. The coun-try currently hosts approximately 6,000 visi-tors per year, of which 20% (roughly 1,200) are tourists, primarily from the U.S. and Japan (Figure 12.9). On Majuro, the areas of the northern lagoon are in excellent con-dition and remain the focus of reef-related tourism. Most of these developments con-sist of small-scale resorts on northern islets and a few dive shops. In 2007, the first in a series of Japanese charter flights brought in a large group of SCUBA tourists to Majuro. Other than the small number of yachts visit-ing RMI's outer atolls each year, few tourist operations exist on outer atolls, largely be-cause of unreliable air transport.

On Bikini Atoll, a community-based SCUBA diving center attracts tourists eager to explore a historic collection of WWII wrecks and visit Shark Pass, a part of the atoll that has received international attention thanks to a spectacular population of grey reef sharks. Unfortunately, the shark population at Bikini was significantly depleted by a recent visit from a single illegal shark fishing operation, highlighting the vulnerability of these outer islands to illegal fishing.

A new resort is under development on Rongelap that will allow tourists to visit the atoll, which has been virtually inaccessible since the nuclear tests conducted in the 1950s. Plans have also been announced for the development of a large-scale Korean golf resort and paved airport on Wotje Atoll, which will require the relocation of the population center to adjacent islets. A lack of other local economic opportunities makes the plan attractive to locals, and this reality tends to override concerns about the potentially harmful affects of excess water and nutrients on the marine and terrestrial environment. While outer atoll destinations offer unparalleled diving and fishing opportunities, the remoteness of these atolls is a barrier to tourism development as well as environmental surveillance capacity.

Fishing

Copra has historically been the RMI's sole cash crop. Over the past ten years, however, increased production from Southeast Asian countries has negatively impacted the price of copra and, as a result, RMI has focused more heavily on its fisheries for income. The RMI's Exclusive Economic Zone of over 2,128,970 km2 (822,000 mi2) supports a large population of high-grade tuna, including skipjack, yellowfin, bigeye and albacore. The RMI fisheries operate in accordance with the Forum Fisheries Agency, the regional fisheries regulatory body. The RMI, through the Ministry of Resources and Development, is pursuing a number of development opportunities in fisheries and maintains bilateral fishing agreements with several countries, including Japan, Korea and Taiwan. The licensing fees charged to foreign fishing vessels generate the majority of revenue from this resource.

A China-based fish processing plant is currently under construction on Majuro and is scheduled to begin operations in early 2008. The new plant will supply cooked loins for the canned tuna industry. Due to the wide variety of retail operations, dry dock and harbor facilities, the availability of international air service and access to fuel supplies, Majuro is a competitive location for fishery growth in the region.

Sharks, a valuable tourism resource, have declined in many parts of the Pacific. While some believe that the RMI still supports robust reef shark populations, there is evidence that shark populations are starting to decline (Figure 12.10). Shark fins continue to be exported from Majuro, allegedly as bycatch from the long line tuna fishery. There seems to be little concern for the fate of shark populations among the Marshallese, who fear sharks for their perceived danger.

Trade in Coral and Live Reef Species

Captive breeding or aquaculture ventures in RMI are a boom and bust business. The most successful operations include MIMRA- operated tridacnid clam hatcheries on Majuro, Likiep, Mili and Arno Atolls. Coral fragments are also produced sustainably for the ornamental aquarium trade and are marketed to North America and Europe. Collection of live aquarium fish takes place primarily in Majuro, but also on Arno and Mili, and continues to be unregulated and unmonitored. Many high value target species

(e.g., some butterflyfish and angelfish) are found only in deep (>50 m) habitats; their natural history is largely unknown and therefore the sustainability of these fisheries cannot be assessed. In 2006, over 52,000 individual fish were exported from Majuro (D. Jacobson, pers. obs). Various attempts have been made to farm rabbitfish (Siganus spp.), sea cucumbers and seaweed on various atolls in the country. CMI has promoted aquaculture via the Arrak research station, a research facility that includes classrooms, an algal culture laboratory, a basic science laboratory, an indoor hatchery, larval rearing tanks and grow-out facilities. In 2007 an Australian company began operating a fish farming operation that imports juveniles of barramundi cod (Cromileptes altivelis) for grow-out in the Majuro lagoon. The Black Pearls of Micronesia project is one of the first commercial pearl farms on Majuro.

Ships, Boats and Groundings

Shortly before Christmas 2006, a 23 m abandoned Indonesian style wooden boat drifted onto the southern Majuro shore, where it became entrapped on the reef flat (Figure 12.11) and shifted back and forth along the shore for six days. After it cleared the reef, it continued drifting westward, smashing a narrow band of coral and dislodging large chunks of substrate along 10 km of shore. Efforts to remove the vessel failed.

In the spring of 2007, the near sinking of a dive boat at its mooring led to it being towed across the lagoon and intentionally beached in shallow water in an attempt to salvage the vessel. This resulted in a diesel spill, the destruction of several dozen Porites colonies and the near-destruction of an endemic three banded anemone fish colony (Figure 12.12). This site is a popular, formerly intact snorkeling area in the northern lagoon of Majuro. Litigation resulting from this incident is ongoing and has the potential to result in a landmark, precedent-setting ruling for local environmental law enforcement.

Marine Debris

Due to their location within the northern equatorial current, Marshall Island atolls receive large amounts of marine debris, primarily composed of glass, plastic, rubber and other products which accumulate on the shorelines of all atolls (Figure 12.13). Based on the identity of bottles and identification of floating seeds, it appears that some of the debris originates from as far as Central and South America (Vander Velde and Vander Velde, 2006).

In addition to receiving marine debris from distant locations, Majuro exports a large amount of plastic trash to the Pacific current system. An extraordinary amount of rubbish can be found in the reef habitats of Majuro, on both ocean and lagoon shores.. Disposable diapers are among the most abundant and destructive debris because they stick to corals and do not degrade for lengthy periods of time. Continual abrasion kills the local coral polyps. Plastic bags and other plastic products can reach surprisingly high densities in the water column.

Aquatic Invasive Species

Although macroalgae of the genus Kappaphycus was briefly introduced and successfully cultivated in Majuro lagoon in 2002 as a pilot aquaculture project, this potentially invasive brown algae has evidently not become naturalized. Some years ago Acanthophora spicifera, another macroalgae species, became abundant in Majuro lagoon.

The potential exists for the non-native humpback grouper (Cromileptes altivelis) which was recently imported for aquaculture in lagoon cages, to become naturalized. The giant clam species Tridacna derasa was introduced as an aquaculture species, and anecdotal evidence suggests that individuals still survive at Mili and Arno atolls.

Security Training Activities

The military base at Kwajalein Atoll was established in 1964 and supports the research and development needs of U.S. space and defense programs. The facility provides strategic missile defense program support as the Ronald Regan Ballistic Missile Defense Test Site (RTS), where the military conducts research, development, testing and evaluation using cutting-edge radar, optical and telemetry sensors. The $4 billion strategic military base and the large lagoon at Kwajalein Atoll provide an ideal location for testing long-range missiles launched from the continental U.S. and short to intermediate range missiles launched from elsewhere in the Pacific. In addition to military operations, RTS supports NASA and Department of Energy initiatives.

Offshore Oil and Gas Exploration

There are currently no offshore oil and gas exploration activities occurring in the RMI.

Other

Crown-of-thorns Sea Star (COTS)

No published record of elevated COTS (Acanthaster plancii) population numbers in the RMI occurred in the three decades following an event in the early 1970s, when a large outbreak triggered a professional control effort across Micronesia led by Westinghouse personnel from San Diego (D. Jacobson, unpub. data). However, in 2004 several concentrated aggregations (over 1,000 animals/km2) were found in Majuro's southwestern lagoon and northern pass. Although this outbreak has subsided in most monitored regions without significant human intervention, dense aggregations persisted in some areas in 2007, including one to the west of the northern pass. Most of the lagoon is not currently monitored for COTS, so data on their abundance and distribution is collected opportunistically.

A pilot control project conducted in Majuro during the initial stages of the 2004 outbreak removed over 900 animals from a 1 km long segment of fringing reef in the

southwestern lagoon. Despite these efforts, the region suffered heavy coral mortality when other COTS replaced the removed individuals.

The result of this lagoon outbreak was over 90% mortality among Acropora, heavy mortality among massive colonies such as Pavona spp. and Lobophyllia spp., and locally high mortality (50-75% mortality, mostly in the west) among massive Porites colonies (D. Jacobson, unpub. data; Figure 12.14). The loss of large Porites colonies, which are estimated to be more than 100 years old, is significant, especially considering that COTS generally avoid consuming Porites spp. elsewhere (D. Jacobson, unpub. data). In the northern reaches of the lagoon, a patchwork of devastated reefs are interspersed with areas of low mortality.

Pavona cactus, Acropora, Goniastrea and many other species have been heavily impacted, with more than 95% overall coral mortality on some formerly pristine, highly diverse reefs (D. Jacobson, unpub. data).

On the ocean shore, predation by COTS caused high mortality among large table corals off Majuro's west coast (near the town of Laura) in areas where disease mortality was also high. The outbreak seems to have spread to the east where COTS have continued to attack massive Porites colonies while avoiding branching or columnar species of Porites (i.e., P. rus and P. cylindrica). A number of smaller COTS (< 25 cm) have recently been observed near the airport. During a brief visit to Ebon atoll in 2005, lagoon reefs exhibited significant damage associated with a COTS outbreak that persisted throughout the 1980s and 1990s. Ebon's ocean reefs appear to have largely escaped mortality. Because most of the lagoon's coral colonies had been devoured previously, by 2005 Ebon lagoon's COTS population was comprised of only about a dozen animals that were observed on a large patch reef (D. Jacobson, unpub. data). A very small population of eight COTS was also found on a small patch reef in Ailuk lagoon in June 2006. COTS are routinely found in low abundance on islands such as Majuro and Likiep. Efforts to collect additional information on COTS populations at other atolls will be facilitated by the installation of an environmental radio network, which will improve communication between atolls. - *(Report, pp. 398-395)*

Tuesday, July 08, 2008

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Fort Myers, Florida • Southwest Florida

NOAA report: US coral reefs in severe decline

By Brian Skoloff • Associated Press Writer

July 8, 2008

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The study does not make recommendations, but simply serves as what its authors deem a "call to action" for state governments and Caribbean countries.

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Kenney argues the report adds another layer of scientific certainty that man-made climate change is stressing the nation's oceans and could ultimately have huge economic and social impacts if its effects are not reversed.

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"All the world's coral reefs are being stressed by both short-term and long-term human impacts," Allison said. "We've known about the human impact on corals for decades. It's just that the combination of problems confronting the corals have never come together in such a perfect storm."

THE DAILY REPORTER

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Report Shows Coral Reefs In U.S. In Danger Of Disappearing

July 8, 2008

Washington (ChattahBox) - The National Oceanic and Atmospheric Administration hash conducted an investigation showing that coral reefs in the U.S. are being severely threatened.

The report was revealed on Monday morning and was debated at the International Coral Reef Symposium in Ft. Lauderdale, Florida. What they found was that 90% of all coral reefs in the U.S. have been killed off.

The reasons blamed include diseases, bleaching, and hurricanes.

Though hurricanes are man-made, the disease spread and bleaching have been linked to pollution caused by humans, as well as global warming.

On top of that, it was revealed that marine life in the Caribbean Oceans and Pacific Ocean are at an all-time-low due to human factors.

As quoted by USA Today, NOAA's Timothy Keeney, co-chair of the U.S. Coral Reef Task Force stated "Humans are the most invasive species of all."

Researchers are calling for immediate action to help out marine life.

Life in the balance: Coral reefs declining

July 08, 2008

Coral reefs -- a key element in ocean ecosystems that provide not only coastline protection but billions of dollars in benefits from tourism, as well as ingredients used in cutting-edge medicines -- are increasingly threatened from the effects of global warming and other hazards, according to a new U.S. government report.

The report estimates that nearly half of the coral reefs in areas from the Caribbean to the Pacific "are not in good condition and are continuing steadily on a long-term decline."

"It's a pretty alarming situation," said Jeannette Waddell, the report's co-editor and a marine biologist with the National Oceanic and Atmospheric Administration's National Ocean Service. "Coral reefs around the world are confronted by the same types of threats. In some places it is worse. In some places, it's slightly better. But we're finding that even remote reefs are showing signs of decline," she told ABC News. The NOAA report looked at the health of coral reefs in 15 areas under the jurisdiction of the United States and a group of countries called the Pacific Freely Associated States, which include Palau, the Marshall Islands and Micronesia.

A major threat facing corals is climate change, the report says, which affects coral reefs in multiple ways.

Report: U.S. Coral Reefs In Severe Decline

By Brian Skoloff, Associated Press

July 8, 2008

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"They are a major indicator of something that could go wrong with the environment," said Timothy Keeney, NOAA's deputy assistant secretary for oceans and atmosphere.

Keeney said 25 percent of all marine species need coral reefs to live and grow, while 40 percent of the fish caught commercially use reefs to breed.

"If we lose the reefs, you lose a very significant and important habitat," Keeney said.

Since NOAA's last report in 2005, the Caribbean region has lost at least 50 percent of its corals, largely because sea temperatures have risen, Keeney said.

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The report found that coral bleaching caused largely by rising sea temperatures is a major factor. Carbon dioxide released by burning fossil fuels is absorbed by the oceans, making the waters more acidic and corrosive on corals.

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Fiji scientist says custom way to manage reefs

July 8, 2008

Nearly three-thousand scientists from around the world, including the Pacific, are meeting in Florida for the International Coral Reef Symposium. The symposium pulls together the latest research on reefs and this year is taking the theme "Reefs for the Future". Experts now recognise the importance of getting local people including fishing communities, villagers and local government involved in preserving reefs. But the way people who live on or near a reef value it, often fits poorly into Western-style reef management. One man trying to overcome this is Isoa Korovulavula, from the Institute of Applied Science at the University of the South Pacific in Suva.

Presenter: Corinne Podgor
Speaker: Isoa Korovulavula, from the University of the South Pacific, Fiji

[This is a synopsis of story http://www.abc.net.au/ra/programguide/stories/200807/s2298033.htm]

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Wichita Falls online

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"All the world's coral reefs are being stressed by both short-term and long-term human impacts," Allison said. "We've known about the human impact on corals for decades. It's just that the combination of problems confronting the corals have never come together in such a perfect storm."

US Coral Reefs In Severe Decline

By Brian Skoloff, Associated Press Writer

July 8, 2008

FORT LAUDERDALE, FL (AP) -- Almost half the coral reef ecosystems in United States territory are in poor or fair condition, mostly because of rising ocean temperatures, according to a government report released Monday.

The reefs discussed in the National Oceanic and Atmospheric Administration report serve as breeding grounds for many of the world's seafood species and act as indicators of overall ocean health.

"They are a major indicator of something that could go wrong with the environment," said Timothy Keeney, NOAA's deputy assistant secretary for oceans and atmosphere.

Keeney said 25 percent of all marine species need coral reefs to live and grow, while 40 percent of the fish caught commercially use reefs to breed.

"If we lose the reefs, you lose a very significant and important habitat," Keeney said.

Since NOAA's last report in 2005, the Caribbean region has lost at least 50 percent of its corals, largely because sea temperatures have risen, Keeney said.

Elkhorn and staghorn corals have also been listed as threatened under the Endangered Species Act, the first corals ever to receive such protections based on rapid declines.

The 569-page report took 18 months to complete with input from 270 federal, state and university scientists. It documented 15 ecosystems in U.S. states and territories, including the U.S. Virgin Islands, Puerto Rico, Florida, Hawaii, American Samoa and Guam.

It was released at the 11th International Coral Reef Symposium in Fort Lauderdale.

The report's authors noted it was the first detailed NOAA study to go beyond anecdotal evidence and patchy science to provide conclusive data that the nation's coral reefs are in trouble.

"We can actually document these declines now," said Jenny Waddell, coeditor of the study and a NOAA marine biologist.

The report found that coral bleaching caused largely by rising sea temperatures is a major factor. Carbon dioxide released by burning fossil fuels is absorbed by the oceans, making the waters more acidic and corrosive on corals.

Land-based pollution, such as sewage, beach erosion, coastal development and overfishing also are to blame.

The study does not make recommendations, but simply serves as what its authors deem a "call to action" for state governments and Caribbean countries.

Keeney sees corals as "a sentinel species of the planet," and calls them "the rain forests of the sea." Beyond their importance as breeding grounds for fish, reefs could hold cures for diseases.

He said there are also positive signs that people are beginning to understand "the value of coral reefs to our economy."

Kenney argues the report adds another layer of scientific certainty that man-made climate change is stressing the nation's oceans and could ultimately have huge economic and social impacts if its effects are not reversed.

"There's no question that ... man-made actions are the major cause for these losses and stresses on the reefs," Keeney said. Dave Allison, a senior campaign director for the advocacy group Oceana, said the entire world's coral reefs "border on disaster."

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nature.com

The Great Beyond

The *Nature* blog that rounds up science news from around the world

US reefs under threat

July 8, 2008

America's National Oceanic and Atmospheric Administration issued a stark warning on the nation's coral reefs yesterday.

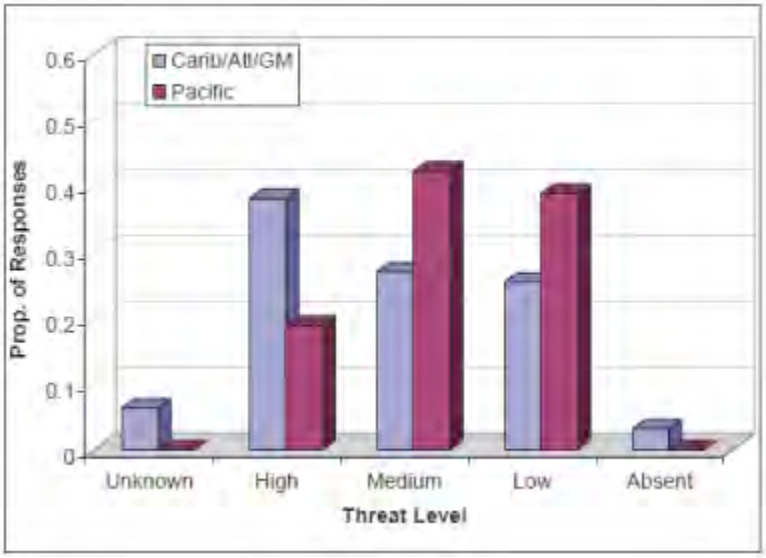
US reefs near human populations face "intense" threats while even the most remote reefs are troubled, it says. The massive 2008 state of coral reef ecosystems report says a conservative message would be that nearly half of reefs are not in good condition and are in long-term decline.

"The report shows that this is a global issue," says Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere (press release). "While the report indicates reefs in general are healthier in the Pacific than the Atlantic, even remote reefs are subject to threats stemming from climate change, as well as illegal fishing and marine debris."

The report states:

> Since the last reporting effort [in 2005], the condition of resources declined, while threats in the majority of jurisdictions have been increasing. For about half of the jurisdictions, threats such as climate change/coral bleaching, coral disease, and tourism and recreation have not changed significantly over the last three years, but have increased over the past 10-25 years.

It took 270 scientists looking at 15 ecosystems to compile the near-600 page monster of a report, presented to the International Coral Reef Symposium in Fort Lauderdale. The graph below shows the ranking of ten common threats in these ecosystems*.



"There are so many people here and all of them are focused on one goal, understanding coral reefs, why are they decreasing, how can we protect them, how we can manage them more efficiently," says Joshua Voss, of the Harbor Branch Oceanographic Institute (WPTV).

Kacky Andrews, program manager of the government Coral Reef Conservation Program, notes a great phrase for the problem in the LA Times. As coined by Scripps scientist Jeremy Jackson: coral are on the "slippery slope to slime".

*Ten threats:

Climate Change and Coral Bleaching
Coral Disease
Tropical Storms
Coastal Development
Tourism and Recreation
Commercial Fishing
Subsistence and Recreational Fishing
Vessel Damage
Marine Debris
Aquatic Invasive Species

Image: NOAA

CNN.com /technology

Coral reefs in trouble, scientists warn

July 8, 2008

FORT LAUDERDALE, Florida (AP) -- Almost half the coral reef ecosystems in United States territory are in poor or fair condition, mostly because of rising ocean temperatures, according to a government report released Monday.
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ENVIRONMENTAL NEWS & COMMENTARY

Color Me Badd

Coral reefs not doing so well

July 8, 2008

We're in the midst of the International Year of the Reef, but there's little to celebrate: Nearly half of coral reefs in U.S. waters are in "poor" or "fair" condition, the National Oceanic and Atmospheric Administration reported at this week's 11th International Coral Reef Symposium. Human activity messes with reefs in all sorts of ways, from ocean acidification (spurred by carbon-dioxide emissions) to fishing, boating, diving, marine debris, coastal development, pollution, erosion, and smothering seaweed grown for human consumption. Two coral species -- elkhorn and staghorn -- are listed as endangered. And loss of coral doesn't just mean disappointed snorkelers: one-quarter of all marine species rely on coral in one way or another, and 40 percent of fish with commercial value breed in reefs.

Half of US coral reefs in 'poor' or 'fair' condition, says NOAA report

Almost 50 percent of U.S. coral reef ecosystems are in 'poor' or 'fair' condition, according to the National Oceanic and Atmospheric Administration (NOAA) report.

July 8, 2008

Almost 50 percent of U.S. coral reef ecosystems are in 'poor' or 'fair' condition, according to the National Oceanic and Atmospheric Administration (NOAA) report.

The report has revealed that the nation's coral reef ecosystems, particularly those adjacent to populated areas, continue to face intense human-derived threats from coastal development, fishing, sedimentation and recreational use.

Even the most remote reefs are subject to threats such as marine debris, illegal fishing and climate-related effects of coral bleaching, disease and ocean acidification, according to the report.

"NOAA's coral program has made some significant progress since it was established 10 years ago, but we need to redouble our efforts to protect this critical resource," said retired Navy Vice Admiral Conrad C. Lautenbacher Jr., Ph.D., under secretary of commerce for oceans and atmosphere and NOAA administrator.

Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force, said: "The report shows that this is a global issue."

"While the report indicates reefs in general are healthier in the Pacific than the Atlantic, even remote reefs are subject to threats stemming from climate change as well as illegal fishing and marine debris," he added.

According to the report's authors, the conditions of U.S. coral reefs have been declining for several decades.

As an indicator of this decline, since the last status report was released in 2005, two coral species - Elkhorn and Staghorn corals - have become the first corals ever listed as threatened under the Endangered Species Act.

The 2008 report is the third in a series, representing an evolving effort to track the condition of coral reef ecosystems at both local and national scales.

The 569-page document details coral reef conditions in the U.S. Virgin Islands, Puerto Rico, Navassa Island, southeast Florida, the Florida Keys, Flower Garden Banks, the Main Hawaiian Islands, the Northwestern Hawaiian Islands, American Samoa, the Pacific Remote Islands, the Republic of the Marshall Islands, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam and the Republic of Palau.

The report was released by NOAA at the 11th International Coral Reef Symposium in Fort Lauderdale, Fla. (ANI)

Los Angeles Times

Fish vanishing from Hawaii's coral reefs

Kenneth R. Weiss

July 8, 2008

Sharks and jacks, parrot fish and other colorful reef fish are quickly disappearing from coral reefs encircling the Hawaiian Islands, leaving three-quarters of reef fish in a dire state, federal scientists reported today.

The scientists blamed overfishing for the steep decline in dozens of species of fish once commonly found on coral reefs, delighting snorkeling tourists and feeding subsistence fishermen who live in coastal communities.

Many of these fish, ecologists say, are key to maintaining healthy coral reefs because they keep reefs clean by grazing algae that can quickly overgrow the stony corals and result in their collapse.

Alan Friedlander, a federal fisheries ecologist, said Hawaii still has relatively healthy reefs. "So everything hasn't collapsed yet," he said. "But we need to protect healthy reefs, because it's so much easier and safer to conserve now than it is to try to rebuild later."

The results of the study, the most comprehensive examination of of Hawaiian reef fish, was released at the International Coral Reef Symposium in Fort Lauderdale, Fla. Nearly 3,000 scientists, managers and conservationists have congregated here to pore over the latest science and wrestle with ways to protect the world's coral reefs, which continue a steep decline.

Many prominent scientists believe that overfishing represents one of greatest challenges to maintaining and restoring healthy coral reefs.

Daniel Pauly, director of the University of British Columbia's Fisheries Centre, pointed out today that international authorities and local governments on Pacific island nations have little understanding of how many fish are being removed from coral reefs by small-scale, subsistence fishermen.

For the most part, catch data compiled by American Samoa and other such island nations, do not incorporate all of the small-boat fishermen who paddle or motor out to catch fish for themselves and their families. Comparing census data of per-person fish consumption and other sources, Pauly and his team of researchers discovered that in some cases the unreported catches were 17 times as high as reported catches. On average, they were at least twice as high.

Reconstructing a clearer picture of historic catches, Dirk Zeller and Jennifer Jacquet at the Fisheries Centre found that domestic caches have declined between 54% and 86% since the 1950s.

This finding is important, Pauly said, because such fish catch data help determine if countries should sell fishing right to foreign fishing fleets. If the local reliance on fish is underestimated, such deals to bring in foreign fishing trawlers and long-liners can come at the expense of an important local source of protein.

"Coral reef fisheries," Pauly said, are "very important because they are supporting millions of people in the developing world." He said that countries and the United Nations' Food and Agriculture Organization need to pay attention to these unreported catches to assure the food security of these isolated islands struggling with the cost of imported food that is spiraling higher with fuel costs.

The study also found that Hawaii's unreported recreational fisheries for reef fish and deep-dwelling bottom fish was equivalent to the total commercial catch, meaning that twice as many fish were caught as reported.

"Overfishing is often disputed in Hawaii and elsewhere because catch data is underreported or spotty," Friedlander said.

The study conducted by Friedlander and his colleagues from the Oceanic Institute and the National Oceanic and Atmospheric Administration's Biogeography Branch on Oahu got around this problem by diving into the water and meticulously counting fish.

Teams of divers looked at 55 species of fish found on coral reefs around the main Hawaiian Islands as well as the remote and largely un-fished northwestern Hawaiian islands, which lie hundreds of miles farther north and west of Kauai.

Comparing the fish count at both places, the divers determined that 75% of the species around the main islands, such as Oahu, Maui and the Big Island, were in critical condition or depleted. Another 11% were below desirable levels.

Friedlander said Hawaii would be well served by tightening fishing regulations. He also said it would be beneficial to set aside protected no-fishing reserves to conserve coral reefs, helping to ensure that reef fish don't disappear for future generations.

"Probably in Hawaii, more than anywhere else in the United States, people rely on fish to feed themselves and their families," Friedlander said.

-- Kenneth R. Weiss

Photo by David Olsen/Photo Resource Hawaii

Scientists Look For Ways To Save Coral Reefs

Coral Experts Gather In S. Fla. As NOAA Announces Decline

July 8, 2008

MIAMI --
Nearly 3,000 of the world's coral experts began a groundbreaking meeting in South Florida Monday as the U.S. government announced that nearly half of the nation's coral reefs are in bad shape.

The numbers from federal researchers tell the story of the most productive places on earth -- 27 percent of reefs worldwide are dead. Of those that remain, humans threaten 58 percent. In South Florida, 61,000 jobs depend on healthy reefs.

For the first time in 30 years, the world's coral experts gathered in the U.S. The 3,000 men and women from 140 countries have covered the coral crisis, and many despair over what they have discovered.

However, University of Miami Pew Marine Fellow Andy Baker and other scientists are among those who are not despairing. Instead, they are trying bold steps to save the reefs, "all guns blazing," he said.

"I think (the conference) represents certainly a change in the mentality that things have gotten to the point where we really need to do everything we possibly can that might have a positive effect on reefs," Baker said. "And that means sometimes attempting methodologies that in the past we might've thought of as sort of a little bit out there."

Some species of reefs are more resilient to changing climates, so artificially planting them can help. Even transplanting their genetic switches to other coral species could make things better, experts said. Also, some spots on earth mysteriously seem less impacted by climate change.

Still, some scientists think the earth has passed the tipping point for the world's reefs. Some call these scientists "gloom and doomers," but even they are starting to change their perspectives.

But it won't be easy. At a news conference, U.S. government researchers announced more bad news.

"Currently about half of U.S. coral reef ecosystems are considered to be in poor or fair condition," said NOAA coral scientist Jenny Waddell.

Still, a growing number of scientists know their research must focus on saving the rain forests of the sea.

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REUTERS
India

U.S. coral reefs under threat, report finds

By Michael Christie

July 8, 2008

FORT LAUDERDALE, Florida (Reuters) - Half of U.S. coral reefs are in poor or fair condition, threatened by climate change and human activities like sports fishing, shipping and the release of untreated sewage, a U.S. government report said on Monday.

Reefs in the Caribbean, in particular, are under severe assault and coral in the U.S. Virgin Islands and off Puerto Rico had not recovered from 2005, when unusually warm waters that led to massive bleaching and disease killed up to 90 percent of the marine organisms on some reefs.

"The evidence is warning us that many of our coral reef ecosystems are imperiled and we as a community must act now," said Kacky Andrews, program manager of the Coral Reef Conservation program at the National Oceanic and Atmospheric Administration.

The new NOAA report on the state of coral reefs in the United States and Pacific territories, including Palau and Guam, was presented at a meeting of coral reef scientists in Fort Lauderdale, Florida.

It was the third such report and the second to be based on actual monitoring of reefs. The reefs were classified as excellent, good, fair or poor based on such things as water quality, fish population and the threats they faced.

The last report was issued in 2005 when warm Atlantic waters killed off large swaths of coral through bleaching, a condition that occurs when environmental stresses, like heat, break down the symbiotic relationship between coral polyps and unicellular algae that give them color.

Half the coral reefs off the U.S. Virgin Islands and Puerto Rico were killed that year, said Jenny Waddell, a marine biologist at NOAA's Center for Coastal Monitoring and Assessment. On some reefs, the fatality rate reached 90 percent, she said.

A series of powerful hurricanes also devastated coral reefs off the Florida Keys in 2005.

HUMAN EFFECTS

But scientists at NOAA said coral reefs had been suffering for much longer due to a warming climate and other "stressors," many due to human activity, such as overfishing and damage caused by ship anchors.

"It is important to note that these declines did not happen overnight, they did not happen during the last three years," said Andrews.

"The degradation has happened over the past several decades and recovery may require similar time frames. Although there are a number of measures that we can implement in order to promote conservation, there are no quick fixes."

The NOAA report was based on reef monitoring in 15 areas in the Atlantic and Pacific.

It said that reefs near populated areas tended to suffer more intense threats due to coastal development and recreational activities like boating, diving and fishing, but even remote reefs were affected by climate change.

Reefs in the vast Pacific Ocean tended to be more resilient, with a greater diversity of both coral and fish, NOAA scientists said. While Pacific reefs had been able to start recovering from worldwide bleaching in 1998, Caribbean reefs had not.

Human activity had not just left Caribbean reefs battered, but also pretty tame in terms of marine life, said Alan Friedlander, a NOAA marine biologist based in Hawaii.

"When you dive in remote parts of the Pacific you really feel like an intruder, like you don't belong there and the big guys let you know. You feel way down the food chain," he said.

Acidity of Ocean Corals Rising Unexpectedly; Exact Cause Unknown

Jack Rosebro

July 8, 2008

An unexpected spike in the acidity of coral structures may indicate that the world's oceans are "acidifying"—becoming less alkaline—much more rapidly than scientists had previously thought.

New coral evidence suggesting the oceans may have acidified by almost a third of a unit of pH as a result of anthropogenic CO2 was presented yesterday at the International Coral Reef Symposium (ICRS) in Fort Lauderdale, Florida by Australian earth scientist Malcolm McCulloch of the ARC Centre of Excellence for Coral Reef Studies and Australian National University.

> *We've measured an increase of almost 0.3 of a pH unit in acidity in corals—which is much higher than has been detected so far in ocean water itself. This suggests either that the corals are somehow amplifying the effect—or else that we may have gravely underestimated the rate at which the burning of fossil fuels is turning the oceans acidic.*
>
> —Malcolm McCulloch

Acidifying oceans may prevent about a third of sea life, which depends on an alkaline environment, from forming their shells and skeletons. As oceans become saturated with CO2, their ability to sink carbon from the atmosphere is expected to decline, leaving more CO2 in the atmosphere, and accelerating climate change.
Recent data has supported that hypothesis; most notably one Australian-American joint research project which found that the world's oceans warmed and rose at a rate 50% faster in the last four decades of the 20th century than previously thought. A paper published on 4 July in Science also suggested that avoiding damage from ocean acidification may require deeper cuts in CO2 emissions than those which would mitigate climate change (earlier post).

> *We are unsure of the explanation for why the corals are showing these high levels of acidification— but we need to find out, and quickly. Clearly something is happening in the oceans, and we need to understand whether it is a major problem or not.*
>
> —Malcolm McCulloch

Coralline algae, which binds the faces of coral reefs to withstand the ocean's currents, may be more seriously affected than the coral itself, causing reefs to crumble away. McCulloch noted that coccoliths—marine plankton with chalky skeletons, which are crucial components of the ocean food chain—could at first benefit from rising ocean acidity that favors organisms which use bicarbonate, rather than carbonate, to form skeletons. However, further increases in acidification would eventually shut down those mechanisms as well.

Prof. McCulloch also told the ICRS meeting that there is a growing scientific consensus that sea levels are rising faster than expected, and expressed concern about tipping elements.

> *We know that sea levels have been rising due to thermal expansion, but there is now mounting evidence that the melting of the Greenland and Arctic icecap could lead to the same sort of catastrophic deglaciation as occurred at the end of the last Ice Age, several thousand years ago when the climate warmed dramatically.*
>
> —Malcolm McCulloch

Prof. McCulloch said there are fossil coral reefs at Margaret River, Western Australia, which now lie about three to four meters above the current sea level. These date back to this era of higher sea levels, and provide an indicator of how high they rose when the major ice caps last melted extensively.

Regarding Henry

PROTECT CORAL REEFS BEFORE IT'S TOO LATE!

By Henrylito D. Tacio

July 8, 2008

Fort Lauderdale, Florida -- Twenty percent of the world's coral reefs have already been destroyed, and another 24 percent may be lost within our lifetimes if human impacts on corals are not reduced.

For instance, while 69 percent of coral reefs in the Pacific region are in "good" or "excellent" condition, only 25 percent of Caribbean reefs are faring well. "There are urgent needs to reduce the threats facing coral reefs," urged Jenny Waddell, a marine biologist at the National Oceanic and Atmospheric Administration (NOAA).

Currently, coral reefs provide more than US$15 billion worth of fisheries and tourism services around the world. In Asia alone, one billion people depend on fish caught in coastal waters dominated by coral reefs.

"Coral reefs are under siege from many threats, but climate change is among the most serious risks to their survival," said Dr. Ellen Pikitch, executive director of the Pew Institute for Ocean Science.

Combined with overfishing, disease, pollution, and habitat destruction, warming oceans caused by climate change have contributed to the death of corals worldwide, even on some of the world's most protected reefs.

Corals are simple animals that thrive within a narrow temperature range. They depend on partnerships with microscopic algae to help them thrive in shallow tropical seas. These symbiotic algae live inside the corals and provide them with energy from photosynthesis, allowing corals to build their slow-growing limestone skeletons. However, rising temperatures caused by global warming disrupts this partnership, resulting in mass "bleaching" events in which coral lose their colorful algae and often die.

But there is good news. Dr. Andrew C. Baker, which has recently been awarded the prestigious 2008 Pew Fellowship in Marine Conservation, is planning to develop novel and groundbreaking techniques to enhance the thermal tolerance and help them survive dangerously warming oceans around the world.

Dr. Baker's initial breakthrough discovery that reef corals may be able to withstand climate change by switching algal partners was published in the journal *Nature* and hailed by *Discover* magazine as one of the "Top 100 Science Stories of 2001."

"We need to redouble our efforts to protect this critical resource," said NOAA administrator retired Navy Vice Admiral Conrad C. Lautenbacher Jr. urged during the launching of *The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008.*

Already, some organizations and businesses are responding to the call. Too Precious to Wear is one of them. "Corals inspire me and many others with their beauty," said Julia Louis-Dreyfuss, founding partner of the organization.

The United States, as the world's largest documented consumer, imported more than 26 million pieces from 2001 to 2006. The American market is responsible for 80 percent of the live coral taken from reefs (more than 400,000 pieces a year).

"Corals simply are too precious to wear," deplored Dawn M. Martin, president of SeaWeb. "They belong in their natural ocean habitat, where they contribute to the survival of thousands of other marine species. Consumers and the fashion industry can play an important role in the ocean's recovery by simply choosing products that do not harm the ocean."

In a press conference, NOAA's Waddel reported that marine protected areas are one of the most effective methods in conserving biodiversity and fisheries, "but they are limited in number and size, and overfishing and the degradation of habitats by alien algae are of growing concern."

She added, however, that there is cause for hope. "We now understand how reefs are being degraded so we can take action to better protect them. There is increasing use of marine protected areas, and that is encouraging."

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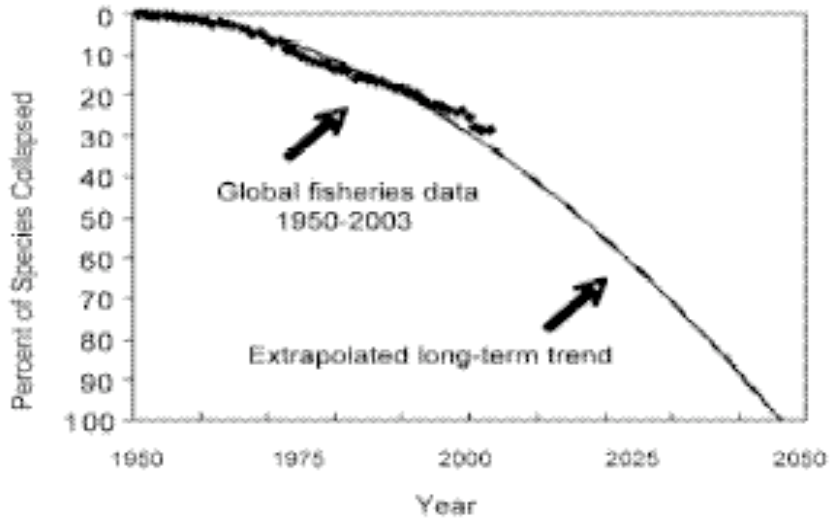
Fish catches declining faster than realised

July 8, 2008

Fish catches are declining around the world faster than had previously been realised, claims the Vancouver-based Sea Around Us Project, which assesses the impact of fisheries on the world's marine ecosystems. The available statistics are not telling the real story, they have found. Contributing Editor Henrylito Tacio reports from the 11th International Coral Reef Symposium, in Fort Lauderdale, Florida.

The reason for this is that global fish catch are primarily tracked in the context of trade. Most of the data collected are for tuna, shrimp, lobster and other luxury commodities and excluded those mostly eaten by people and those harvested within three miles of the coasts.

Global loss of seafood species. Shown is the current trend in fisheries collapses, and extrapolated to 2050.



Global loss of seafood species. Shown is the current trend in fisheries collapses, and extrapolated to 2050.

As a result, there is underreporting of data submitted to the UN Food and Agriculture Organization (FAO) from all over the world. This was the findings of the new study released by the project during the Symposium.

The costs of fishery collapses – foregone revenue, lost jobs and depleted biodiversity –

is extremely high. For instance, up to 1998, the Atlantic cod collapse cost at least US$6 billion, plus incalculable losses to biodiversity, lifestyle and culture.

Profound changes in fisheries management policies are required to reverse these trends, the scientists say. Submitting correct statistics on the real status of the fishing industry in every country is good starting point.

Global problem

"We discovered one nation underreporting its fisheries catches and then realised that this wasn't an isolated case but a problem globally," said Dr. Daniel Pauly, the project's principal research investigator. "Everywhere we look, the number of fish being taken from reefs is greater than reported."

The study investigated and reconstructed the actual catches from 1950-2004 for twenty small island countries in tropical Pacific. "The unreported catches were as great as reported catches, and in some cases were nearly 17 times higher than reported catches," say the project authors in a press statement.

Herring fishing in the Baltic Sea. © Greenpeace/NoelMatoff

Catch reconstruction was done by Dr. Dirk Zeller with the help from researcher Jennifer Jacquet. They found out that the trend for domestic catches in some Pacific island nations "has been declining by between 54 per cent and 86 per cent since 1950."

"This decrease is likely due to localized overfishing near major population centers brought on by increasing population rates and by changing diet preferences," they say.

Ms. Jacquet also cited the case of underreporting in Africa. In Mozambique, catch reconstruction revealed that fish catches were more than six time greater than reported data. In Tanzania, catches in Zanzibar (an island off the coast) were not included which accounted for 30 per cent of the country's total catches.

Small-scale tropical fisheries are culturally important and provide a secure source of protein for most people living in developing countries. More often than not, reliable yearly estimates of catches in these countries are hard to come by, which could explain why catch accounting by most of these countries is incomplete.

"Given the increasing stresses of climate change and overfishing, however, countrywide estimates of total catches need to become an even greater priority," the press statement says.

"It's important to know the complete picture when we talk about how many fish are taken every year from the oceans," explained Dr. Zeller, a research fellow with the project's research division. "Since we're finding that small-scale fisheries are greater contributors to overall catches than we previously thought, we need to more closely monitor commercial overfishing so that coastal communities around the globe have the income and food sources that they need."

For further details, visit www.seaaroundus.org

THE DAILY GUARDIAN Western Visayas' Most Read and Respected

Global fish catch declining

By Henry Tacio

FORT LAUDERDALE, FLORIDA – Fish catches are declining globally, claims the Vancouver-based Sea Around Us Project, which assesses the impact of fisheries on the world's marine ecosystems.

The costs of fishery collapses – foregone revenue, lost jobs and depleted biodiversity – have become unacceptable. For instance, up to 1998, the Atlantic cod collapse cost at least US$6 billion, plus incalculable losses to biodiversity, lifestyle and culture.

Profound changes in fisheries management policies are required to reverse these trends. Submitting correct statistics on the real status of the fishing industry in every country is good starting point.

Most statistics available are not the real pictures. The reason for this is that global fish catch are primarily tracked in the context of trade. Most of the data collected are for tuna, shrimp, lobster and other luxury commodities and excluded those mostly eaten by people and those harvested within three miles of the coasts.

As a result, there is underreporting of data submitted to the UN Food and Agriculture Organization (FAO) from all over the world. This was the findings of the new study released by the project during the 11th International Coral Reef Symposium held here.

"We discovered one nation underreporting its fisheries catches and then realized that this wasn't an isolated case but a problem globally," said Dr. Daniel Pauly, the project's principal research investigator. "Everywhere we look, the number of fish being taken from reefs is greater than reported."

The study investigated and reconstructed the actual catches from 1950-2004 for twenty small island countries in tropical Pacific. "The unreported catches were as great as reported catches, and in some cases were nearly 17 times higher than reported catches," said the project in a press statement.

Catch reconstruction was done by Dr. Dirk Zeller with the help from researcher Jennifer Jacquet. They found out that the trend for domestic catches in some Pacific island nations "has been declining by between 54 percent and 86 percent since 1950."

"This decrease is likely due to localized overfishing near major population centers brought on by increasing population rates and by changing diet preferences," the press

statement said.

Ms. Jacquet also cited the case of underreporting in Africa. In Mozambique, catch reconstruction revealed that fish catches were more than six time greater than reported data. In Tanzania, catches in Zanzibar (an island off the coast) were not included which accounted for 30 percent of the country's total catches.

Small-scale tropical fisheries are culturally important and provide a secure source of protein for most people living in developing countries. More often than not, reliable yearly estimates of catches in these countries are hard to come by, which could explain why catch accounting by most of these countries is incomplete.

"Given the increasing stresses of climate change and overfishing, however, countrywide estimates of total catches need to become an even greater priority," the press statement urged.

"It's important to know the complete picture when we talk about how many fish are taken every year from the oceans," explained Dr. Zeller, a research fellow with the project's research division. "Since we're finding that small-scale fisheries are greater contributors to overall catches than we previously thought, we need to more closely monitor commercial overfishing so that coastal communities around the globe have the income and food sources that they need."

INTER PRESS SERVICE
NEWS AGENCY
THE STORY UNDERNEATH

ENVIRONMENT: Global Fish Catches Vastly Underestimated

By Stephen Leahy

July 8, 2008

A school of spadefish, considered one of many overfished groups. Credit:Chuck Savall

FORT LAUDERDALE, U.S., Jul 8 (IPS) - Fisheries catches in tropical island nations may be as much as 17 times higher than officially reported, according to a new study released Tuesday.

"The underreporting of fish catches is of such a magnitude it boggles the mind," said Daniel Pauly, a renowned fisheries expert at the University of British Columbia (UBC).

All of the 20 small Pacific island countries in the study underreported catches, mainly because they did not count the catch by small-scale local fishers. This is not unique -- even the U.S. does not report local and recreational fishing statistics, Pauly told IPS at the 11th International Coral Reef Symposium (ICRS) in Fort Lauderdale, Florida Tuesday.

A different study also released Tuesday estimates that the unreported recreational fish catch in the Hawaiian Islands doubles the size of the official catch. It also concluded that 75 percent of reef fishes in the main Hawaiian Islands are depleted or in critical condition because of overfishing.

Pauly and other fish experts long suspected that many nations do not measure small-scale and recreational fisheries. The Sea Around Us Project located at UBC is the first attempt to reconstruct actual catches between 1950 and 2004.

"Even though small-scale fisheries feed many people in poor countries, their contribution goes unreported," Pauly said.

The Food and Agriculture Organisation (FAO) in Rome collects and compiles global fishery data. However, countries provide the information on a voluntary basis and it is not verified. And very often the data is supplied by the countries' foreign affairs or export

development departments and not the fisheries agency and represents fish exports, not actual fish catch, Pauly said.

However, this grossly imperfect data is the only global fishery data and is what scientists, policy makers, conservationists and others rely on to make decisions such as catch quotas and licensing -- often with serious consequences.

Without fish, many poor communities have to import food, and this is particularly true for the small Pacific islands in the study, said Dirk Zeller of the Sea Around Us Project. "Local fish are crucial to food security but fisheries management is based on FAO data that doesn't reflect this reality," Zeller said.

Since small-scale fishers take far more fish than anyone ever realised, it is critical to "more closely monitor commercial overfishing so that coastal communities around the globe have the income and food sources they need".

Zeller acknowledges that the study is not quantitative, representing more of an informed estimate, but one that is deliberately on the conservative side. However, it is far better than the FAO data that ignores small-scale fisheries entirely, he said.

FAO statistics show that the average person in the east African country of Mozambique, with a coastline of 2,500 kms, consumed a mere three kilogrammes of fish a year, when the global average is 16 kilogrammes, said Jennifer Jacquet a researcher at the Sea Around Us.

"Local subsistence fishing was not measured," Jacquet said in an interview.

When it was measured in some areas, fish catch was six times greater. However, Mozambique had already sold fishing licenses to shrimp trawlers based in the European Union (EU) based on the faulty data that ignored the catch by small-scale fishers and the importance of this catch for food security.

The EU trawlers have an enormous by-catch that is discarded, with major potential impacts on local fishers, she said: "It's a reverse Robin Hood scenario: stealing from the poor and giving to the rich."

Well-meaning development aid aimed at fisheries in many poor countries ends up paying for processing facilities that mainly benefit commercial fisheries such as tuna. Those fish are rarely consumed locally and instead are exported to rich countries, said Pauly.

"The profits often end up in a Swiss bank account," he said.

It is far better to support small-scale fisheries to survive and protect local reefs because that brings real economic development where it is needed. Fish catches are declining

so rapidly that many can no longer afford to fish and will end up fleeing to cities or to rich countries as illegal immigrants, he said.

The Spanish fishery is a case in point. The EU subsidises the Spanish commercial fishery in the Atlantic but few of the fishers working on the trawlers are Spanish and the fish is sold to Japan and northern Europe. By contrast, the small-scale fishers in the Mediterranean Sea are locals who received little help and are declining in numbers. A sustainable approach would be to ban trawling and support local fishers because it would bring far more benefits to Spain, Pauly said.

Trawlers are going out of business because of the high cost of fuel. However, to a large extent, the damage to global fisheries has already been done.

"Small-scale fishers are more fuel efficient and can be sustainable if reefs are protected," Pauly stressed.

(END/2008)

Caribbean coral reefs only 25 percent healthy: report

July 8, 2008

Global warming and pollution are decimating coral reefs around the world, with only 25 percent in good health in the Caribbean Sea, US experts warned Tuesday.

In other areas of the world such as the Pacific basin, nearly 70 percent of the coral reefs are either thriving or in good condition, the National Oceanic and Atmospheric Administration (NOAA) said in a report.

NOAA told the International Coral Reef Symposium in Fort Lauderdale, Florida, that nearly half of coral reef ecosystems in the United States are in poor or barely passable condition.

"This is absolutely a call to action," said NOAA Coral Program director Kacky Andrews.

Th is undated image courtesy of the Florida Fish and Wildlife Commission shows elkhorn coral. Global warming and pollution are decimating coral reefs around the world, with only 25 percent in good health in the Caribbean Sea, US experts warned Tuesday.© 2007 AFP

To reverse the deterioration and lessen the threat to coral reefs, she strongly suggested curbing emissions of carbon dioxide and other greenhouse gases and the use of fertilizer, prevent damage from anchors and stop the sale of coral for jewelry.

PLENTY
THE WORLD IN GREEN

Increasingly acidic ocean waters are causing coral demise, beach erosion, and biodiversity loss

Most coral reefs could die by the end of the century

By Victoria Schlesinger

July 8, 2008

Photo courtesy of Science Magazine/ Ove Huegh-Guldberg, University of Queensland

Between pollution, disease, and habitat destruction, coral reefs have it rough. But greenhouse gas emissions may be the ecosystems' deadliest stressor yet. While scientists have worried about sea temperature rise for some time, only recently have they focused on another consequence of excess carbon dioxide: ocean acidification. The process may lead to the death of most coral reefs by the end of this century, according to a study published in the January issue of Science.

Often called the rainforests of the sea, coral reefs are the ocean's most biologically diverse ecosystems, supporting roughly 25 percent of marine life and more than 4,000 species of fish. The United Nations Environment Programme estimates that one square

kilometer of coral reef holds a value of up to $600,000 per year by drawing tourists, supporting fisheries, and helping mitigate beach erosion by breaking waves. Coral reef destruction represents a huge economic and biodiversity loss.

“Coral reefs are always in a balance,” says Mark Eakin, a coauthor of the study and National Oceanic and Atmospheric Administration reef expert. “Acidification makes it harder for the building forces to build and easier for the eroding forces to erode.”

The ocean naturally absorbs about one-third the total amount of CO2 pumped into the atmosphere; as concentrations of the gas increase in the air, so does the amount taken up by the sea. When CO2 dissolves in water, carbonic acid forms—the same mild acid found in your Blue Sky soda. The compound naturally releases hydrogen protons, making the ocean more acidic, or lowering its pH (see illustration on next page). The sea’s pH has dropped by 0.1 units over the past century.

Carbonic acid dissolves the shells of mollusks and other animals, and also inhibits shells from forming. Additionally, the excess hydrogen protons draw calcium carbonate, or chalk, from the ocean, harming organisms as small as plankton and as vast as coral reefs, which absorb the compound and turn it into shell.

“There’s actually less of the material needed to build, so it slows or leads to malformed shells,” says Scott Doney, a geochemist at Woods Hole Oceanographic Institution.

Climate change is also turning up the temperature of our oceans. It has risen 0.74°C in the last 100 years. For reefs, warmer water stresses coral polyps, causing them to kick out the algae that live in their tissue and give them color—a process called“coral bleaching.” Scientists began reporting bleaching events around the world in the early 1980s. The most severe took place a decade ago in the western Indian Ocean when 46 percent of the region’s coral was impacted, igniting a decline of the whole ecosystem.

To draw the world’s attention to these threats, the International Coral Reef Initiative—a partnership among governments, nonprofits, and NGOs—declared 2008 the International Year of the Reef. The group aims to promote the importance of reefs, emphasizing that these diverse ecosystems are already on the brink of extinction. Ocean acidification is literally like pouring acid on the wound.

“Even if we stop all CO2 emissions tomorrow, it will still impact coral reefs,” Eakin says. “The best we can do both for bleaching and ocean acidification is improve the resilience of coral reef communities by getting rid of other local stresses—make the reefs healthier so they can best survive while the warming takes place.”

PHYSORG.COM
SCIENCE : PHYSICS : TECH : NANO : NEWS

Scientists discover new reefs teeming with marine life in Brazil

July 8, 2008

Scientists announced today the discovery of reef structures they believe doubles the size of the Southern Atlantic Ocean's largest and richest reef system, the Abrolhos Bank, off the southern coast of Brazil's Bahia state. The newly discovered area is also far more abundant in marine life than the previously known Abrolhos reef system, one of the world's most unique and important reefs.

Researchers from Conservation International (CI), Federal University of Espírito Santo and Federal University of Bahia announced their discovery in a paper presented today at the International Coral Reef Symposium in Fort Lauderdale. "We had some clues from local fishermen that other reefs existed, but not at the scale of what we discovered," says Rodrigo de Moura, Conservation International Brazil marine specialist and co-author of the paper. "It is very exciting and highly unusual to discover a reef structure this large and harboring such an abundance of fish," he adds.

The Abrolhos Bank is considered one of the world's most important reefs because it harbors a high number of marine species found only in Brazil including species of soft corals, mollusks and fish found only in the Abrolhos shelf. The Mussismilia coral genus, a relic group remnant of an ancient coral fauna dating back to the Tertiary period that went extinct long ago elsewhere in the Atlantic, is the dominant coral of the Abrolhos reef, which is structured in unique mushroom-like shapes.

Researchers mapped the new reef structures in areas ranging from nine to 124 miles (15 to 200 km) off the coast and in depths ranging from 60 to 220 feet (20 to 73 meters) using a side scan sonar which produces a three-dimensional map of the marine seabed.

"Due to their relative inaccessibility and depth, the newly discovered reefs are teeming with life, in some places harboring 30 times the density of marine life than the known, shallower reefs," says Guilherme Dutra, Conservation International's director of marine programs in Brazil. "That's the good news. The bad news is that only a small percentage of marine habitats in the Abrolhos are protected, despite mounting localized and global threats."

Localized threats include over-fishing, coastal development and large scale land conversion to agriculture, shrimp farms, pollution, oil drilling and sedimentation. Global threats include climate change and ocean acidification.

Researchers acknowledged the conservation effectiveness of the present network of Marine Protected Areas in the Abrolhos. But it is very limited and not nearly enough vis-à-vis the mounting threats, they added.

The next phase of the Abrolhos project will be to study the marine life in the new reef structures.

"These studies reveal the complexity and connectivity of the reefs in the Abrolhos region and will support conservation planning," states Guilherme Dutra.

Source: Conservation International

Caribbean coral reefs only 25 percent healthy: report

July 8, 2008

A colorful fish passes by a coral in the sea

MIAMI (AFP) — Global warming and pollution are decimating coral reefs around the world, with only 25 percent in good health in the Caribbean Sea, US experts warned Tuesday.

In other areas of the world such as the Pacific basin, nearly 70 percent of the coral reefs are either thriving or in good condition, the National Oceanic and Atmospheric Administration (NOAA) said in a report.

NOAA told the 11th International Coral Reef Symposium in Fort Lauderdale, Florida, that nearly half of coral reef ecosystems in the United States are in poor or barely passable condition.

"This is absolutely a call to action," said NOAA Coral Program director Kacky Andrews.

To reverse the deterioration and lessen the threat to coral reefs, she strongly suggested curbing emissions of carbon dioxide and other greenhouse gases and the use of fertilizer, prevent damage from anchors and stop the sale of coral for jewelry.

"In the Caribbean, parts of Jamaica, Dominican Republic and Mexico that have been strongly impacted by hurricanes in the past few years, large communities of coral have been lost," Diego Lirman, a University of Miami Rosentiel School of Marine and Atmospheric Science expert, told AFP.

He said the Caribbean region, which sustains only 60 or 70 species of coral compared to more than 500 in the Pacific, "has lost a large part of its most ancient corals, which ... can be more than 500 years old and make up the reef's basic structure."

While reports indicate a worldwide reduction in coral reef covering, in the Caribbean the problem is compounded by the reefs' increasingly slow rate of recovery, Lirman said.

"In some places protected zones have been set aside, but the fact is many countries lack the means to monitor them -- there are no patrols in the area and no real measure of control," the expert said.

Nonetheless, he said the University of Miami has a coral reef recovery program.

"We extract some corals, help them to grow and get stronger and return them to their communities in better condition so they can reproduce, or we take them to places where (coral reefs) have died off."

Development and overfishing also pose a threat to coral reefs, said Chantal Collier, with the Florida Department of Environmental Protection.

"In Florida, which has the third longest reef system in the world, coastal population has grown by 64 percent in the past two decades, putting pressure on the reefs from development," Collier said.

"Fishing is an activity of major concern in Florida, which is known as the fishing capital of the world," he added, noting that fish keep coral reefs healthy by cleaning them of algae that can overgrow and choke off nutrition.

The five-day Coral Reef Symposium ending Friday brings together some 2,500 scientists, conservationists and government officials from 114 countries. It is held every four years.

ScienceDaily
Your source for the latest research news

New Coral Reefs Teeming With Marine Life Discovered In Brazil

July 9, 2008

ScienceDaily (July 9, 2008) — Scientists have announced the discovery of reef structures they believe doubles the size of the Southern Atlantic Ocean's largest and richest reef system, the Abrolhos Bank, off the southern coast of Brazil's Bahia state. The newly discovered area is also far more abundant in marine life than the previously known Abrolhos reef system, one of the world's most unique and important reefs.

Black grouper (Mycteroperca bonaci), Marine, Abrolhos, Brazil. (Credit: Copyright RB Francini-Filho)

Researchers from Conservation International (CI), Federal University of Espírito Santo and Federal University of Bahia announced their discovery in a paper presented today at the International Coral Reef Symposium in Fort Lauderdale. "We had some clues from local fishermen that other reefs existed, but not at the scale of what we discovered," says Rodrigo de Moura, Conservation International Brazil marine specialist and co-author of the paper. "It is very exciting and highly unusual to discover a reef structure this large and harboring such an abundance of fish," he adds.

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Localized threats include over-fishing, coastal development and large scale land conversion to agriculture, shrimp farms, pollution, oil drilling and sedimentation. Global threats include climate change and ocean acidification.

Researchers acknowledged the conservation effectiveness of the present network of Marine Protected Areas in the Abrolhos. But it is very limited and not nearly enough vis-à-vis the mounting threats, they added.

The next phase of the Abrolhos project will be to study the marine life in the new reef structures.

"These studies reveal the complexity and connectivity of the reefs in the Abrolhos region and will support conservation planning," states Guilherme Dutra.

The studies are part of the Marine Management Area Science Program coordinated by CI with the participation of research institutions around the world, and supported by the Gordon and Betty Moore Foundation and individual donors.

ISLANDS BUSINESS

Solomons lead trade in baby lobsters, shrimps

July 9, 2008

Islands Business Exclusive

“These baby lobsters and shrimps are being harvested in a very eco-friendly way and the certification will confirm this,” Dr Clua told islandsbusiness.com inside CRISP’s booth in the exhibition hall of the 11th International Coral Reef Symposium currently underway in this American city.

Fort Lauderdale, Florida –----- Exporting baby lobsters and shrimps for the booming aquarium trade is to be promoted around the islands of the Pacific. Behind the move is the Noumea-based Coral Reef Initiatives for the Pacific Initiatives (CRISP), which is funded by the French Government as well as other international NGOs like Conservation International, WWF and the United Nations Foundation. CRISP’s coordinator Dr Eric Clua told islandsbusiness.com that harvesting of baby lobsters and shrimps has been going on at the World Fish Centre in Gizo in the western province of the Solomon Islands.

“We have been testing this on a low scale in Gizo for the last three years,” said Dr Clua. “Now we are in a position to export the concept to other islands of the Pacific.” Using nets and sunken coconut trunk traps, baby lobsters and shrimps are harvested, sorted and packed in oxygen filled plastic bags. These are then flown out of Gizo and sold in the aquarium market overseas for US$1 each. With the help of CRISP working out from the Secretariat of the Pacific Community headquarters in New Caledonia, eco-certification is being sought for the trade.

“These baby lobsters and shrimps are being harvested in a very eco-friendly way and the certification will confirm this,” Dr Clua told islandsbusiness.com inside CRISP’s booth in the exhibition hall of the 11th International Coral Reef Symposium currently underway in this American city. “We also believe the method of harvest is sustainable and islanders are fetching a good price for their efforts.” Apart from lobsters and shrimps, CRISP is also promoting the eco friendly harvesting of baby fish also for the aquarium business. At his exhibition booth, Dr Clua is also demonstrating two recent initiatives of CRISP – Reef Base Pacific, which is a DVD containing images and information of coral reefs of the 22 SPC-member countries in the Pacific. The other

DVD is called Pacific Atlas which not only provides images of allthe islands of the Pacific, but also gives geographical features of the islands and their coral reefs.

Los Angeles Times | National

Hawaiian Islands' reef fish declining, study finds

Reefs in danger

By Kenneth R. Weiss, Los Angeles Times Staff Writer

July 9, 2008

Rick Loomis / Los Angeles Times
A researcher counts fish near a coral reef at Palmyra Atoll in the central Pacific.

Scientists blame overfishing for the problem, which affects 75% of the species. Subsistence fishermen in coastal communities rely on the fish to feed their families.

Sharks, jacks, parrot fish and other colorful reef fish are quickly disappearing from coral reefs encircling the Hawaiian Islands, federal scientists reported Tuesday.

The scientists blamed overfishing for the steep decline, which affects three-quarters of the species once commonly found on coral reefs, delighting snorkeling tourists and feeding subsistence fishermen in Hawaii's coastal communities.

Many of these fish, ecologists say, are key to maintaining healthy coral reefs because they keep reefs clean by grazing on algae that can quickly overgrow the stony corals and cause them to collapse.

Alan Friedlander, a federal fisheries ecologist, said that Hawaii still had relatively healthy reefs. "So everything hasn't collapsed yet," he said. "But we need to protect healthy reefs, because it's so much easier and safer to conserve now than it is to try to rebuild later."

The results of the study were released at the International Coral Reef Symposium in Fort Lauderdale, Fla. Nearly 3,000 scientists, managers and conservationists have congregated there to pore over the latest science and wrestle with ways to protect the world's coral reefs, which are in a state of steep decline.

Many prominent scientists think that overfishing represents one of the greatest challenges to maintaining and restoring healthy coral reefs.

Daniel Pauly, director of the University of British Columbia's Fisheries Centre, pointed out Tuesday that international authorities and local governments on Pacific island nations had little understanding of how many fish were being removed from coral reefs by small-scale subsistence fishermen.

For the most part, catch data compiled by American Samoa and other such island nations do not include all the small-boat fishermen who paddle or motor out to catch fish for themselves and their families. Comparing census data of per-person fish consumption and other sources, Pauly and his team of researchers discovered that in some cases the unreported catches were 17 times higher than reported catches. On average, they were at least twice as high.

Reconstructing a clearer picture of historic catches, Dirk Zeller and Jennifer Jacquet at the Fisheries Centre found that domestic catches had declined 54% to 86% since the 1950s.

This finding is important, Pauly said, because such catch data help determine if countries should sell fishing rights to foreign fishing fleets. If the local reliance on fish is underestimated, such deals can come at the expense of an important local source of protein.

Coral reef fisheries, Pauly said, are "very important because they are supporting millions of people in the developing world." He said that countries and the United Nations' Food and Agriculture Organization needed to pay attention to these unreported

catches to ensure the food security of isolated islands struggling with rising prices for imported food as fuel costs escalate.

The study also found that Hawaii's unreported recreational fisheries for reef fish and deep-dwelling bottom fish was equivalent to the total reported commercial catch.

"Overfishing is often disputed in Hawaii and elsewhere because catch data is underreported or spotty," Friedlander said. The study, conducted by Friedlander and his colleagues from the Oceanic Institute and the National Oceanic and Atmospheric Administration's biogeography branch on Oahu, got around this problem by diving into the water and meticulously counting fish.

Teams of divers looked at 55 species of fish found on coral reefs around the main Hawaiian Islands as well as the remote and largely un-fished northwestern Hawaiian Islands, which lie hundreds of miles north and west of Kauai.

Comparing the fish counts at both places, the divers determined that 75% of the species around the main islands, such as Oahu, Maui and the Big Island, were in critical condition or depleted. Another 11% were below desirable levels.

Friedlander said Hawaii would be well served by tightening fishing regulations and setting aside protected no-fishing reserves to conserve coral reefs, helping to ensure that reef fish don't disappear for future generations.

"Probably in Hawaii, more than anywhere else in the United States, people rely on fish to feed themselves and their families," Friedlander said.

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KHNL 8
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LIVE • LOCAL • LATE BREAKING

Coral concerns for our waters

By Paul Drewes

July 8, 2008

WAIKIKI (KHNL) -- They help give Hawaii their world class surf breaks and provide ecosystems for water life.

But coral reefs across the country are in bad shape, according to a new study.

The study from the National Oceanic and Atmospheric Administration says half of all coral reefs in U.S. and its territories are in poor or just fair condition. That includes the ones here around the main Hawaiian Islands.

Now scientists hope this study is a wake up call to do something to help.

Take a trip under our waters, and the colorful fish and ocean life capture your eye. While many important corals are often overlooked.

But they shouldn't be.

"They give us our spectacular shores they give us our beaches. Everything we like about Hawaii gets down to the ocean. And that ocean relates to our coral reefs and we want to keep them healthy," says Mark Heckman with the Waikiki Aquarium.

Some of these slow forming corals only grow a half an inch a year.

They are important as a habitat for reef fish, but corals are in danger from natural disasters as well as man made ones. "The local threats are fishing related, over development related, pollution related, overuse and marine debris which is a significant threat along the Hawaiian archipelago," says Rusty Brainard, with the NOAA Marine Fisheries Service.

Hawaii is the most remote group of islands in the world, so one of the biggest threats here to our reefs is invasive species of fish and sea weeds.

Global warming is also becoming a hot topic for our oceans, threatening these easily damaged organisms.

One way to protect this resource is through education. At the Waikiki Aquarium kids and adults are learning about the care of corals. While researchers are also busy, spawning more of these critical critters so our future will be filled with these colorful polyps. "We can make changes in our lives even if there is degradation of corals we can slow it down, and locally bring back reefs if we get in there and care, and do our part," said Heckman.

NOAA has been studying reef ecosystems over the past ten years, and has seen a decline in the condition of our corals. In the past three years alone, a pair of corals, have been added to the threatened list of species because they are in such danger.

The New York Times

Corals, Already in Danger, Are Facing New Threat From Farmed Algae

By Christopher Pala

July 8, 2008

BUTARITARI, Kiribati — Off the palm-fringed white beach of this remote Pacific atoll, the view underwater is downright scary.

INVADERS Eucheuma algae picked off a coral reef in Butaritari, a Pacific atoll.

Corals are being covered and smothered to death by a bushy seaweed that is so tough even algae-grazing fish avoid it. It settles in the reef's crevices that fish once called home, driving them away.

Dead coral stops supporting the ecosystem and, within a couple of decades, it will crumble into rubble, allowing big ocean waves to reach the beach during storms and destroy the flimsy thatched huts of the Micronesians.

"We are catching less and less fish, and the seaweeds are fouling our nets," says Henry Totie, a fisherman and Butaritari's traditional chief, in an interview in his traditionally built house in the village near the blue-green lagoon.

The area affected, about four miles long and a mile wide, lies off the island's main village, an underwater examination showed. It looked strikingly similar to Kaneohe Bay in the Hawaiian island of Oahu, where the seaweed also has spread out of control.

“This is one of the most damaging seaweeds I have ever seen,” says Jennifer E. Smith of the National Center for Ecological Analysis and Synthesis at the University of California, Santa Barbara, who has studied the Hawaiian invasion for eight years. “If there is that much Eucheuma in Butaritari, it proves it can destroy a healthy reef as opposed to a degraded one like in Kaneohe.”

Moiwa Erutarem, the Butaritari representative of the fisheries ministry, said the biggest losses were being felt by the most vulnerable: those who use nets in the shallow coral table and do not have the boats required to fish farther away. Seafood is virtually the only source of protein in Butaritari, complemented by breadfruit and coconut.

This equatorial island of 4,000 people is the latest victim of a 30-year global effort to encourage poor people in the coastal areas of the tropics to grow seaweed that, while not edible, produces carrageenan, an increasingly sought-after binder and fat substitute used in the food industry, notably in ice cream.

Today, about 120,000 dry metric tons a year are produced, mostly in the Philippines and Indonesia, where the two main algae originate. Kappaphycus alvarezii is most desirable because of its high carrageenan content; Eucheuma denticulatum is less valuable but easier to cultivate.

Both were introduced in the past three decades to 20 countries around the world from Tonga to Zanzibar and the result in most of them has been failure or worse. The alga K. alvarezii invaded the Gulf of Mannar Biosphere Reserve in south India a decade after commercial cultivation began in nearby Panban. “No part of the coral reef was visible in most of the invaded sites, where it doomed entire colonies,” the journal Current Science has reported.

In the Pacific, for example, the two algae were introduced to 10 countries and are said to be commercially cultivated in three: Kiribati, the Solomon Islands and Tonga.

But in the case of Kiribati, interviews with seaweed officials in Tarawa, the capital of this nation of tiny islands sprinkled over a swath of ocean the size of India, reveal that since the first effort to cultivate algae in 1986, the industry has lost money almost every year and the farmers have shown little enduring enthusiasm for the crop.

In some places and times, low prices are blamed. In others, unreliable purchasers are. Then there are cultural factors. Some Pacific countries, like Kiribati, are populated by what ethnologists call nonconsumers: people who need just a little cash to get by and once that need is met, prefer to spend time with their family, go fishing or sleep.

There is also “pubusi,” (pronounced poo-boo-SEE) the local tradition in which one person can ask another for pretty much anything, using the magic word, and the other person has to hand it over or face public opprobrium.

“What’s the point of making money if you have to pubusi it all away?” says Kevin Rouatu, a stocky, cheerful former banker who runs the Atoll Seaweed Company in Kiribati.

This state-owned company was formed in 1991 to restart failed efforts by the fisheries ministry, advised by foreign consultants, to introduce seaweed farming in the 1980s. Today, after the algae were introduced to 10 islands in Kiribati, only one, Fanning in the Line Islands, is producing anything. So the government is giving up on the other nine and moving the seaweed company to Christmas Island, which is near Fanning Island and more than 2,000 miles from Tarawa.

“The government raised the price we pay to farmers to 60 cents a kilo so we lose 27 cents a kilo by the time we’ve shipped it to the processing plant,” which is 3,000 miles away in the Philippines, Mr. Rouatu said. “The government didn’t give us the difference last year, so we were only able to buy 100 tons, and the farmers are now stuck with 250 tons.”

In Butaritari, where seaweed farming ended two years ago, Reuera Redfern, a retired seaman who became the island’s top producer and then the seaweed company’s purchasing agent, estimates there is 6 to 10 dry tons’ worth of Eucheuma — the variety with less carrageenan — on the coral reefs today, and an unknown amount off Tarawa. Mr. Redfern said he was told it was also spreading in Abemama, another island in the Gilbert group.

Today, Mr. Totie, the Butaritari traditional chief, says the only way to prevent Eucheuma (which locals call seaweeda, since it has no local name) from destroying the entire lagoon is for the seaweed company to offer to buy it. “Then the people would go out and get it and it would be gone in a few months,” he said. “If they wait, the problem will just get worse.” Mr. Rouatu agrees that some sort of noncommercial purchase plan needs to be set up to save the Butaritari lagoon, perhaps with foreign aid.

In an interview, President Anote Tong recalled going fishing with Mr. Redfern, his school friend, and said he was aware of the problem. But he displayed little interest in solving it, saying vaguely that it required a “scientific solution” — which he could not define.

“Buying it is something we cannot afford,” he said. “If we got a grant for that purpose, maybe, but,” he added with a fleeting smile, “it may encourage cultivation.”

Dr. Smith argued that even if by world standards the damage caused by the alga is small, it adds a layer of stress to corals already dying fast because most of the algae-grazing fish that kept the reef ecosystem healthy have been eaten, leading to a much higher coral mortality when global warning sends water temperatures up. “Introduced species have had large impacts on marine ecosystems around the world,” she said. “We should avoid the intentional introduction of species that are known to harm coral, not promote it.”

In Hawaii, three kinds of algae were brought in during the 1970s by a professor of botany at the University of Hawaii, Max Doty, who developed the techniques of cultivation that were exported around the world. One species dominates Oahu's south and the two others, mostly Eucheuma, have spread to about half of the coral heads of Kaneohe Bay.

Celia Smith, the successor to the late Dr. Doty at the university, is now a leader in the effort to save the bay. "It's not easy," she said, for the seaweeds grow at a rate of 7 percent a week.

The university, state and Nature Conservancy devised Super Suckers, vacuum cleaners on powered catamarans that are sucking up 3,000 pounds of seaweed a day each. "At the current rate, we'll need 10 years to clean up the bay," says Brian Hauk, the state aquatic invasive species supervisor.

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Good news for reefs: giant coral structure found off Brazil

July 8, 2008

Amid a series of dire reports on the status of coral reefs, scientists announced the discovery of a reef off the southern coast of Brazil's Bahia state that doubles the size of the Southern Atlantic Ocean's largest and richest reef system, the Abrolhos Bank.

A report released yesterday by the National Oceanic and Atmospheric Administration (NOAA) shows that nearly half of U.S. coral reefs are in "poor" or "fair" condition. Image shows the west view from Siriba island. Photo by Charles Young.

The find was reported in a paper presented today by researchers from Conservation International (CI), Federal University of Espírito Santo and Federal University of Bahia at the International Coral Reef Symposium in Fort Lauderdale, Florida.

"We had some clues from local fishermen that other reefs existed, but not at the scale of what we discovered," says Rodrigo de Moura, a marine specialist with CI-Brazil and co-author of the paper. "It is very exciting and highly unusual to discover a reef structure this large and harboring such an abundance of fish."

The scientists used a side scan sonar — which produces a three-dimensional map of the sea floor — to map the new reef structures in waters ranging from nine to 124 miles (15 to 200 km) off the coast and at depths from 60 to 220 feet (20 to 73 meters).

"Due to their relative inaccessibility and depth, the newly discovered reefs are teeming with life, in some places harboring 30 times the density of marine life than the known, shallower reefs," said Guilherme Dutra, Conservation International's director of marine programs in Brazil. "That's the good news. The bad news is that only a small percentage of marine habitats in the Abrolhos are protected, despite mounting localized and global threats."

Localized threats include over-fishing, coastal development and large scale land conversion to agriculture, shrimp farms, pollution, oil drilling and sedimentation. Global threats include climate change and ocean acidification.

Coral reefs are besieged by a range of localized threats including coastal development, overfishing, sedimentation, pollution, over collection for the pet trade, oil and gas development, and over-use for recreational activities. On a global scale, reefs are vulnerable to rising temperatures, which cause bleaching, and ocean acidification, which causes changes in reef communities by making it more difficult for some corals to form carbonate skeletons that serve as their structural basis.

The new study urges the expansion of marine protected areas in the Abrolhos.

environment360
Opinion, Analysis, Reporting & Debate

Spread of Algae Farming Takes a Toll on Coral Reefs in Pacific

July 8, 2008

The commercial cultivation of algae — used as a binder and fat substitute in ice cream and other foods — has led to the spread of two kinds of seaweed that are smothering coral reefs in the Philippines, Indonesia, and other parts of the Pacific. Ten countries in the Pacific have had the two varieties introduced, but fluctuating demand and lax cultivation have allowed the seaweeds to infest reefs in Tonga, Kiribati, the Solomon Islands, and other places, where they invade the habitat of reef fish and kill the coral, threatening the livelihoods of subsistence fishermen. Meanwhile, the U.S. National Oceanic and Atmospheric Administration reports that nearly half of the coral reef ecosystems in the U.S. are in poor or fair condition, largely because of warming ocean waters. The report also said that roughly half of the Caribbean's corals have been badly damaged or destroyed by rising sea temperatures.

Scientists discover new reefs teeming with marine life in Brazil

Doubling the size of the southern Atlantic's largest reef system

July 8, 2008

Fort Lauderdale, FL (July 8, 2008) – Scientists announced the discovery of reef structures they believe doubles the size of the Southern Atlantic Ocean's largest and richest reef system, the Abrolhos Bank, off the southern coast of Brazil's Bahia state. The newly discovered area is also far more abundant in marine life than the previously known Abrolhos reef system, one of the world's most unique and important reefs, according to Eurekalert, the news service of the American Association for the Advancement of Science.

Researchers from Conservation International (CI), Federal University of Espírito Santo and Federal University of Bahia announced their discovery in a paper presented today at the International Coral Reef Symposium in Fort Lauderdale. "We had some clues from local fishermen that other reefs existed, but not at the scale of what we discovered," says Rodrigo de Moura, Conservation International Brazil marine specialist and co-author of the paper. "It is very exciting and highly unusual to discover a reef structure this large and harboring such an abundance of fish," he adds.

The Abrolhos Bank is considered one of the world's most important reefs because it harbors a high number of marine species found only in Brazil including species of soft corals, mollusks and fish found only in the Abrolhos shelf. The Mussismilia coral genus, a relic group remnant of an ancient coral fauna dating back to the Tertiary period that went extinct long ago elsewhere in the Atlantic, is the dominant coral of the Abrolhos reef, which is structured in unique mushroom-like shapes.

Researchers mapped the new reef structures in areas ranging from nine to 124 miles (15 to 200 km) off the coast and in depths ranging from 60 to 220 feet (20 to 73 meters) using a side scan sonar which produces a three-dimensional map of the marine seabed. "Due to their relative inaccessibility and depth, the newly discovered reefs are teeming with life, in some places harboring 30 times the density of marine life than the known, shallower reefs," says Guilherme Dutra, Conservation International's director of marine programs in Brazil. "That's the good news. The bad news is that only a small percentage of marine habitats in the Abrolhos are protected, despite mounting localized and global threats."

Localized threats include over-fishing, coastal development and large scale land conversion to agriculture, shrimp farms, pollution, oil drilling and sedimentation. Global threats include climate change and ocean acidification.

Researchers acknowledged the conservation effectiveness of the present network of Marine Protected Areas in the Abrolhos. But it is very limited and not nearly enough vis-à-vis the mounting threats, they added.

The next phase of the Abrolhos project will be to study the marine life in the new reef structures.

"These studies reveal the complexity and connectivity of the reefs in the Abrolhos region and will support conservation planning," states Guilherme Dutra.

e! Science News
Your daily dose of Eureka!

Scientists discover new reefs teeming with marine life in Brazil

July 8, 2008

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Source: Conservation International

Los Angeles Times | Local

Hawaiian Islands reef fish declining

Alice Short

July 8, 2008

Sharks, jacks, parrot fish and other colorful reef fish are quickly disappearing from coral reefs encircling the Hawaiian Islands, federal scientists reported Tuesday. The scientists blamed overfishing for the steep decline, which affects three-quarters of the species once commonly found on coral reefs, delighting snorkeling tourists and feeding subsistence fishermen in Hawaii's coastal communities. Times staff writer Kenneth R. Weiss reports:

Many of these fish, ecologists say, are key to maintaining healthy coral reefs because they keep reefs clean by grazing on algae that can quickly overgrow the stony corals and cause them to collapse. Alan Friedlander, a federal fisheries ecologist, said Hawaii

still has relatively healthy reefs. "So everything hasn't collapsed yet," he said. "But we need to protect healthy reefs, because it's so much easier and safer to conserve now than it is to try to rebuild later."

The results of the study, the most comprehensive examination of Hawaiian reef fish, were released at the International Coral Reef Symposium in Fort Lauderdale, Fla. Nearly 3,000 scientists, managers and conservationists have congregated there to pore over the latest science and wrestle with ways to protect the world's coral reefs, which are in a state of steep decline.

Many prominent scientists believe overfishing represents one of the greatest challenges to maintaining and restoring healthy coral reefs.

--Alice Short

Photo: Rick Loomis/Los Angeles Times

Coral decline to hit rich and poor

July 8, 2008

Bleached coral

Bleached coral The gradual disintegration of the world's coral reefs under climate change will have significant impacts on food supplies, international tourism, water quality and the safety of coastal communities.

Marine researchers at the International Coral Research Symposium (ICRS) in Fort Lauderdale, Florida, this week are exploring the longer term consequences of widespread loss of corals due to global warming and ocean acidification.

Chair of the Climate Change session, Professor Ove Hoegh-Guldberg of the ARC Centre of Excellence for Coral Reef Studies and The University of Queensland, says there is now convincing science coming through to indicate that reefs everywhere are in trouble.

"The evidence suggests reef systems are becoming more brittle, as a result of bleaching, disease and the effects of acidifying water," he said.

"This means we are likely to see more moonscape-like areas where reefs once used to be.

"This will be accompanied by a switch from the spectacularly colourful fish that people normally associate with reefs to much fewer and plainer ones."

The decline in reefs has importance for the 500 million people, mainly in developing countries, who depend on coral reefs for food and/or their livelihoods, while tourism industries in both developed and developing countries are likely to suffer, he said.

"The loss of reefs will also expose coastal communities, already facing rising sea levels, to a greater risk from storm surges and tsunamis as reefs currently provide a protective barrier against these," Professor Hoegh-Guldberg said.

"This will be accompanied by murkier, less productive waters as water quality suffers."

Professor Hoegh-Guldberg said researchers had found evidence that the rate at which coral reefs have been deteriorating and disappearing had accelerated in the past five years.

"For the past 30 years the loss has been between 1-2 percent of the world's coral per year," he said.

"The latest data suggest that the rate is now around 2 percent a year. This doesn't give us much time."

Recent evidence that sea levels are rising at nearly twice the rate predicted by the Intergovernmental Panel on Climate Change (IPCC) also poses a risk to coral reefs.

"Healthy corals can keep up with these sorts of sea level rises ï¿½ but some reefs which are damaged or weakened may be at risk of drowning, being thrust into depths where they can no longer get the light they need for photosynthesis," he said.

"All this aside, however, sea level on its own is not a major factor at this point."

At the same time, Professor Hoegh-Guldberg said that emerging evidence indicated that some corals had suffered a 20 percent reduction in their growth rates, which researchers considered to be due to the rising acidification of sea water, making it harder for them to build their chalky skeletons.

"This apparent drop in calcification is bound to be a real issue for discussion at the symposium," he said.

Most disturbing were recent claims by some atmospheric researchers that the level of C02 has been underestimated, and may be closer to 410 parts per million, than to the 385 estimated by the IPCC.

"If we continue on the pathway that we are on right now, we get to levels where you are looking at the total loss of reef structures worldwide," Professor Hoegh-Guldberg said.

"Under those conditions you just don't have corals — no corals. You also lose 50 percent of the fish and other species that live in and around corals.

"If we are already at 410ppm then we are facing a planetary emergency which should require urgent action to cap oil, gas and coal production worldwide immediately.

"We can't fool around with a situation that is rapidly spiraling out of control. We can't play with a situation that is so dangerous.

"You might say — well, that is big. Cap oil, gas and coal? But with no other solutions in front of us, then it would be foolhardy and unethical for us not to consider these urgent actions."

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projo.com
The Providence Journal

Faux coral is cool

July 9, 2008

By Samantha Critchell, Associated Press

NEW YORK Sea coral is blessed with wonderful colors, an intricate design and memories of the lapping ocean. It's no wonder that the worlds of fashion and home decor are in the midst of a love affair with it.

Some argue, though, that coral is too precious to wear.

"We want to discourage consumers from purchasing coral," says scientist Andrew Baker. "It's like ivory. It's a product of a living animal and the harvest of this item is unsustainable."

It's unsustainable not because new coral won't grow, he says, but because there are no limits on the use or sale of coral and it's being harvested at a rate that nature can't keep up with.

A faux red coral reef candleholder by Michael Aram.

"Dredging deep-sea coral forests is like clear-cutting the rainforest for sparrows: You're doing so much damage for something so small," says Baker, who is also an assistant professor at the University of Miami and the Pew Institute for Ocean Science.

Baker and a team from the Too Precious to Wear campaign, helmed by the nonprofit group SeaWeb that also took on the caviar and restaurant seafood causes, is lobbying to add pink and red corals, also known as Corallium, to the Convention of International Trade in Endangered Species, the global group that has put limits on rhinoceros horns, tiger feet and ivory. The coral had made it to the last round of negotiations in 2007, according to Baker, but failed to make it to the final list.

This week, the pressures corals are facing will be discussed at the International Coral Reef Symposium, which will be attended by more than 2,500 scientists, economists, conservationists and educators. The theme of the meeting is reefs for the future.

Baker doesn't want the world to wait. SeaWeb had noticed in the past couple of years that coral — real, faux and artistic interpretations — was all over the fashion runways and home-decorating magazines, explains Julia Robertson, program manager for Too Precious to Wear.

Around the same time, though, global warming, for which coral is considered a key indicator, had become a buzz topic, so marine-science groups saw an opportunity to raise public awareness, she says.

"We wanted to tap into the recognition of coral in fashion, design, jewelry and home decor. It's easier to talk to people when they know what you're talking about," Robertson says.

The campaign was launched earlier this year with partners including Pottery Barn, Tiffany & Co., Lela Rose, Vena Cava and Chantecaille Beaute.

Sylvie Chantecaille says her beauty company got involved about 18 months ago, largely because of her interest in the ocean.

"My whole family snorkels, dives. I grew up in the south of France diving and I have seen a change in the ocean over the years," she explains. "When you spend so much time under the water, you realize how amazing it is. I wanted to do something to protect it."

So Chantecaille developed Protect the Paradise compacts — one with eye shadow, another with powder — embossed with miniature ocean scenes to raise money for marine research and conservation. The project put Chantecaille in touch with other coral fans, including Baker, who taught her to appreciate their beauty from afar.

"I love the look of coral. They're so beautiful," Chantecaille says. "I used to be completely in love with coral jewelry so I totally understand the appeal."

But, she adds, "It's going to become like ivory. I used to wear ivory but I'd never wear it today now that I know what it means and what it symbolizes."

Tiffany stopped selling coral jewelry in 2003 and instead uses precious stones to replicate the exotic color and shapes found in the sea. The company brought the bulk of manufacturing in house, allowing it to examine sourcing, explains Linda Buckley, Tiffany vice president of public relations. While coral was not a huge part of the assortment, it set off some bells.

“Tiffany is closely associated with the natural world — it’s where we get our inspiration and materials,” Buckley says. She adds: “If you have healthy coral reefs, you have healthy oceans, healthy sea beds and healthy oysters — and we get our pearls from healthy oysters.”

(Buckley notes that Tiffany has also examined their use of cultured pearls and decided it doesn’t pose the same environmental risks as coral.)

“No one disputes coral as an object of beauty,” says Baker, “but it is more important as a habitat.”

Coral from shallow reefs, which are mostly a light color, tend to be used in interior decor, while the deep-sea corals — known as the “precious” black, pink and red corals from the Mediterranean Sea, Indian Ocean and the Pacific near Hawaii — are used for jewelry.

Yet, you only have to go to South Florida, where Baker is based, to find white coral being sold as a souvenir in kitschy shell shops, even though it was harvested thousands of miles away. This frustrates Baker and he thinks it probably confuses tourists, who are getting a mixed message not to disrupt the reefs when scuba-diving, but allowing them to buy chunks of dead coral.

“It’s like going to a zoo,” he says. “You learn about threatened tigers and then go to the zoo store and find a tiger pelt.”

Fashion and decor surely aren’t the main culprits in the destruction of the reefs, but artist Michael Aram makes the case to take them out of the equation entirely.

“One coral necklace doesn’t necessarily mean the end of the world, but why, when you can still celebrate it in a form that’s representational, still use it? It doesn’t make sense,” he says.

Aram favors casting coral sculptures in metal, then painting with enamel. Coral’s natural unpredictable shape allows him a lot of flexibility, he says.

“My coral is evocative of the real thing but mine can be a fantasy coral — you can be pretty wild with coral.”

THE INDEPENDENT NATURE

Massive under-reporting of fish catches leads to declining stocks

By Steve Connor in Fort Lauderdale, Florida

July 9, 2008

Under-reporting of fish catches was making the overall decline of fish stocks worse for some of the poorest people in the world

AFP/Getty Images
Under-reporting of fish catches was making the overall decline of fish stocks worse for some of the poorest people in the world

The total amount of fish being caught in the world is significantly under-reported because official statistics do not take into account the substantial catches made by some of the poorest nations that rely on fishing as a food staple, a study has found.

Scientists have estimated that for more than 50 years the United Nations Food and Agriculture Organisation has failed to report the huge volumes of fish being caught collectively by small-scale fisheries in its statistics on national catches.

They believe the discrepancy is exacerbating the decline in fish stocks by allowing some of the poorest countries to report higher fish stocks than really exist. This permits them to sell off their fishing rights to richer nations which take the highest-value fish.

Jennifer Jacquet, a member of the research team, said the official catch reported by the Mozambique government suggests that each citizen is eating about 3kg of fish per year.

However, when the scientists looked at the catches being made by subsistence fishing, that consumption rate rose to 9kg a year.

Despite this three-fold discrepancy, the Mozambique government was using its reported catch to justify selling off fishing permits to EU boats that were coming into Mozambique waters to fish for high-value shrimp, which often leads to substantial bycatch that is thrown overboard as waste fish – further depleting stocks for the local community.

"This is the antithesis of the Robin Hood parable. Instead of stealing from the rich to give to the poor, we're stealing from the poor to give to the rich," Ms Jacquet said yesterday.

Daniel Pauly, of the University of British Columbia in Canada, said the study emphasised how under-reporting of fish catches was making the overall decline of fish stocks worse for some of the poorest people in the world.

"We discovered one nation under-reporting its fisheries catches and then realised that this wasn't an isolated case but a problem globally. Everywhere we look, the number of fish being taken from reefs is greater than reported," Dr Pauly said. "This news is not only shocking but disheartening. Our previous conclusions about widespread over fishing must be amplified," he told the International Coral Reef Symposium held in Fort Lauderdale, Florida.

"The extent of the under-reporting is of such a magnitude, it boggles the mind," he said. "The only fish being reported in the national catches are the ones that are traded and the rest is ignored. So the overall picture is wrong."

ISLANDS BUSINESS

Islands' delicacy under threat

Samisoni Pareti

July 9, 2008

Islands Business Exclusive

Baby fish, a delicacy in many Pacific islands diets, will be threatened as an impact of global warming. Islandsbusiness.com says the warning came from Dr Philip Munday, a marine scientist with Australia's James Cook University in his presentation at the 11th International Coral Reef Symposium which opened in this coastal US city on Monday.

Fort Lauderdale, Florida—Baby fish, a delicacy in many Pacific islands diets, will be threatened as an impact of global warming. Islandsbusiness.com says the warning came from Dr Philip Munday, a marine scientist with Australia's James Cook University in his presentation at the 11th International Coral Reef Symposium which opened in this coastal US city on Monday.

Studies done by his Centre of Excellence for Coral Reef Studies suggest that with a rise in ocean temperature, the ability of baby fish referred to by marine biologists as coral reef fish larvae to survive will be affected. "Warmer waters will affect how far fish larvae will dispense into the deep ocean after being released by their mother," Dr Munday told journalists covering the symposium. "Rise in water temperature will also affect their ability to return to a coral reef where then can feed and grow." Cutting carbon emission will help a great deal in countering the phenomenon, the Australian scientist argued.

Custodians of coral reefs also have a big role to play. "We all must monitor the health of our coral reefs ensuring that their conditions don't deteriorate," said Dr Munday. "We must also promote marine protected areas (MPA) to reduce other stresses like overfishing." Research is also raising interesting data about fish larvae. A study by a group of scientists in Kimbe Bay in Papua New Guinea seem to suggest a link between larvae and rainforest leaves, which explains why larvae tend to return to natal reefs, or reefs where they were born. Dr Bob Warner of the University of California, Santa Barbara said these coral reef fish larvae are prolific swimmers, with some estimated to swim for up to 30 kilometres.

ISLANDS BUSINESS

Under-reporting of fish catches in Pacific

Samisoni Pareti

July 9, 2008

Islands Business Exclusive

The problem Dr Zeller said is the non-inclusion of catches from subsistence fishery, which is the source of livelihood for many of the people in the Pacific. Because such fishing is for domestic use, many government planners exclude subsistence or coral reef fishery from the total catch data they send the United Nations' FAO each year.

Fort Lauderdale, Florida –- Islands of the Pacific are under-reporting their catches of fish annually, preliminary results of a study by Canadian scientists show. "Between 1950 to 2004, total catch figures in 15 of the 20 Pacific Island countries were at least two times higher than those reported to the Food and Agricultural Organisation (FAO)," Dr Dirk Zeller one of the scientists who did the study told islandsbusiness.com and journalists covering the 11th International Coral Reef Symposium underway in this US city. "We expect the figure to increase once we do a follow up study in the Pacific." The problem Dr Zeller said is the non-inclusion of catches from subsistence fishery, which is the source of livelihood for many of the people in the Pacific. Because such fishing is for domestic use, many government planners exclude subsistence or coral reef fishery from the total catch data they send the United Nations' FAO each year.

The problem the Canadian scientist said is compounded by the current practice of having Foreign Affairs ministries or Customs dispatch the figures to the UN agency, and not the Fisheries ministry. "In American Samoa for example, actual catches were 17 times higher than the reported data. In Guam, it was 4 1⁄2 times higher. "In Hawaii, catches in recreational fishing (mainly related to its billion dollar tourism industry) were not reported until just recently. "But recreational fishing catches as much as the commercial fisheries sector." Dr Zeller is a marine scientist with the University of British Columbia in Vancouver and he did the recent study with colleagues Dr Daniel Pauly and Jennifer Jacquet. Jacquet not only looked at annual catch figures in Fiji and Solomon Islands but she also toured East Africa with the countries of Mozambique and Tanzania. Dr Zeller did add that Fiji, out of all the countries in the Pacific, was an exception as it includes coral reef fishery catches in the total catch figure it submits to FAO.

He said the island nation made the change as a result of at least two studies done in the early 1990s and again in 2000. His colleague Dr Pauly said subsistence fishing catches ought to be included in the annual catch figures since it supports millions of people. “So you have a situation where when planning policy, governments make the wrong decisions because they are not taking into account this very important sector,” said Dr Pauly. Governments, the scientists say, must also be aware of the implications of subsistence fishery to food security. Higher prices of imported food will force more and more people to resort to coral reef fishing, thus the importance of including subsistence fishing catches in their planning. Jacquet said her study in east Africa showed that women and children are the main players in subsistence fishing. The Canadian scientist was critical though of the fishing agreements some African countries had entered into with the European Union that had allowed fishing boats into coastal waters to trawl for shrimps. The deal Jacquet said had only led to the reversal of the role of the proverbial Robin Hood character who is now “stealing from the poor to feed the rich.”

ABC
Australian Broadcasting Corporation
Radio Australia

Humans slowly killing Aceh's tsunami survivor

July 9, 2008

An international coral reef meeting has heard reefs around the Indonesian province of Aceh are slowly being depleted by pollution and reef fishing, despite having survived the devastating 2004 tsunami.

The 2004 tsunami that left Aceh province in Indonesia devastated left its coral reefs relatively unscathed.

Scientists visited Aceh's reefs in the months following the Boxing Day tsunami, which killed more than 225,000 people in 11 countries.

Andrew Baird, an Australian researcher, is at the Coral Reef Symposium in the American state of Florida.

He told Radio Australia's Corinne Podger there was no change in Aceh's coral cover.

"In the shallow reef areas, the damage was absolutely trivial, the tsunami had done very little damage at all," the James Cook University researcher said.

Aceh's reefs were nevertheless in poor shape, from decades of net and blast fishing, and from ocean pollution.

Yudi Herdiana, of Indonesia's Wildlife Conservation Society, says damage to the reef is mainly man-made.

"The damage from the tsunami is quite patchy, the damaged reef in some particular areas is mainly caused by previous human activities such as dynamite fishing." Dr Herdiana said.

He says in the north of Aceh, the main problem is pollution from the capital, Banda Aceh and net fishing too close to shallow reefs.

There are management programs in place to protect Aceh's reefs, but Dr Herdiana says they have often been more of a hindrance than a help.

He says there are two management programs: a government-run scheme and one run by locals that has been around for centuries.

"It was developed hundreds of years ago by the ancient kingdom of Aceh, but the problem now is that there is no support from the local government in terms of funding [or] enforcement of any violations," Dr Herdiana said.

Both Dr Herdiana and his Australian colleague, Dr Baird, have called for better coordination between Indonesia's national and local conservation authorities, the creation of more marine protected areas, and tighter enforcement of conservation policies.

Otherwise, they warn, jobs and income will suffer, and Aceh's slow road to recovery will take even longer.

INQUIRER.net

Caribbean coral reefs only 25 percent healthy -- report

Agence France-Presse

July 9, 2008

MIAMI -- Global warming and pollution are decimating coral reefs around the world, with only 25 percent in good health in the Caribbean Sea, US experts warned Tuesday.

In other areas of the world such as the Pacific basin, nearly 70 percent of the coral reefs are either thriving or in good condition, the National Oceanic and Atmospheric Administration (NOAA) said in a report.

NOAA told the International Coral Reef Symposium in Fort Lauderdale, Florida, that nearly half of coral reef ecosystems in the United States are in poor or barely passable condition.

"This is absolutely a call to action," said NOAA Coral Program director Kacky Andrews.

To reverse the deterioration and lessen the threat to coral reefs, she strongly suggested curbing emissions of carbon dioxide and other greenhouse gases and the use of fertilizers, prevent damage from anchors and stop the sale of coral for jewelry.

THE FIJI TIMES Online

Under reporting of fish catches in Pacific

July 9, 2008

A preliminary result from a study by Canadian scientists has shown that islands of the Pacific are under-reporting their catches of fish annually.

The reports states that between 1950 to 2004, total catch figures in 15 of the 20 Pacific Island countries were at least two times higher than those reported to the Food and Agricultural Organisation (FAO).

Dr Dirk Zeller, one of the scientists who is responsible for the study, spoke with islandsbusiness.com and journalists covering the 11th International Coral Reef Symposium underway in the US city.

We expect the figure to increase once we do a follow up study in the Pacific, he said.

Dr Zeller is a marine scientist with the University of British Columbia in Vancouver and the recent study was done with colleagues Dr Daniel Pauly and Jennifer Jacquet.

Ms Jacquet not only looked at annual catch figures in Fiji and Solomon Islands but she also toured East Africa with the countries of Mozambique and Tanzania.

Dr Zeller did add that Fiji, out of all the countries in the Pacific, was an exception as it includes coral reef fishery catches in the total catch figure it submits to FAO.

He said the island nation made the change as a result of at least two studies done in the early 1990s and again in 2000.

According to Dr Zeller, the problem is the non-inclusion of catches from subsistence fishery, which is the source of livelihood for many of the people in the Pacific.

He said because such fishing is for domestic use, many government planners exclude subsistence or coral reef fishery from the total catch data they send the United Nations FAO each year.

This, he said, is compounded by the current practice of having Foreign Affairs ministries or Customs dispatch the figures to the UN agency, and not the Fisheries ministry.

Governments, the scientists say, must also be aware of the implications of subsistence fishery to food security.

THE SCIENCE OF EVERYTHING
COSMOS

Coral reefs only 25 per cent healthy

July 9, 2008

Agence France-Presse

MIAMI: Global warming and pollution are decimating coral reefs around the world, with only 25 per cent in good health in the Caribbean Sea, U.S. experts warn.

In other areas of the world such as the Pacific basin, nearly 70 per cent of the coral reefs are either thriving or in good condition, the National Oceanic and Atmospheric Administration (NOAA) said in a report released yesterday

NOAA told the 11th International Coral Reef Symposium in Fort Lauderdale, Florida, that nearly half of coral reef ecosystems in the United States are in poor or barely passable condition.

Low reef health: While reports indicate a worldwide reduction in coral reef covering, in the Caribbean the problem is compounded by the reefs' increasingly slow rate of recovery. Credit: iStockphoto

Call to action

"This is absolutely a call to action," said NOAA Coral Program director Kacky Andrews.

To reverse the deterioration and lessen the threat to coral reefs, she strongly suggested curbing emissions of carbon dioxide and other greenhouse gases and the use of fertiliser prevent damage from anchors and stop the sale of coral for jewellery.

"In the Caribbean, parts of Jamaica, Dominican Republic and Mexico that have been strongly impacted by hurricanes in the past few years, large communities of coral have

been lost," said Diego Lirman, a researcher at the University of Miami Rosentiel School of Marine and Atmospheric Science.

He said the Caribbean region, which sustains only 60 or 70 species of coral compared to more than 500 in the Pacific, "has lost a large part of its most ancient corals, which ... can be more than 500 years old and make up the reef's basic structure."

While reports indicate a worldwide reduction in coral reef covering, in the Caribbean the problem is compounded by the reefs' increasingly slow rate of recovery, Lirman said.

"In some places protected zones have been set aside, but the fact is many countries lack the means to monitor them – there are no patrols in the area and no real measure of control," the expert said.

Reef recovery program

Nonetheless, he said the University of Miami has a coral reef recovery program.

"We extract some corals, help them to grow and get stronger and return them to their communities in better condition so they can reproduce, or we take them to places where (coral reefs) have died off."

Development and overfishing also pose a threat to coral reefs, said Chantal Collier, with the Florida Department of Environmental Protection. "In Florida, which has the third longest reef system in the world, coastal population has grown by 64 per cent in the past two decades, putting pressure on the reefs from development," Collier said.

"Fishing is an activity of major concern in Florida, which is known as the fishing capital of the world," he added, noting that fish keep coral reefs healthy by cleaning them of algae that can overgrow and choke off nutrition.

The five-day Coral Reef Symposium, ending Friday, brings together some 2,500 scientists, conservationists and government officials from 114 countries.

Tsunami reconstruction bad for reefs

July 9, 2008

Many of Asia's coral reefs were badly damaged by the earthquake that triggered the 2004 Asian tsunami but in Indonesia's worst hit province of Aceh, fears that the subsequent tidal wave might have caused the same devastation to underwater reefs as on land turned out to be unfounded.

Now, however, new research presented at the International Coral Reef Symposium underway in Florida shows the post-tsunami reconstruction effort has been bad news for the reefs' survival.

Presenter: Corinne Podger
Speakers: Andrew Baird, a researcher from James Cook University; Yudi Herdiana, of Indonesia's Wildlife Conservation Society

PODGER: In the months following the 2004 tsunami, scientists visited Aceh's reefs, expecting to find them flattened and broken by the tidal surge. To their astonishment and relief, they discovered the coral reefs were comparatively unharmed. Andrew Baird is a researcher from James Cook University in north-east Australia, who's been visiting Aceh for more than 20 years:

BAIRD: The sites at which I had previous data from, there was absolutely no change in coral cover. These sites were in shallow reef areas, on the reef crest, and on the reef crest the corals are very strongly attached, and so in the shallow reef areas, the damage was absolutely trivial, the tsunami had done very little damage at all.

PODGER: However the researchers found that while the tsunami hadn't caused as much damage as expected, Aceh's reefs were nevertheless in poor shape, from decades of net and blast fishing, and from ocean pollution. Yudi Herdiana, of Indonesia's Wildlife Conservation Society, explains:

HERDIANA: The damage from the tsunami is quite patchy, not all the reef was damaged by the tsunami, so the damaged reef in some particular areas, it's mainly caused by previous human activities such as dynamite fishing. For northern Aceh

region, the main problem is pollution which comes from the main city, from the Banda Aceh, the capital city of the province, and from the fishing practices in northern Aceh region the main problem is the net fishing because people use nets close to the shallow reefs, and it's damaging the reefs.

PODGER: Here in Florida, Yudi Herdiana and Andrew Baird presented their latest findings on Aceh, which show the reefs have suffered considerably since the tidal wave four years ago. That's partly due to soil pollution, as run-off from tsunami-related erosion and landslides have trickled into the ocean. But it's also a grimly ironic outcome of Aceh's reconstruction and economic recovery:

HERDIANA: Reconstruction is causing more problem because in some area, in southern parts of this region, people used live corals and there's coral mining for construction and rebuildling the houses, because they don't have support from the mainland. It's quite a remote area so the local government from the mainland cannot give support quickly for reconstruction so they just used live coral.

PODGER: There are management programs in place to protect Aceh's reefs, but Dr Herdiana says they've often been more of a hidrance than a help:

HERDIANA: Currently we have two management in place in Aceh. The first is the national government, the natural tourism area, and the other one is the community based management. This is local people working to protect the reefs, and it's been hundreds of years ago, was developed hundreds of years ago by the ancient kingdom of Aceh, but the problem now is that there is no support from the local government in terms of the funding and for them to be able to make an enforcement of any violations.

PODGER: Both scientists have called for better coordination between Indonesia's national and local conservation authorities, the creation of more marine protected areas, and tighter enforcement of conservation policies. Otherwise, they warn jobs and income will suffer, and Aceh's slow road to recovery will take even longer.

Knight Science Journalism Tracker

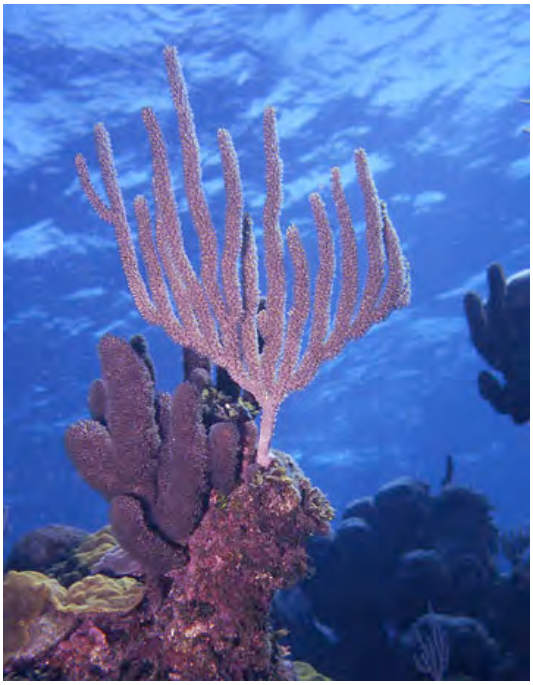
Wires, LA Times, USA Today, etc: US coral reefs taking a nose dive

July 9, 2008

The hed on an LA Times story by Kenneth Weiss pulls no punches: "Coral reefs on 'slippery slope to slime.'" At a major symposium on coral reefs in Fort Lauderdale Nat'l Oceanic and Atmospheric Admin. scientists had bad news on the decline of reefs in US waters and, by implication, elsewhere. This isn't the opinion of just a few researchers - the report, it says here, has 270 co-authors.

The upshot is, in broad brush, no surprise to readers who even casually follow environmental news. Global warming and so-called coral bleaching, more violent storms, overfishing, pollution, acidification, spread of invasive coral-destroying species, and more are ganging up on the reefs.

Other stories:



Reuters Michael Christie also filed from the meeting, and gets as an aside a great, finishing quote on what it's like to feel low on the food chain ; Radio Australia, with an Aussie slant to meeting coverage, see coral reefs perhaps gone in 50 years ; AP Brian Skoloff writes that this is the first report to go beyond anecdotal and patchwork data and take a systematic look; USA Today Dan Vergano has one source fretting over a "tipping point" but urging: don't give up ; Honolulu Advertiser Leanne Ta and Honolulu Star Bulletin Leila Fujimori (plus AP) take the same tack - Hawaii's Pacific corals are hurting, but they're not as badly off as those in the Caribbean ; Orlando Sentinel Ludmilla Lelis reports that, amid the gloom, are some signs that at least some reefs are recovering ; Palm Beach Post Eliot Kleinberg looks closest at the impact of urban and industrial waste on Florida's reefs ; …more.

*UPDATE Wed Jul 9, LATimes Kenneth R. Weiss reports that Hawaii may not have much solace after all. Some local reefs show dramatic declines in the numbers of iconic fish among the corals.

Grist for the Mill: NOAA Press Release
Even after the barrage of bad coral news going back several years now this week may stand out. The meeting in Florida ought to have more lowlights, the NYTimes Science Times today (post below) focusses on the ravages of just one coral peril, and on Friday another big science survey of coral's predicaments is due out. Reporters by then may be momentarily sated on this species of sorrowful enviro news. Too bad Friday's report is embargoed - it may have hit harder if teamed with today's publications.

-CP

Pollution, fishing 'killing tsunami-hit Aceh reefs'

By Corinne Podger for Radio Australia

July 9, 2008

Despite surviving the devastating 2004 tsunami, coral reefs around the Indonesian province of Aceh are facing a different threat from pollution and reef fishing, an international meeting has heard.

In danger: A coral bombie on the ocean floor at Sumatra-Andaman.

Scientists visited Aceh's reefs in the months following the Boxing Day tsunami, which killed more than 225,000 people in 11 countries.

Australian researcher Andrew Baird is at the Coral Reef Symposium in Florida in the United States and has told ABC's Radio Australia that there was no change in Aceh's coral cover directly following the tsunami.

"In the shallow reef areas, the damage was absolutely trivial, the tsunami had done very little damage at all," the James Cook University researcher said.

Aceh's reefs were nevertheless in poor shape from decades of net and blast fishing and from ocean pollution.

Indonesia's Wildlife Conservation Society's Yudi Herdiana says damage to the reef is mainly man-made.

"The damage from the tsunami is quite patchy, the damaged reef in some particular areas is mainly caused by previous human activities such as dynamite fishing." he said.

Management programs

Dr Herdiana says in the north of Aceh the main problem is pollution from the capital, Banda Aceh, as well as net fishing too close to shallow reefs.

There are management programs in place to protect Aceh's reefs, but Dr Herdiana says they have often been more of a hindrance than a help.

He says there are two management programs - a government-run scheme and one run by locals that has been around for centuries.

"It was developed hundreds of years ago by the ancient kingdom of Aceh, but the problem now is that there is no support from the local governments in terms of funding [or] enforcement of any violations," Dr Herdiana said.

Both Dr Herdiana and his Australian colleague, Dr Baird, have called for better co-ordination between Indonesia's national and local conservation authorities, the creation of more marine protected areas, and tighter enforcement of conservation policies.

Otherwise, they warn that jobs and income will suffer and Aceh's slow road to recovery will take even longer.

Biology News Net

Scientists discover new reefs teeming with marine life in Brazil

July 9, 2008

Scientists announced today the discovery of reef structures they believe doubles the size of the Southern Atlantic Ocean's largest and richest reef system, the Abrolhos Bank, off the southern coast of Brazil's Bahia state. The newly discovered area is also far more abundant in marine life than the previously known Abrolhos reef system, one of the world's most unique and important reefs.

Researchers from Conservation International (CI), Federal University of Espírito Santo and Federal University of Bahia announced their discovery in a paper presented today at the International Coral Reef Symposium in Fort Lauderdale. "We had some clues from local fishermen that other reefs existed, but not at the scale of what we discovered," says Rodrigo de Moura, Conservation International Brazil marine specialist and co-author of the paper. "It is very exciting and highly unusual to discover a reef structure this large and harboring such an abundance of fish," he adds.

The Abrolhos Bank is considered one of the world's most important reefs because it harbors a high number of marine species found only in Brazil including species of soft corals, mollusks and fish found only in the Abrolhos shelf. The Mussismilia coral genus, a relic group remnant of an ancient coral fauna dating back to the Tertiary period that went extinct long ago elsewhere in the Atlantic, is the dominant coral of the Abrolhos reef, which is structured in unique mushroom-like shapes.

Researchers mapped the new reef structures in areas ranging from nine to 124 miles (15 to 200 km) off the coast and in depths ranging from 60 to 220 feet (20 to 73 meters) using a side scan sonar which produces a three-dimensional map of the marine seabed.

"Due to their relative inaccessibility and depth, the newly discovered reefs are teeming with life, in some places harboring 30 times the density of marine life than the known, shallower reefs," says Guilherme Dutra, Conservation International's director of marine programs in Brazil. "That's the good news. The bad news is that only a small percentage of marine habitats in the Abrolhos are protected, despite mounting localized and global threats."

Localized threats include over-fishing, coastal development and large scale land conversion to agriculture, shrimp farms, pollution, oil drilling and sedimentation. Global threats include climate change and ocean acidification.

Researchers acknowledged the conservation effectiveness of the present network of Marine Protected Areas in the Abrolhos. But it is very limited and not nearly enough vis-à-vis the mounting threats, they added.

The next phase of the Abrolhos project will be to study the marine life in the new reef structures.

"These studies reveal the complexity and connectivity of the reefs in the Abrolhos region and will support conservation planning," states Guilherme Dutra.

Source: Conservation International

MiamiHerald.com

Coral experts converge on South Florida

By Oscar Corral

July 9, 2008

The world's foremost scientific experts on coral reefs are gathering this week in Broward County to compare notes, network and identify problems and solutions for the ocean's most delicate ecosystem.

The 11th International Coral Reef Symposium in Fort Lauderdale, which runs all week, marks the first time in more than 30 years that the conference, held every four years, is taking place in the United States.

A team of U.S.-based scientists lobbied for South Florida as the host site during the 2004 conference in Japan, said Richard E. Dodge, dean and professor at the Oceanographic Center at NSU.

"Coral reefs today are under severe environmental stress," Dodge said. ``People are hunting for scientific management solutions to maintain and retain coral reefs. You can't develop good management solutions if you don't have good science."

The conference marks a major coup for Nova Southeastern University, which is trying to become a global research powerhouse in the study of coral reefs.

Florida is a natural choice for those studying coral reefs because the state's shores contain 84 percent of the nation's reefs. Many of those reefs have been badly damaged over the past 30 years by a combination of factors, including coastal construction, overfishing, pollution and hurricanes, Dodge said.

While the symposium tackles global issues affecting reefs around the world, several panels and studies are emphasizing research on Florida's reefs. Some are controversial.

One example is a study by the U.S. Geological Survey, part of the Interior Department. In its report, "The Emperor Has No Coral?", it presented research conducted in the Florida Keys challenging the popular notion that humans are to blame for the demise of reefs. Twice in the past 5,000 years, they explain, reefs around the world have experienced "nongrowth." A new period of nongrowth started about 30 years ago.

"These periods of nongrowth indicate times of environmental crises that predated modern human presence in the Florida Keys," Geological Survey researchers said said in a statement.

Another discouraging conclusion: the state's dead or dying reefs outnumber live and growing reefs by about 100 to 1.

The National Oceanic and Atmospheric Administration also released a report on the state of coral reef ecosystems in the United States, which found that snapper, grouper and other reef fish have been "depleted" around the Atlantic/Caribbean area. The NOAA study again sounded the alarm on the state of South Florida's reefs.

"The unprecedented development of southeast Florida and the multiple pressures from its growing urban population continue to outpace environmental protection efforts at federal, state, local and citizen levels," NOAA concludes. ``The occurrence of coral bleaching and disease is rising. . . . The urgency of this situation requires a serious increase in effort and support at all levels."

The coral research community has been concerned about the health of the world's reefs since soon after the last symposium held in Miami in 1977, said Robert Ginsburg, 83, a scientist at the University of Miami's Rosenstiel School of Marine and Atmospheric Science. Ginsburg, 83, chaired the symposium planning committee 31 years ago.

Back then, the big buzz at the conference was core boring, which allowed scientists to determine the rate of coral growth by drilling into them.

"In 1977, we were not aware of as much decline," Ginsburg said. `` It was in the late 1970s and 1980s that people began to realize what was happening. Now we have serious declined all over the Atlantic and Caribbean."

Latest News

Latest Breaking News, India News, Business News, Hollywood News, and Bollywood News

Half of US coral reefs in ”poor” or ”fair” condition, says NOAA report

By ANI

July 9, 2008

Almost 50 percent of U.S. coral reef ecosystems are in ‘poor’ or ‘fair’ condition, according to the National Oceanic and Atmospheric Administration (NOAA) report.

The report has revealed that the nation’’s coral reef ecosystems, particularly those adjacent to populated areas, continue to face intense human-derived threats from coastal development, fishing, sedimentation and recreational use.

Even the most remote reefs are subject to threats such as marine debris, illegal fishing and climate-related effects of coral bleaching, disease and ocean acidification, according to the report.

“NOAA’’s coral program has made some significant progress since it was established 10 years ago, but we need to redouble our efforts to protect this critical resource,” said retired Navy Vice Admiral Conrad C. Lautenbacher Jr., Ph.D., under secretary of commerce for oceans and atmosphere and NOAA administrator.

Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force, said: “The report shows that this is a global issue.”

“While the report indicates reefs in general are healthier in the Pacific than the Atlantic, even remote reefs are subject to threats stemming from climate change as well as illegal fishing and marine debris,” he added.

According to the report’s authors, the conditions of U.S. coral reefs have been declining for several decades.

As an indicator of this decline, since the last status report was released in 2005, two coral species - Elkhorn and Staghorn corals - have become the first corals ever listed as threatened under the Endangered Species Act.

The 2008 report is the third in a series, representing an evolving effort to track the condition of coral reef ecosystems at both local and national scales.

The 569-page document details coral reef conditions in the U.S. Virgin Islands, Puerto Rico, Navassa Island, southeast Florida, the Florida Keys, Flower Garden Banks, the Main Hawaiian Islands, the Northwestern Hawaiian Islands, American Samoa, the Pacific Remote Islands, the Republic of the Marshall Islands, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam and the Republic of Palau.

The report was released by NOAA at the 11th International Coral Reef Symposium in Fort Lauderdale, Fla. (ANI)

fosters.com
A Service of Foster's Daily Democrat

NOAA report: US coral reefs in severe decline

July 9, 2008

FORT LAUDERDALE, Fla. (AP) _ Almost half the coral reef ecosystems in United States territory are in poor or fair condition, mostly because of rising ocean temperatures, according to a government report released Monday.

The reefs discussed in the National Oceanic and Atmospheric Administration report serve as breeding grounds for many of the world's seafood species and act as indicators of overall ocean health.

"They are a major indicator of something that could go wrong with the environment," said Timothy Keeney, NOAA's deputy assistant secretary for oceans and atmosphere.

Keeney said 25 percent of all marine species need coral reefs to live and grow, while 40 percent of the fish caught commercially use reefs to breed.

"If we lose the reefs, you lose a very significant and important habitat," Keeney said.

Since NOAA's last report in 2005, the Caribbean region has lost at least 50 percent of its corals, largely because sea temperatures have risen, Keeney said.

Elkhorn and staghorn corals have also been listed as threatened under the Endangered Species Act, the first corals ever to receive such protections based on rapid declines.

The 569-page report took 18 months to complete with input from 270 federal, state and university scientists. It documented 15 ecosystems in U.S. states and territories, including the U.S. Virgin Islands, Puerto Rico, Florida, Hawaii, American Samoa and Guam. It was released at the 11th International Coral Reef Symposium in Fort Lauderdale.

The report's authors noted it was the first detailed NOAA study to go beyond anecdotal evidence and patchy science to provide conclusive data that the nation's coral reefs are in trouble.

"We can actually document these declines now," said Jenny Waddell, coeditor of the study and a NOAA marine biologist.

The report found that coral bleaching caused largely by rising sea temperatures is a major factor. Carbon dioxide released by burning fossil fuels is absorbed by the oceans, making the waters more acidic and corrosive on corals.

Land-based pollution, such as sewage, beach erosion, coastal development and overfishing also are to blame.

The study does not make recommendations, but simply serves as what its authors deem a "call to action" for state governments and Caribbean countries.

Keeney sees corals as "a sentinel species of the planet," and calls them "the rain forests of the sea." Beyond their importance as breeding grounds for fish, reefs could hold cures for diseases.

He said there are also positive signs that people are beginning to understand "the value of coral reefs to our economy."

Kenney argues the report adds another layer of scientific certainty that man-made climate change is stressing the nation's oceans and could ultimately have huge economic and social impacts if its effects are not reversed.

"There's no question that ... man-made actions are the major cause for these losses and stresses on the reefs," Keeney said.

Dave Allison, a senior campaign director for the advocacy group Oceana, said the entire world's coral reefs "border on disaster."

"All the world's coral reefs are being stressed by both short-term and long-term human impacts," Allison said. "We've known about the human impact on corals for decades. It's just that the combination of problems confronting the corals have never come together in such a perfect storm."

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NOAA report: http://www.noaanews.noaa.gov/stories2008/20080707_coral.html

Oceana: http://www.oceana.org/north-america/home/

New reefs teeming with marine life discovered

July 9, 2008

The newly discovered reefs are teeming with life

Scientists have discovered new reef structures off the southern coast of Brazil that they believe doubles the size of the Southern Atlantic Ocean's largest and richest reef system, the Abrolhos Bank.

The newly-discovered area is also far more abundant in marine life than the previously known reef system.

Some of the new sections have 30 times the density of marine life than the known, shallower reefs.

The discovery was unveiled at the International Coral Reef Symposium in Fort Lauderdale, US.

"We had some clues from local fishermen that other reefs existed, but not at the scale of what we discovered," said Rodrigo de Moura, Conservation International Brazil marine specialist.

"It is very exciting and highly unusual to discover a reef structure this large and harbouring such an abundance of fish," he adds.

The scientists mapped the new reef structures in areas ranging from nine to 124 miles off the coast and in depths ranging from 60 to 220 feet using a side scan sonar which produces a three-dimensional map of the marine seabed.

The reefs contain a large number of marine species found only in Brazil, including species of soft corals, mollusks and fish found only in the Abrolhos shelf.

"Due to their relative inaccessibility and depth, the newly discovered reefs are teeming with life," said Guilherme Dutra, Conservation International's director of marine programs in Brazil.

"That's the good news. The bad news is that only a small percentage of marine habitats in the Abrolhos are protected, despite mounting localised and global threats."

The researchers hope studies of the marine life in the new reef structures will help future conservation efforts.

innovations report
Forum für Wissenschaft, Industrie und Wirtschaft

NOAA report states half of US coral reefs in 'poor' or 'fair' condition

Nächste Meldung

July 9, 2008

Nearly half of U.S. coral reef ecosystems are considered to be in "poor" or "fair" condition according to a new NOAA analysis of the health of coral reefs under U.S. jurisdiction.

The report issued today, The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008, says that the nation's coral reef ecosystems, particularly those adjacent to populated areas, continue to face intense human-derived threats from coastal development, fishing, sedimentation and recreational use.

Even the most remote reefs are subject to threats such as marine debris, illegal fishing and climate-related effects of coral bleaching, disease and ocean acidification.

The report was released by NOAA at the 11th International Coral Reef Symposium in Fort Lauderdale, Fla. More than 270 scientist and managers working throughout the Gulf of Mexico, Caribbean, the Atlantic and Pacific authored the 15 jurisdiction-specific chapters of the report. The scientists graded the coral ecosystems on a five tier scale: excellent, good, fair, poor and unknown.

"NOAA's coral program has made some significant progress since it was established 10 years ago, but we need to redouble our efforts to protect this critical resource," said retired Navy Vice Admiral Conrad C. Lautenbacher Jr., Ph.D., under secretary of commerce for oceans and atmosphere and NOAA administrator.

The 569-page document details coral reef conditions in the U.S. Virgin Islands, Puerto Rico, Navassa Island, southeast Florida, the Florida Keys, Flower Garden Banks, the Main Hawaiian Islands, the Northwestern Hawaiian Islands, American Samoa, the Pacific Remote Islands, the Republic of the Marshall Islands, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam and the Republic of Palau.

"The report shows that this is a global issue," said Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force. "While the report indicates reefs in general are healthier in the

Pacific than the Atlantic, even remote reefs are subject to threats stemming from climate change as well as illegal fishing and marine debris."

The conditions of U.S. coral reefs have been declining for several decades according to the report's authors. As an indicator of this decline, since the last status report was released in 2005, two coral species -- Elkhorn and Staghorn corals --- have become the first corals ever listed as threatened under the Endangered Species Act.

The 2008 report is the third in a series, representing an evolving effort to track the condition of coral reef ecosystems at both local and national scales. It was called for in the National Coral Reef Action Strategy (NCRAS) and was designed to address the primary threats, goals and objectives outlined in the NCRAS, the Coral Reef Conservation Act of 2000, and other guid¬ance documents. NOAA's Center for Coastal Monitoring and Assessment's Biogeography Branch led the development and production of the report with support from NOAA's Coral Reef Conservation Program.

Ben Sherman | Quelle: EurekAlert!
Weitere Informationen: ccma.nos.noaa.gov/stateofthereefs
www.noaa.gov

SeaWeb Scores A Hit

by Rick MacPherson

July 9, 2008

I'll write more on this later, but SeaWeb hosted a fantastic evening panel discussion last night at the 11th International Coral Reef Symposium that paired leading voices in coral reef science and conservation with leading journalists who report on ocean science. The goal? Have some frank discussions about what we like and don't like about the scientist-journalist relationship and create inroads for better messaging of coral science and conservation.

It wasn't a battle royal, but it did have some sparks. After the panel, SeaWeb hosted a reception that really encouraged scientists and journalists to carry-on the conversations.

In addition to chatting-up the room, I got to reconnect with Liz Neeley, SeaWeb's Assistant Director of Science Outreach as well as meet UK-based Julia Roberson, Senior Project Manager for SeaWeb's caviar and coral jewelry campaigns. Liz and Julia were kind enough to pose for a shot (Julie on left, Liz on right). And no, apparently they didn't plan to dress as twin!

guardian.co.uk

More pressure on global fish stocks as scientists warn of underreporting of catches

Tim Radford in Fort Lauderdale

July 9, 2008

Fishermen off the south Pacific island of Tokelau. Scientists have found that domestic catches in 20 Pacific islands have declined by 54%-86% since 1950. Photograph: AFP

Fish catches in some of the poorest nations in the world have been grossly underestimated, scientists warned yesterday.

The implication is that global fish stocks, already widely acknowledged to be under heavy pressure, are in far more in danger than thought. The underreporting particularly threatens the hundreds of millions of poor people around the world who rely on fish for subsistence.

A reconstruction of actual catches in 20 places around the globe showed that fish landings that were not reported were at least as high as the declared catch, and sometimes more than 16 times higher.

"This is underreporting of such magnitude that it boggles the mind," said Professor Daniel Pauly, of the University of British Columbia in Vancouver. The global database of world fish catches is maintained by the UN Food and Agriculture Organisation in Rome. It is based on voluntary declaration, and often misses subsistence and recreational fishing.

The new study, presented to the 11th international coral reef symposium in Fort Lauderdale, Florida, was conducted by scientists from the Sea Around Us project, an international research group based at the University of British Columbia. They visited the locations, questioned local officials and made their own estimates of subsistence fishery calculations since 1950.

They found huge disparities. In American Samoa, the annual haul of fish was 16.6 times greater than the declared catch. Hawaii's anglers and sport fishermen took enough to double the declared catch. The catch off Mozambique was more than six times the official estimate, despite the country's government selling permits to EU fishing fleets. And Tanzanian officials failed to include the island of Zanzibar in its data, although Zanzibari fishermen accounted for 30% of the total catch.

While uncertainties remain, Pauly says: "It is better to be vaguely right than precisely wrong."

Dr Dirk Zeller and Jennifer Jacquet of the Sea Around Us project found that domestic catches in 20 Pacific islands had been declining by between 54% and 86% since 1950, probably because of overfishing near population centres.

This shows that the underreporting does not suggest there are more fish in the sea than thought. Instead it confirms that many fisheries could be perilously close to extinction.

"Since we are finding that small-scale fisheries are greater contributors to overall catches than we previously thought, we need to more closely monitor commercial overfishing so that coastal communities around the globe have the income and food sources they need," Zeller warned.

"You may ask, so what if the data [is] incorrect, as long as the fish are there for us to catch and to eat," he added. "Local fishery resources are crucial for food security purposes, particularly in developing countries, and this is being amplified right now by the current trends in oil prices. All of these Pacific countries rely on imported food, if they don't catch it locally. Those imports come in by ship, therefore food prices will substantially increase. And they are not very rich countries."

Divemaster News

Fishing numbers higher than expected

July 9, 2008

The total amount of fish being caught in the world is significantly under-reported because official statistics do not take into account the substantial catches made by some of the poorest nations that rely on fishing as a food staple, a study has found.

Scientists have estimated that for more than 50 years the United Nations Food and Agriculture Organisation has failed to report the huge volumes of fish being caught collectively by small-scale fisheries in its statistics on national catches.

They believe the discrepancy is exacerbating the decline in fish stocks by allowing some of the poorest countries to report higher fish stocks than really exist. This permits them to sell off their fishing rights to richer nations which take the highest-value fish.

Jennifer Jacquet, a member of the research team, said the official catch reported by the Mozambique government suggests that each citizen is eating about 3kg of fish per year. However, when the scientists looked at the catches being made by subsistence fishing, that consumption rate rose to 9kg a year.

Despite this three-fold discrepancy, the Mozambique government was using its reported catch to justify selling off fishing permits to EU boats that were coming into Mozambique waters to fish for high-value shrimp, which often leads to substantial bycatch that is thrown overboard as waste fish – further depleting stocks for the local community.

"This is the antithesis of the Robin Hood parable. Instead of stealing from the rich to give to the poor, we're stealing from the poor to give to the rich," Ms Jacquet said yesterday.

Daniel Pauly, of the University of British Columbia in Canada, said the study emphasised how under-reporting of fish catches was making the overall decline of fish stocks worse for some of the poorest people in the world.

"We discovered one nation under-reporting its fisheries catches and then realised that this wasn't an isolated case but a problem globally. Everywhere we look, the number of fish being taken from reefs is greater than reported," Dr Pauly said. "This news is not only shocking but disheartening. Our previous conclusions about widespread over fishing must be amplified," he told the International Coral Reef Symposium held in Fort Lauderdale, Florida.

"The extent of the under-reporting is of such a magnitude, it boggles the mind," he said. "The only fish being reported in the national catches are the ones that are traded and the rest is ignored. So the overall picture is wrong."

Divemaster News

Scientists Discover Largest Reef in Brazil

Divemaster News

July 9, 2008

Scientists announced today the discovery of reef structures they believe doubles the size of the Southern Atlantic Ocean's largest and richest reef system, the Abrolhos Bank, off the southern coast of Brazil's Bahia state. The newly discovered area is also far more abundant in marine life than the previously known Abrolhos reef system, one of the world's most unique and important reefs.

Researchers from Conservation International (CI), Federal University of Espírito Santo and Federal University of Bahia announced their discovery in a paper presented today at the International Coral Reef Symposium in Fort Lauderdale. "We had some clues from local fishermen that other reefs existed, but not at the scale of what we discovered," says Rodrigo de Moura, Conservation International Brazil marine specialist and co-author of the paper. "It is very exciting and highly unusual to discover a reef structure this large and harboring such an abundance of fish," he adds.

The Abrolhos Bank is considered one of the world's most important reefs because it harbors a high number of marine species found only in Brazil including species of soft corals, mollusks and fish found only in the Abrolhos shelf. The Mussismilia coral genus, a relic group remnant of an ancient coral fauna dating back to the Tertiary period that went extinct long ago elsewhere in the Atlantic, is the dominant coral of the Abrolhos reef, which is structured in unique mushroom-like shapes.

Researchers mapped the new reef structures in areas ranging from nine to 124 miles (15 to 200 km) off the coast and in depths ranging from 60 to 220 feet (20 to 73 meters) using a side scan sonar which produces a three-dimensional map of the marine seabed.

"Due to their relative inaccessibility and depth, the newly discovered reefs are teeming with life, in some places harboring 30 times the density of marine life than the known, shallower reefs," says Guilherme Dutra, Conservation International's director of marine programs in Brazil. "That's the good news. The bad news is that only a small percentage of marine habitats in the Abrolhos are protected, despite mounting localized and global threats."

Localized threats include over-fishing, coastal development and large scale land conversion to agriculture, shrimp farms, pollution, oil drilling and sedimentation. Global threats include climate change and ocean acidification.

Researchers acknowledged the conservation effectiveness of the present network of Marine Protected Areas in the Abrolhos. But it is very limited and not nearly enough vis-à-vis the mounting threats, they added.

The next phase of the Abrolhos project will be to study the marine life in the new reef structures.

"These studies reveal the complexity and connectivity of the reefs in the Abrolhos region and will support conservation planning," states Guilherme Dutra.

Caribbean coral reefs only 25 percent healthy

July 9, 2008

MIAMI, USA (AFP): Global warming and pollution are decimating coral reefs around the world, with only 25 percent in good health in the Caribbean Sea, US experts warned Tuesday.

Caribbean reefs are under pressure from global warming and pollution. AFP PHOTO

In other areas of the world such as the Pacific basin, nearly 70 percent of the coral reefs are either thriving or in good condition, the National Oceanic and Atmospheric Administration (NOAA) said in a report.

NOAA told the 11th International Coral Reef Symposium in Fort Lauderdale, Florida, that nearly half of coral reef ecosystems in the United States are in poor or barely passable condition.

"This is absolutely a call to action," said NOAA Coral Program director Kacky Andrews.

To reverse the deterioration and lessen the threat to coral reefs, she strongly suggested curbing emissions of carbon dioxide and other greenhouse gases and the use of fertilizer, prevent damage from anchors and stop the sale of coral for jewelry.

"In the Caribbean, parts of Jamaica, Dominican Republic and Mexico that have been strongly impacted by hurricanes in the past few years, large communities of coral have been lost," Diego Lirman, a University of Miami Rosentiel School of Marine and Atmospheric Science expert, told AFP.

He said the Caribbean region, which sustains only 60 or 70 species of coral compared to more than 500 in the Pacific, "has lost a large part of its most ancient corals, which ... can be more than 500 years old and make up the reef's basic structure."

While reports indicate a worldwide reduction in coral reef covering, in the Caribbean the problem is compounded by the reefs' increasingly slow rate of recovery, Lirman said.

"In some places protected zones have been set aside, but the fact is many countries lack the means to monitor them -- there are no patrols in the area and no real measure of control," the expert said.

Nonetheless, he said the University of Miami has a coral reef recovery program.

"We extract some corals, help them to grow and get stronger and return them to their communities in better condition so they can reproduce, or we take them to places where (coral reefs) have died off."

Development and overfishing also pose a threat to coral reefs, said Chantal Collier, with the Florida Department of Environmental Protection.

"In Florida, which has the third longest reef system in the world, coastal population has grown by 64 percent in the past two decades, putting pressure on the reefs from development," Collier said.

"Fishing is an activity of major concern in Florida, which is known as the fishing capital of the world," he added, noting that fish keep coral reefs healthy by cleaning them of algae that can overgrow and choke off nutrition.

The five-day Coral Reef Symposium ending Friday brings together some 2,500 scientists, conservationists and government officials from 114 countries. It is held every four years.

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More Pressure on Global Fish Stocks As Scientists Warn of Underreporting of Catches

July 9, 2008

The amount of fish being caught worldwide has been dramatically underreported as official figures do not include subsistence fishing for food by poorer nations, according to a new study warning that many fisheries may be perilously close to extinction.

Fish catches in some of the poorest nations in the world have been grossly underestimated, scientists warned yesterday.

The implication is that global fish stocks, already widely acknowledged to be under heavy pressure, are in far more in danger than thought. The underreporting particularly threatens the hundreds of millions of poor people around the world who rely on fish for subsistence.

A reconstruction of actual catches in 20 places around the globe showed that fish landings that were not reported were at least as high as the declared catch, and sometimes more than 16 times higher.

"This is underreporting of such magnitude that it boggles the mind," said Professor Daniel Pauly, of the University of British Columbia in Vancouver. The global database of world fish catches is maintained by the UN Food and Agriculture Organization in Rome. It is based on voluntary declaration, and often misses subsistence and recreational fishing.

The new study, presented to the 11th international coral reef symposium in Fort Lauderdale, Florida, was conducted by scientists from the Sea Around Us project, an international research group based at the University of British Columbia. They visited the locations, questioned local officials and made their own estimates of subsistence fishery calculations since 1950.

They found huge disparities. In American Samoa, the annual haul of fish was 16.6 times greater than the declared catch. Hawaii's anglers and sport fishermen took enough to double the declared catch. The catch off Mozambique was more than six times the

official estimate, despite the country's government selling permits to EU fishing fleets. And Tanzanian officials failed to include the island of Zanzibar in its data, although Zanzibari fishermen accounted for 30% of the total catch.

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This shows that the underreporting does not suggest there are more fish in the sea than thought. Instead it confirms that many fisheries could be perilously close to extinction.

"Since we are finding that small-scale fisheries are greater contributors to overall catches than we previously thought, we need to more closely monitor commercial overfishing so that coastal communities around the globe have the income and food sources they need," Zeller warned.

"You may ask, so what if the data [is] incorrect, as long as the fish are there for us to catch and to eat," he added. "Local fishery resources are crucial for food security purposes, particularly in developing countries, and this is being amplified right now by the current trends in oil prices. All of these Pacific countries rely on imported food, if they don't catch it locally. Those imports come in by ship, therefore food prices will substantially increase. And they are not very rich countries."

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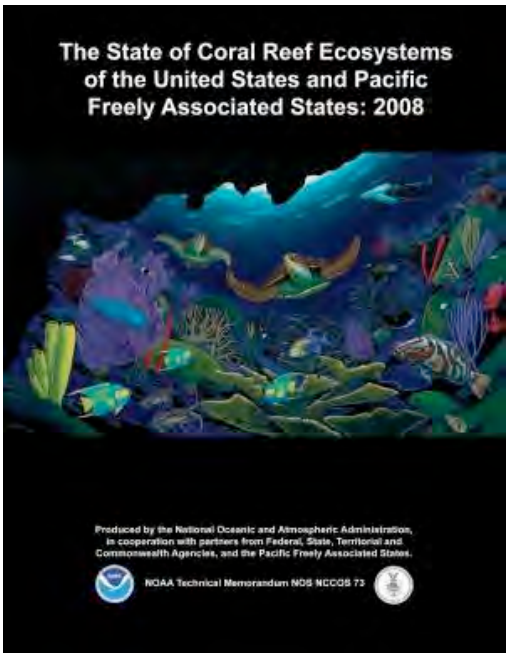
ScienceDaily
Your source for the latest research news

Half Of US Coral Reefs In 'Poor' Or 'Fair' Condition, NOAA Report States

July 9, 2008



Cover of "The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008". (Credit: Image courtesy of National Oceanic And Atmospheric Administration)

ScienceDaily (July 9, 2008) — Nearly half of U.S. coral reef ecosystems are considered to be in "poor" or "fair" condition according to a new NOAA analysis of the health of coral reefs under U.S. jurisdiction.

The report issued July 7, The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008, says that the nation's coral reef ecosystems, particularly those adjacent to populated areas, continue to face intense human-derived threats from coastal development, fishing, sedimentation and recreational use. Even the most remote reefs are subject to threats such as marine debris, illegal fishing and climate-related effects of coral bleaching, disease and ocean acidification.

The report was released by NOAA at the 11th International Coral Reef Symposium in Fort Lauderdale, Fla. More than 270 scientist and managers working throughout the Gulf of Mexico, Caribbean, the Atlantic and Pacific authored the 15 jurisdiction-specific chapters of the report. The scientists graded the coral ecosystems on a five tier scale: excellent, good, fair, poor and unknown.

"NOAA's coral program has made some significant progress since it was established 10 years ago, but we need to redouble our efforts to protect this critical resource," said retired Navy Vice Admiral Conrad C. Lautenbacher Jr., Ph.D., under secretary of commerce for oceans and atmosphere and NOAA administrator.

The 569-page document details coral reef conditions in the U.S. Virgin Islands, Puerto Rico, Navassa Island, southeast Florida, the Florida Keys, Flower Garden Banks, the Main Hawaiian Islands, the Northwestern Hawaiian Islands, American Samoa, the Pacific Remote Islands, the Republic of the Marshall Islands, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam and the Republic of Palau.

"The report shows that this is a global issue," said Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force. "While the report indicates reefs in general are healthier in the Pacific than the Atlantic, even remote reefs are subject to threats stemming from climate change as well as illegal fishing and marine debris."

The conditions of U.S. coral reefs have been declining for several decades according to the report's authors. As an indicator of this decline, since the last status report was released in 2005, two coral species -- Elkhorn and Staghorn corals --- have become the first corals ever listed as threatened under the Endangered Species Act.

The 2008 report is the third in a series, representing an evolving effort to track the condition of coral reef ecosystems at both local and national scales. It was called for in the National Coral Reef Action Strategy (NCRAS) and was designed to address the primary threats, goals and objectives outlined in the NCRAS, the Coral Reef Conservation Act of 2000, and other guid¬ance documents. NOAA's Center for Coastal Monitoring and Assessment's Biogeography Branch led the development and production of the report with support from NOAA's Coral Reef Conserva¬tion Program.

The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008 is available for free download at http://ccma.nos.noaa.gov/stateofthereefs. Adapted from materials provided by National Oceanic And Atmospheric Administration.

Huliq News

New reefs teeming with marine life in Brazil

July 9, 2008

Scientists announced the discovery of reef structures they believe doubles the size of the Southern Atlantic Ocean's largest and richest reef system, the Abrolhos Bank, off the southern coast of Brazil's Bahia state.

The newly discovered area is also far more abundant in marine life than the previously known Abrolhos reef system, one of the world's most unique and important reefs.

Researchers from Conservation International (CI), Federal University of Esp H rito Santo and Federal University of Bahia announced their discovery in a paper presented today at the International Coral Reef Symposium in Fort Lauderdale. "We had some clues from local fishermen that other reefs existed, but not at the scale of what we discovered," says Rodrigo de Moura, Conservation International Brazil marine specialist and co-author of the paper. "It is very exciting and highly unusual to discover a reef structure this large and harboring such an abundance of fish," he adds.

The Abrolhos Bank is considered one of the world's most important reefs because it harbors a high number of marine species found only in Brazil including species of soft corals, mollusks and fish found only in the Abrolhos shelf. The Mussismilia coral genus, a relic group remnant of an ancient coral fauna dating back to the Tertiary period that went extinct long ago elsewhere in the Atlantic, is the dominant coral of the Abrolhos reef, which is structured in unique mushroom-like shapes.

Researchers mapped the new reef structures in areas ranging from nine to 124 miles (15 to 200 km) off the coast and in depths ranging from 60 to 220 feet (20 to 73 meters) using a side scan sonar which produces a three-dimensional map of the marine seabed.

"Due to their relative inaccessibility and depth, the newly discovered reefs are teeming with life, in some places harboring 30 times the density of marine life than the known, shallower reefs," says Guilherme Dutra, Conservation International's director of marine programs in Brazil. "That's the good news. The bad news is that only a small percentage of marine habitats in the Abrolhos are protected, despite mounting localized and global threats."

Localized threats include over-fishing, coastal development and large scale land conversion to agriculture, shrimp farms, pollution, oil drilling and sedimentation. Global threats include climate change and ocean acidification.

Researchers acknowledged the conservation effectiveness of the present network of Marine Protected Areas in the Abrolhos. But it is very limited and not nearly enough vis-a-vis the mounting threats, they added.

The next phase of the Abrolhos project will be to study the marine life in the new reef structures.

"These studies reveal the complexity and connectivity of the reefs in the Abrolhos region and will support conservation planning," states Guilherme Dutra.

-Conservation International

THE ECONOMIC TIMES

Caribbean coral reefs only 25 per cent healthy

Reuters

July 9, 2008

MIAMI: Global warming and pollution are decimating coral reefs around the world, with only 25 percent in good health in the Caribbean Sea, US experts warned on Tuesday.

In other areas of the world such as the Pacific basin, nearly 70 per cent of the coral reefs are either thriving or in good condition, the National Oceanic and Atmospheric Administration (NOAA) said in a report.

NOAA told the 11th International Coral Reef Symposium in Fort Lauderdale, Florida, that nearly half of coral reef ecosystems in the United States are in poor or barely passable condition.

"This is absolutely a call to action," said NOAA Coral Program director Kacky Andrews.

To reverse the deterioration and lessen the threat to coral reefs, she strongly suggested curbing emissions of carbon dioxide and other greenhouse gases and the use of fertilizer, prevent damage from anchors and stop the sale of coral for jewelry.

"In the Caribbean, parts of Jamaica, Dominican Republic and Mexico that have been strongly impacted by hurricanes in the past few years, large communities of coral have been lost," Diego Lirman, a University of Miami Rosentiel School of Marine and Atmospheric Science expert said.

He said the Caribbean region, which sustains only 60 or 70 species of coral compared to more than 500 in the Pacific, "has lost a large part of its most ancient corals, which can be more than 500 years old and make up the reef's basic structure."

While reports indicate a worldwide reduction in coral reef covering, in the Caribbean the problem is compounded by the reefs' increasingly slow rate of recovery, Lirman said.

"In some places protected zones have been set aside, but the fact is many countries lack the means to monitor them -- there are no patrols in the area and no real measure of control," the expert said.

Nonetheless, he said the University of Miami has a coral reef recovery program. "We extract some corals, help them to grow and get stronger and return them to their communities in better condition so they can reproduce, or we take them to places where (coral reefs) have died off."

Development and over fishing also pose a threat to coral reefs, said Chantal Collier, with the Florida Department of Environmental Protection.

"In Florida, which has the third longest reef system in the world, coastal population has grown by 64 per cent in the past two decades, putting pressure on the reefs from development," Collier said.

"Fishing is an activity of major concern in Florida, which is known as the fishing capital of the world," he added, noting that fish keep coral reefs healthy by cleaning them of algae that can overgrow and choke off nutrition.

The five-day Coral Reef Symposium ending Friday brings together some 2,500 scientists, conservationists and government officials from 114 countries. It is held every four years.

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Chicago Tribune Web Edition

Hawaiian Islands' reef fish declining, study finds

By Kenneth R. Weiss | Los Angeles Times Staff Writer

July 9, 2008

Scientists blame overfishing for the problem, which affects 75% of the species. Subsistence fishermen in coastal communities rely on the fish to feed their families.

A researcher counts fish near a coral reef at Palmyra Atoll in the central Pacific. (Rick Loomis / Los Angeles Times)

Sharks, jacks, parrot fish and other colorful reef fish are quickly disappearing from coral reefs encircling the Hawaiian Islands, federal scientists reported Tuesday.

The scientists blamed overfishing for the steep decline, which affects three-quarters of the species once commonly found on coral reefs, delighting snorkeling tourists and feeding subsistence fishermen in Hawaii's coastal communities.

Many of these fish, ecologists say, are key to maintaining healthy coral reefs because they keep reefs clean by grazing on algae that can quickly overgrow the stony corals and cause them to collapse.

Alan Friedlander, a federal fisheries ecologist, said that Hawaii still had relatively healthy reefs. "So everything hasn't collapsed yet," he said. "But we need to protect

healthy reefs, because it's so much easier and safer to conserve now than it is to try to rebuild later."

The results of the study were released at the International Coral Reef Symposium in Fort Lauderdale, Fla. Nearly 3,000 scientists, managers and conservationists have congregated there to pore over the latest science and wrestle with ways to protect the world's coral reefs, which are in a state of steep decline.

Many prominent scientists think that overfishing represents one of the greatest challenges to maintaining and restoring healthy coral reefs.

Daniel Pauly, director of the University of British Columbia's Fisheries Centre, pointed out Tuesday that international authorities and local governments on Pacific island nations had little understanding of how many fish were being removed from coral reefs by small-scale subsistence fishermen.

For the most part, catch data compiled by American Samoa and other such island nations do not include all the small-boat fishermen who paddle or motor out to catch fish for themselves and their families. Comparing census data of per-person fish consumption and other sources, Pauly and his team of researchers discovered that in some cases the unreported catches were 17 times higher than reported catches. On average, they were at least twice as high.

Reconstructing a clearer picture of historic catches, Dirk Zeller and Jennifer Jacquet at the Fisheries Centre found that domestic catches had declined 54% to 86% since the 1950s.

This finding is important, Pauly said, because such catch data help determine if countries should sell fishing rights to foreign fishing fleets. If the local reliance on fish is underestimated, such deals can come at the expense of an important local source of protein.

Coral reef fisheries, Pauly said, are "very important because they are supporting millions of people in the developing world." He said that countries and the United Nations' Food and Agriculture Organization needed to pay attention to these unreported catches to ensure the food security of isolated islands struggling with rising prices for imported food as fuel costs escalate.

The study also found that Hawaii's unreported recreational fisheries for reef fish and deep-dwelling bottom fish was equivalent to the total reported commercial catch.

"Overfishing is often disputed in Hawaii and elsewhere because catch data is underreported or spotty," Friedlander said. The study, conducted by Friedlander and his colleagues from the Oceanic Institute and the National Oceanic and Atmospheric Administration's biogeography branch on Oahu, got around this problem by diving into the water and meticulously counting fish.

Teams of divers looked at 55 species of fish found on coral reefs around the main Hawaiian Islands as well as the remote and largely un-fished northwestern Hawaiian Islands, which lie hundreds of miles north and west of Kauai.

Comparing the fish counts at both places, the divers determined that 75% of the species around the main islands, such as Oahu, Maui and the Big Island, were in critical condition or depleted. Another 11% were below desirable levels.

Friedlander said Hawaii would be well served by tightening fishing regulations and setting aside protected no-fishing reserves to conserve coral reefs, helping to ensure that reef fish don't disappear for future generations.

"Probably in Hawaii, more than anywhere else in the United States, people rely on fish to feed themselves and their families," Friedlander said.

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THE TIMES OF INDIA

Caribbean coral reefs only 25 per cent healthy

Reuters

July 9, 2008

MIAMI: Global warming and pollution are decimating coral reefs around the world, with only 25 percent in good health in the Caribbean Sea, US experts warned on Tuesday.

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SCIENCE CENTRIC

Researchers discover new reefs teeming with marine life in Brazil

July 9, 2008

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Localised threats include over-fishing, coastal development and large scale land conversion to agriculture, shrimp farms, pollution, oil drilling and sedimentation. Global threats include climate change and ocean acidification.

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Source: Conservation International

redOrbit

Coral Experts Converge on S. Fla.

By Oscar Corral, The Miami Herald

July 9, 2008

Jul. 9--The world's foremost scientific experts on coral reefs are gathering this week in Broward County to compare notes, network and identify problems and solutions for the ocean's most delicate ecosystem.

The 11th International Coral Reef Symposium in Fort Lauderdale, which runs all week, marks the first time in more than 30 years that the conference, held every four years, is taking place in the United States.

A team of U.S.-based scientists lobbied for South Florida as the host site during the 2004 conference in Japan, said Richard E. Dodge, dean and professor at the Oceanographic Center at NSU.

"Coral reefs today are under severe environmental stress," Dodge said. "People are hunting for scientific management solutions to maintain and retain coral reefs. You can't develop good management solutions if you don't have good science."

The conference marks a major coup for Nova Southeastern University, which is trying to become a global research powerhouse in the study of coral reefs.

Florida is a natural choice for those studying coral reefs because the state's shores contain 84 percent of the nation's reefs. Many of those reefs have been badly damaged over the past 30 years by a combination of factors, including coastal construction, overfishing, pollution and hurricanes, Dodge said.

While the symposium tackles global issues affecting reefs around the world, several panels and studies are emphasizing research on Florida's reefs. Some are controversial.

One example is a study by the U.S. Geological Survey, part of the Interior Department. In its report, "The Emperor Has No Coral?", it presented research conducted in the Florida Keys challenging the popular notion that humans are to blame for the demise of

reefs. Twice in the past 5,000 years, they explain, reefs around the world have experienced "nongrowth." A new period of nongrowth started about 30 years ago.

"These periods of nongrowth indicate times of environmental crises that predated modern human presence in the Florida Keys," Geological Survey researchers said said in a statement.

Another discouraging conclusion: the state's dead or dying reefs outnumber live and growing reefs by about 100 to 1.

The National Oceanic and Atmospheric Administration also released a report on the state of coral reef ecosystems in the United States, which found that snapper, grouper and other reef fish have been "depleted" around the Atlantic/Caribbean area. The NOAA study again sounded the alarm on the state of South Florida's reefs.

"The unprecedented development of southeast Florida and the multiple pressures from its growing urban population continue to outpace environmental protection efforts at federal, state, local and citizen levels," NOAA concludes. "The occurrence of coral bleaching and disease is rising. . . . The urgency of this situation requires a serious increase in effort and support at all levels."

The coral research community has been concerned about the health of the world's reefs since soon after the last symposium held in Miami in 1977, said Robert Ginsburg, 83, a scientist at the University of Miami's Rosenstiel School of Marine and Atmospheric Science. Ginsburg, 83, chaired the symposium planning committee 31 years ago.

Back then, the big buzz at the conference was core boring, which allowed scientists to determine the rate of coral growth by drilling into them.

"In 1977, we were not aware of as much decline," Ginsburg said. " It was in the late 1970s and 1980s that people began to realize what was happening. Now we have serious declined all over the Atlantic and Caribbean."

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Huge Newfound Coral Reef Teems With Life

By Greg Soltis

July 9, 2008

The largest and most diverse reef system in the South Atlantic Ocean, the Abrolhos Bank, is twice as large as thought and teeming with life, scientists now say.

"We had some clues from local fishermen that other reefs existed, but not at the scale of what we discovered," said Rodrigo de Moura, Conservation International Brazil marine specialist and co-author of a study about the discovery. "It is very exciting and highly unusual to discover a reef structure this large and harboring such an abundance of fish."

Home to a variety of marine species such as soft corals and mollusks found only in Brazil, the Abrolhos Bank is recognized as one of the planet's most valuable coral reefs. And the most prevalent coral in this reef, the Mussismilia coral genus, represents the only remaining plants from a coral fauna with origins in the Tertiary period, which ranges from about 2 million to 65 million years ago.

Other creatures found at the reef include the dog snapper, black grouper, and adult and juvenile masked boobies.

The researchers used a side-scan sonar to generate a 3-D map of the coral reef. Located 9 to 124 miles off the Brazilian coast, the reef's depth varied from 60 to 200 feet.

"Due to their relative inaccessibility and depth, the newly discovered reefs are teeming with life, in some places harboring 30 times the density of marine life than the known, shallower reefs," said Guilherme Dutra, Conservation International's director of marine programs in Brazil. "That's the good news. The bad news is that only a small percentage of marine habitats in the Abrolhos are protected, despite mounting localized and global threats."

Efforts are made to safeguard the reef, located off the southern coast of Brazil's Bahia state, by groups including the Marine Protected Areas in the Abrolhos. But they struggle against over-fishing, coastal development, oil drilling and ocean acidification.

Researchers from Brazil's Federal University of Espírito Santo and Federal University of Bahia contributed to the study, which was presented Tuesday at the International Coral Reef Symposium in Fort Lauder dale, Fla.

PRENSA LATINA
Latin American News Agency

Coral Reef Deterioration Alert

July 9, 2008

Washington, Jul 9 (Prensa Latina) The survival of coral reef depends on the drastic reduction of carbon dioxide gas emission, emphasized experts in a symposium on the issue that is being held in the United States.

The climate change acidifies oceans waters and makes them warmer, damaging most of the coral species, added specialists meeting in Fort Lauderdale, Florida.

Carbon emission from fossil fuel burning affected the seas of the planets by reducing corals in many areas, which tendency will continue in the future, they said.

Even when it is possible to eliminate environmental pollution the damage has already been done and could be irreversible, they noted.

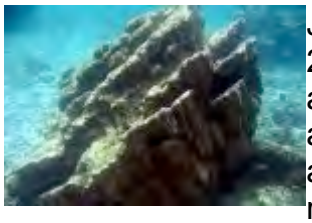
The called to reduce gas emission of greenhouse effect, avoid excess fishing, pollution and other threats to help corals become more resistant and endure the current situation.

AsiaNews.it

Coral reefs survive tsunami, endangered by pollution

July 9, 2008

INDONESIA
One of the most picturesque marine areas along Indonesia's coastline could disappear as a result of indiscriminate fishing and pollution. An environmentalist with the country's Wildlife Conservation Society calls for greater co-ordination between national and local authorities and tighter enforcement of conservation policies.



Jakarta (AsiaNews/Agencies) – Despite surviving the devastating 2004 tsunami, coral reefs around the Indonesian province of Aceh are facing a different threat from pollution and reef fishing. Human activities like unrestrained fishing and the dumping of toxic waste are threatening the survival one of the most picturesque nature reserve areas in the country.

Scientists and environmentalists have raised the alarm after analysing the state of the coral reefs in the wake of the 2004 tsunami. They found that there was no change in Aceh's coral cover directly following the tsunami; never the less, the province's reefs were in poor shape from decades of net and blast fishing and from ocean pollution.

For Indonesia's Wildlife Conservation Society's Yudi Herdiana, damage to the reef is mainly man-made.

"The damage from the tsunami is quite patchy, the damaged reef in some particular areas is mainly caused by previous human activities such as dynamite fishing or net fishing," he said.

Pollution from the provincial capital, Banda Aceh, is also another major factor.

Two management programmes, a province-run scheme and one managed by the central government, are in place, but for Dr Herdiana there is need for better co-ordination between Indonesia's national and local conservation authorities, the creation of more marine protected areas, and tighter enforcement of conservation policies.

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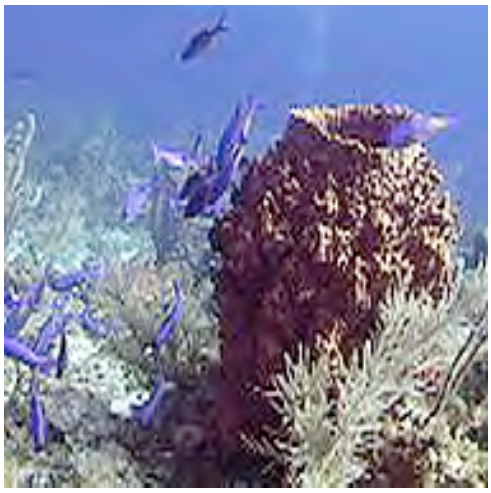
New Study Warns Warmer, More Acidic Oceans Will Kill Coral Reefs

By Zulima Palacio

July 9, 2008

Nearly half of the U.S. coral reef ecosystems are considered to be in "poor" or "fair" condition according to a new analysis of the U.S. National Oceanic and Atmospheric Administration, or NOAA. The report was presented during the 11th International Coral Reef Symposium in Fort Lauderdale, Florida this week. Producer Zulima Palacio looks into the new report on the eve of the International Year of the Reef 2008. Jim Bertel narrates the story.



Beautiful and healthy coral reefs are the largest living structures on earth

Scientists often call beautiful and healthy coral reefs like this one the largest living structures on earth. However, they are being replaced by this: bleached, diseased and dead coral.

Mark Eakin, the coordinator of Coral Reef Watch for the U.S. National Oceanic and Atmospheric Administration, (NOAA), says three years ago a rise in sea temperatures in the area of the U.S. Virgin Islands in the Caribbean killed about half of the remaining coral.

"The level of thermal stress, the heating that caused that bleaching in 2005, was greater that the previous 20 years of satellite record combined," Eakin said.

Eakin says NOAA studies have identified two key factors in the process of coral destruction.

"We believe about a two degree increase Celsius, greater than what we have seen over the last 100 years, will be a critical level for coral reefs," Eakin said. "In addition the increase in atmospheric CO2 [carbon dioxide] not only causes an increase in temperatures but it also changes the chemistry of the oceans. It drops the pH [measure of acidity and alkalinity] and makes the ocean more acidic."

The latest U.S. report serves as a new warning of the effect of global warming in the oceans. It says that the nation's coral reef ecosystems, particularly those close to populated areas, continue to face intense threats from human activities such as fishing, sedimentation and recreation.

"Coral reefs are in some ways a canary in the coal mine," says Jeannette Waddell, a marine biologist at NOAA. "They are extremely sensitive to changes in their environment."

Scientists sometimes refer to coral reefs, the most diverse marine ecosystems, as the rainforests of the ocean. And they say there are more fish around reefs than in remainder of the oceans.

And there is more at stake. Doctors say coral reefs are also a source of medicine.

"We are maybe losing species that hold enormous promise for human suffering, for relieving human suffering and preventing human death," says Dr. Eric Chivian, who is with Harvard Medical School.

Reports say growing concentrations of carbon dioxide and pollution, warming of ocean waters as well as disease, overfishing and damage from fishing nets are part of the problem. Eakin also expressed concerns about the speed of change.

"We are seeing increases in temperature at rates that we haven't seeing any time in the last several hundred thousand years. So, the problem here is that while corals can adapt, we don't see any evidence that they are going to be able to adapt quickly enough to respond to these rapid changes," Eakin says.

The new report on the state of U.S. coral reefs finds conditions similar to other regions. Scientists estimate that at least 30 percent of the world's coral reefs are already dead. They also say that human activities harm not only the reefs, but also mankind.

Environment News Service
International Daily Newswire Since 1990 We Cover the Earth for You

Scientists in Brazil Find New Reefs Rich with Marine Life

July 9, 2008

FORT LAUDERDALE, Florida, July 9, 2008 (ENS) - Off the Brazilian coast, where the narrow continental shelf widens far out into the Atlantic Ocean, marine scientists have discovered reefs that they believe double the size of Brazil's largest and richest reef system, the Abrolhos Bank.

The newly discovered area is far more abundant in marine life than the previously known Abrolhos reef system, which is partially protected by the government of Brazil as one of the world's most unique and important reefs.

The researchers from Conservation International, the University of Espirito Santo and the University of Bahia announced their discovery in a paper presented Tuesday at the International Coral Reef Symposium now udnerway in Fort Lauderdale.

"We had some clues from local fishermen that other reefs existed, but not at the scale of what we discovered," said Rodrigo de Moura, Conservation International Brazil marine specialist and co-author of the paper.
A black grouper on Abrolhos Bank (Photo by R.B. Francini-Filho courtesy Conservation International)

"It is very exciting and highly unusual to discover a reef structure this large and harboring such an abundance of fish," he said.

Located about 70 kilometers from the coast of Bahia state, the Archipelago of Abrolhos is a marine national park, which protects part of the shallow reefs already known to science.

The Abrolhos Bank is considered one of the world's most important reefs because it is inhabited by a high number of marine species found only in Brazil, including species of soft corals, mollusks and fish found only on the Abrolhos shelf.

The Mussismilia coral genus, a relic group remnant of an ancient corals that went extinct long ago elsewhere in the Atlantic, is the dominant coral of the Abrolhos reef, which is structured in unique mushroom-like shapes.

Seven researchers from the three institutions used a boat with side-scan sonar equipment, which produces a three-dimensional map of the seabed.

They mapped the new reef structures in areas ranging from 15 to 200 kilometers (nine to 124 miles) offshore of the coastal city of Caravelos and in depths ranging from 20 to 73 meters (60 to 220 feet).

"Due to their relative inaccessibility and depth, the newly discovered reefs are teeming with life, in some places harboring 30 times the density of marine life than the known, shallower reefs," says Guilherme Dutra, Conservation International's director of marine programs in Brazil.
Dog snapper on the Abrolhos Bank (Photo by R.B. Francini-Filho courtesy Conservation International)

"That's the good news," he said. "The bad news is that only a small percentage of marine habitats in the Abrolhos are protected, despite mounting localized and global threats."

Localized threats include overfishing, coastal development and large scale land conversion to agriculture, shrimp farms, pollution, oil drilling and sedimentation.

Global threats include climate change and ocean acidification.

"The local fishermen always mentioned holes," Dutra told ENS in an interview, "but we didn't know what they were. Then we mapped some holes in the bank - 50 meters across and 20 meters deep - just in the middle of the shelf. Here it extends 200 kilometers from the coast at a depth of nearly 70 meters, not like most of the Brazilian coast along which is shelf is very narrow."

The researchers had been monitoring the shallow reefs of the Abrolhos Bank since 2000, when they started to find some large fish and pieces of coral that were not part of the shallow reef ecosystem they had been observing.

"The areas we mapped are all outside the nationally protected area," said Dutra, who plans future dives on the newly discovered reefs.

"We are doing another phase of the research right now with a remotely operated vehicle in which the University of Sao Paolo is also a partner," Dutra said. "We can see what kinds of corals and fish are there and what kinds of structures are on the bottom."

"These studies reveal the complexity and connectivity of the reefs in the Abrolhos region and will support conservation planning," said Dutra.

The studies are part of the Marine Management Area Science Program coordinated by Conservation International with the participation of research institutions around the world, and supported by the Gordon and Betty Moore Foundation and individual donors.

Now that the discovery has been announced, Dutra says Conservation International and fellow scientists will try to get the government of Brazil to extend protection to the newly found reefs.

"These new reefs are really important for biodiversity and for the abundance of fish in the shallow areas," he said.

The conservationists will work with officials at the Environment Ministry to achieve protection, but Dutra says success depends upon their ability to call the attention of the government as a whole to the importance of the newly discovered reefs.

CaymanianCompass the Cayman Islands' leading newspaper

Region's reefs in severe decline

By James Dimond

July 9, 2008

Only 25 per cent of coral reefs in the Caribbean are 'faring well', largely because of climate change and other human induced stresses, a large scale United States Government study has found.

The National Oceanic and Atmospheric Administration report – the most comprehensive ever conducted by the agency – also found that US coral reef ecosystems are under unprecedented strain, with half described as being in a 'poor' of 'fair' condition.

Coral reefs in the Pacific region, by contrast, seem to be faring better, with 69 per cent in good or excellent condition, the report found.

"This is absolutely a call to action," said Kacky Andrews, director of the NOAA Coral Program in a press release.

Since a 2005 coral bleaching epidemic that affected almost all of the Caribbean, researchers observed coral mortality of between 50 and 90 per cent in parts of the region, the report said.

The findings of the study were presented Tuesday to one of the largest international gatherings on coral reefs ever held. More than 2,500 marine scientists, government officials and conservations are attending the International Coral Reef Symposium, being held in Ft. Lauderdale, Florida, until Friday.

In a press release, NOAA said the US coral reef ecosystems, particularly those adjacent to populated areas, continue to face intense human–derived threats from coastal development, fishing, sedimentation and recreational use.

"Even the most remote reefs are subject to threats such as marine debris, illegal fishing and climate–related effects of coral bleaching, disease and ocean acidification," the agency warned.

It said coral reefs in the US had been declining for several decades. As an indicator of the ongoing decline, since its last report in 2005, two species of coral – elkhorn and staghorn corals – have become the first coral ever listed as endangered under the country's Endangered Species Act.

NOAA scientists also warned of the risk posed to coastal areas from storm action if reefs continue to decline.

Following the tsunami that devastated parts of Asia and Africa on Boxing Day, 2004, the researchers observed: “Where reefs were in good condition and structurally intact, adjacent areas were spared the full force of the waves. Where reefs had deteriorated from dredging, blast fishing and other destructive activities, there was little reef to break the waves’ momentum, which hit nearby coasts with unabated force.”

The 569–page document details coral reef conditions around in the both the Atlantic and Pacific Oceans.

“The report shows that this is a global issue,” said Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere

The report concluded: “As the global population continues to increase and demographic shifts toward coastal areas persist, even greater pressures will be placed on near–shore resources to satisfy human desires for food, culture, tourism, recreation and profit.

“Key issues related to usage and access to coral reef ecosystem resources are likely to intensify as conflicts over incompatible uses become more frequent,” it said.

“Looking ahead, decision makers must find a means to balance users’ demands with efforts to conserve the resources that remain.”

Central Florida Future.com
The Student Newspaper at the University of Central Florida since 1968 – Every Monday, Wednesday and Friday!

Florida coastline needs protection

July 10, 2008

The state of Florida is one of those locations that is world-renowned for the weather, the amazing sunsets and the oceans and ecosystems, among other things. Fortunately, the weather and the sunsets come naturally, but the Florida coastlines require vast amounts of upkeep and protection from natural and man-made occurrences.

According to a government report released on Monday, almost half the coral reef ecosystems in United States territory are in poor or fair condition. The National Oceanic and Atmospheric Administration said that the reefs often act as indicators of overall ocean health and the current status is well below what it should be.

"They are a major indicator of something that could go wrong with the environment," Tim Keeney, deputy assistant secretary for oceans and atmosphere at NOAA told the Associated Press. "If we lose the reefs, you lose a very significant and important habitat."

Keeney said that 25 percent of all marine species need coral reefs to live and grow, while 40 percent of commercially caught fish, such as grouper, use reefs as breeding territories. Keeney said that coral is a "sentinel species of the planet" and the reefs are like "the rainforests of the ocean."

This week, marine scientists from around the world are meeting at the 11th International Coral Reef Symposium in Fort Lauderdale to discuss the current state of reef health. Many researchers agree that the major underlying cause for the reef breakdowns is the temperature of the ocean continuing to rise. This is brought on by excessive carbon dioxide being released by burning fossil fuels, which is then absorbed by the oceans, making the waters more acidic and corrosive on corals. Other sources of reef breakdown include pollution from the coastlines, where sewage dumping is still a problem in some areas.

There seems to be a common factor in environmental research: the groups who care about and wish to protect and preserve the environment are far outnumbered by the groups who are willing to risk the future of the planet to make a few quick bucks.

John Fauth, a biology professor at UCF, went out with a team of researchers from around the state to study the effects of certain pollutants on coral. They hope to eventually find the link between the coral breakdown and the unnatural events that are causing it.

Divers worked at four inshore and offshore sites in Broward County near ocean outflows that dispose of sewage wastewater. Test results from corals sampled during the study were consistent with exposure to chemical contaminants. Stress responses were most pronounced in corals near an ocean outfall that discharges millions of gallons of treated wastewater each day.

What is it going to take to realize that the ocean is not a dumping ground for man-made waste? Politicians don't seem to mind until they start losing valuable tourist dollars, which, according to Fauth, may be sooner rather than later. He points out that the coral reefs off Florida's coasts are regarded as some of the best in the world, and eco-tourists from around the globe travel to the state to see them.

"It's a multi-billion dollar industry," Fauth said. "These tourists have lots of disposable income, and if they can't come here they will go to the Red Sea, Australia or Belize to see them. It's of huge importance."

Results from the study confirm what the World Research Institute's Reefs at Risk Program has said - coastal development and treated discharge are chronic sources of stress for coral reefs along Florida's extensive reef tract. The state is finally taking some action this week, which may be too little too late.

A new law was signed by Gov. Charlie Crist, which will eliminate the remaining waste pipes in the South Florida area. Under the guidelines, each wastewater facility must decrease nutrient pollutant discharged through the pipes by 90 percent within 10 years and stop the use of the pipes all together by 2025. So the state is giving companies 17 years to stop dumping waste right into the ocean - sounds about right for Florida's legislature.

Unfortunately, it is left up to us, the citizens who actually live in the areas that are affected the most. Whether it is beach erosion, land development, commercial overfishing or waste dumping, something must be changed. Floridians need to unite to protest this abuse and protect the invaluable coral reefs and the ocean's ecosystem before we exhaust our resources.

ScienceDaily
Your source for the latest research news

New Coral Bleaching Prediction System Calls For Low Level Of Bleaching In Caribbean This Year

July 10, 2008

Large colony of bleached Montastrea annularis. (Credit: NOAA)

ScienceDaily (July 10, 2008) — A new NOAA coral bleaching prediction system indicates that there will be some bleaching in the Caribbean later this year, but the event will probably not be severe. NOAA issued the first-ever seasonal coral bleaching outlook this week at the 11th International Coral Reef Symposium in Ft. Lauderdale, Fla.

The system also suggests that there is a risk of widespread bleaching in the Northwestern Hawaiian Islands in August, but little bleaching elsewhere during the northern hemisphere summer.

"The ability to predict coral bleaching events and provide advance warning is critically important to sustaining healthy reefs," said Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force. "When coral reef managers and reef users are alerted, they can mobilize monitoring efforts, develop response strategies, and educate reef users and the public on coral bleaching and possible effects on reef resources."

The new prediction system uses NOAA experimental sea surface temperature forecasts to develop maps of anticipated coral bleaching severity during the upcoming bleaching season (August to October). While NOAA's Coral Reef Watch Program uses satellite sea surface temperature data to alert managers and scientists around the world of the risk of coral bleaching, the new prediction system includes longer range temperature forecasts up to three-months.

Coral bleaching is associated with a variety of stresses, especially increased ocean temperatures. This causes the coral to expel symbiotic micro-algae living in their tissues -- algae that provide corals with food. Losing their algae leaves coral tissues devoid of color, and thus they appear bleached. Prolonged coral bleaching of over a week can lead to coral death and the loss of coral reef habitats for a range of marine life.

A major coral bleaching event occurred in the Caribbean in 2005, resulting in significant coral death in much of the region.

"As global temperatures continue to climb, predicting coral bleaching becomes even more critical," said C. Mark Eakin, Ph.D., coordinator of NOAA's Coral Reef Watch Program. "Our goal is to issue bleaching forecasts for coral reefs worldwide."

The new system was developed by scientists of NOAA's Coral Reef Watch in Silver Spring, Md. and NOAA's Earth Science Research Laboratory in Boulder, Colo., with funding from the NOAA Climate Program Office's Sectoral Applications Research Program and NOAA's Coral Reef Conservation Program.

Scuba Diving News

New Coral Reefs Teeming With Marine Life Discovered In Brazil

July 10, 2008

Scientists have announced the discovery of reef structures they believe doubles the size of the Southern Atlantic Ocean's largest and richest reef system, the Abrolhos Bank, off the southern coast of Brazil's Bahia state. The newly discovered area is also far more abundant in marine life than the previously known Abrolhos reef system, one of the world's most unique and important reefs.

Original post by Central Coast Today *and software by Elliott Back*

Post-Bulletin
If it matters to you, it matters to us

NOAA report: U.S. coral reefs in severe decline

By Brian Skoloff, Associated Press

July 10, 2008

FORT LAUDERDALE, Fla. -- Almost half the coral reef ecosystems in United States territory are in poor or fair condition, mostly because of rising ocean temperatures, according to a government report released Monday.

The reefs discussed in the National Oceanic and Atmospheric Administration report serve as breeding grounds for many of the world's seafood species and act as indicators of overall ocean health.

"They are a major indicator of something that could go wrong with the environment," said Timothy Keeney, NOAA's deputy assistant secretary for oceans and atmosphere.

Keeney said 25 percent of all marine species need coral reefs to live and grow, while 40 percent of the fish caught commercially use reefs to breed.

"If we lose the reefs, you lose a very significant and important habitat," Keeney said.

Since NOAA's last report in 2005, the Caribbean region has lost at least 50 percent of its corals, largely because sea temperatures have risen, Keeney said.

Elkhorn and staghorn corals have also been listed as threatened under the Endangered Species Act, the first corals ever to receive such protections based on rapid declines.

The 569-page report took 18 months to complete with input from 270 federal, state and university scientists. It documented 15 ecosystems in U.S. states and territories, including the U.S. Virgin Islands, Puerto Rico, Florida, Hawaii, American Samoa and Guam. It was released at the 11th International Coral Reef Symposium in Fort Lauderdale.

The report's authors noted it was the first detailed NOAA study to go beyond anecdotal evidence and patchy science to provide conclusive data that the nation's coral reefs are in trouble.

"We can actually document these declines now," said Jenny Waddell, coeditor of the study and a NOAA marine biologist.

The report found that coral bleaching caused largely by rising sea temperatures is a major factor. Carbon dioxide released by burning fossil fuels is absorbed by the oceans, making the waters more acidic and corrosive on corals.

Land-based pollution, such as sewage, beach erosion, coastal development and overfishing also are to blame.

The study does not make recommendations, but simply serves as what its authors deem a "call to action" for state governments and Caribbean countries.

Keeney sees corals as "a sentinel species of the planet," and calls them "the rain forests of the sea." Beyond their importance as breeding grounds for fish, reefs could hold cures for diseases.

He said there are also positive signs that people are beginning to understand "the value of coral reefs to our economy."

Kenney argues the report adds another layer of scientific certainty that man-made climate change is stressing the nation's oceans and could ultimately have huge economic and social impacts if its effects are not reversed.

"There's no question that ... man-made actions are the major cause for these losses and stresses on the reefs," Keeney said.

Dave Allison, a senior campaign director for the advocacy group Oceana, said the entire world's coral reefs "border on disaster."

"All the world's coral reefs are being stressed by both short-term and long-term human impacts," Allison said. "We've known about the human impact on corals for decades. It's just that the combination of problems confronting the corals have never come together in such a perfect storm."

ScienceAlert
Australia & New Zealand

Warming could disrupt coral's sex

July 10, 2008

Climate change may have major impacts on the reproduction of the world's corals, by changing some of the cues which trigger corals to spawn.

This is one of the major issues being explored by the world's leading coral scientists at the International Coral Research Symposium (ICRS) in Fort Lauderdale, Florida from 7 July - 11 July 2008.

It follows the recent discovery that the world's biggest orgasm – the synchronized mass-spawning of corals on major reef systems – may in fact be far more widespread than previously thought, to the point of being almost global.

"Previously it was thought that mass spawning events were mainly confined to a few major reef systems such as Australia's Great Barrier Reef and Ningaloo but not more tropical reefs like in the Coral Triangle/Indonesia," says Dr Andrew Baird of the ARC Centre of Excellence for Coral Reef Studies and James Cook University, who is co-chairing the conference session on coral reproduction.

"However new research is revealing these mass spawning events occur throughout the Indo-Pacific – from French Polynesia to the Red Sea – wherever there large numbers of coral species present, and even to a degree in the Caribbean."

Dr James Guest, of the University of Newcastle and co-chair of the session said: "We're still in the process of working out exactly what the cues are which prompt many different coral species to spawn together, on the same night.

"But it is clear that water temperature is a significant factor – and under climate change that is likely to change.

"This raises the risk that corals will become confused under climate change, start spawning all over the place at different times, reducing fertilization success and leading to less effective replenishment of coral populations."

The failure of reefs to regenerate properly – as has been the case in the Caribbean – makes them less resilient to withstand human impacts such as overfishing and pollution or climatic impacts such as hurricanes or bleaching.

Dr Baird said that there were many factors, such as moonlight-sensing genes, solar radiation, tides and possibly other seasonal cues such as daylength, which prompt corals to spawn en masse. However it is now clear that mass spawning is a feature of all diverse coral assemblages – particularly those dominated by Acropora and favid corals.

“This is one of the many paradigms about coral biology that has changed with the wider geographic focus of recent research, and it is evoking great scientific interest as we come to grips with the implications,” Dr Baird said.

A second paradigm challenged by recent findings is the view that coral species hybridize (or cross-breed) extensively during mass spawning.

“Most researchers now agree this is not the case, hybridization is both rare and is not a major force in coral evolution,” Dr Baird says.

“For example researchers have found that while the corals may all shed their gametes at the same time, these little packages of eggs and sperm in fact open at slightly different times, even a few minutes is enough to stop the gametes from different species meeting. Also many gametes are incompatible and when in competition, the right sperm usually wins. All this makes hybridisation between different coral species much less likely

“Bother these paradigm shifts, or changes in scientific perspective, will be among the issues warmly debated at the symposium,” Dr Baird says.

Extinction looming among reef corals

David J. Tenenbaum

July 10, 2008

In a new and disturbing study issued today, an international group of scientists reported that one-third of coral reef species, including some of the most common and important reef-builders, could face extinction. The assessment is grim news for marine biodiversity, says first author Kent Carpenter, of Old Dominion University (Norfolk, Va.). "We know that a huge percentage of the biodiversity in the oceans is found on coral reefs." Previous studies have focused on reefs as a whole, rather than the corals that comprise them, he says. "But if the coral species no longer exist, then reefs will not exist, and the potential loss of biodiversity in a cascading effect is tremendous."

Coral reefs are home to numerous species of fish, shellfish and other marine organisms, and also play an essential role in protecting shorelines from the ocean.

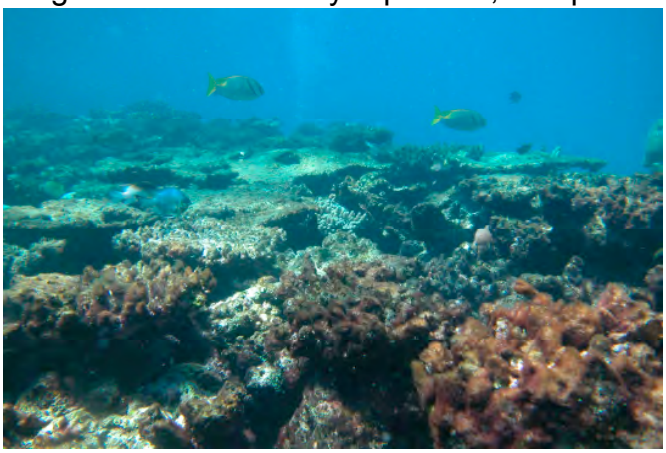
"Reefs are the most biodiverse ecosystems in the oceans, and if you remove the foundation of the ecosystem, the potential for loss of biodiversity is tremendous."

The researchers looked at all 845 known species of symbiotic reef-building corals. These animals provide a stony house for algae which, in return, perform photosynthesis and release nutrients that nourish the coral. The researchers used data on population changes and geographic range to classify extinction risks according to categories from the International Union for the Conservation of Nature, ranging from "least concern" (very low probability of extinction) to the "threatened" categories ("vulnerable," "endangered," and "critically endangered").

Adequate information existed to support classification of 704 species, and about 33 percent of them were found to be in one of the threatened categories, the researchers found. That was a shock, Carpenter says. "We initially went in knowing that corals ... have very wide distribution. ... We were really overwhelmed at the percentage of species that fall into the threatened category, and these are also the most common corals on many reef ecosystems."

Seeing the reefs and the corals

It's no secret that many coral reefs are in bad shape, due to a witches-brew combo of overfishing, disease, warming oceans, and pollution due to erosion, sediment and coastal development. In 1997-98, during a huge "bleaching event," warm water and perhaps other causes forced the coral to expel their essential symbiotic algae, and "Large tracts were totally wiped out," Carpenter says, "lost, for all time, apparently."



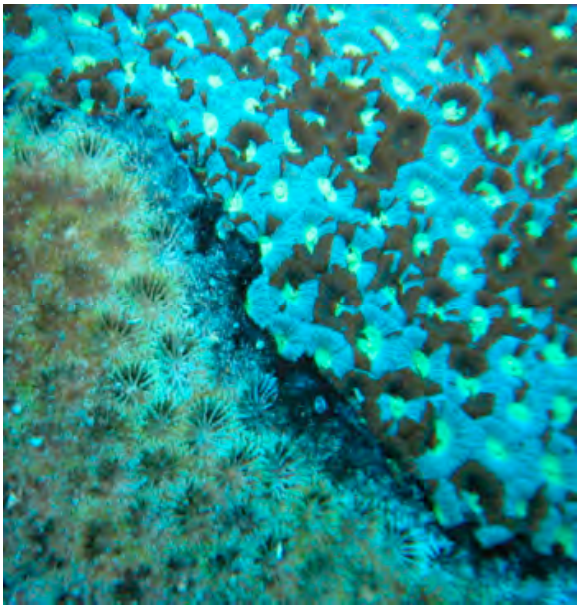
Coral bleaching at Kelso Reef, on the Great Barrier Reef in Australia. Bleaching occurs when corals expel their symbiotic algae, and it can kill the colony. Image © Cathie Page

A small percentage of the bleached reefs have recuperated, Carpenter says, generally those that "were the most isolated from human impacts." Sediment can deprive the symbiotic algae of needed sunlight, while overfishing can cause indirect harm. In the Caribbean, for example, removing the fish that feed on non-symbiotic algae can allow them to flourish and smother the coral. Coral are a breeding and spawning ground for many fish species, and so the decline of the Caribbean corals endangers the local food supply as well as a prime tourist attraction. The Caribbean had the largest percentage of species in the highest risk categories, reflecting damage from intense coastal development.

Shallow water blues

Around the world, many near-surface coral -- which is where most reefs occur -- are threatened as global warming raises water temperatures and promotes bleaching. Although deeper corals are less affected, "The bottom line," Carpenter says, "is that if CO2 continues to increase, and causes more and more coral bleaching and disease events, then there are many corals that will not be able to replenish themselves."

As an additional hazard, billions of tons of atmospheric carbon dioxide is absorbed in ocean water each year, which becomes more acidic and attacks corals and other animals, such as clams, that build their structure from calcium carbonate.



Coral diseases are another cause of decline among reef-building species. Black band disease strikes a colony of Favia speciosa at the Great Barrier Reef, Australia. (Photos of healthy Favia speciosa.) Image © Cathie Page

Coral reefs are just one victim of greenhouse warming, but reefs will still benefit from local regulations, even if the level of carbon dioxide in the atmosphere continues to rise, Carpenter says. "We can help those corals that still exist get through the crisis by enacting as many other conservation efforts as we can," including "strict fishing regulations, and strict reductions in other human effects, such as sedimentation, pollution and coastal development."

As intended, the study offered a big-picture view of coral, and the big picture is that a higher percentage of coral species are imperiled than any large group of land animals except amphibians. "We have all heard about the effects of climate change on terrestrial organisms," says Carpenter, "but we are beginning to understand that one of the most important habitats in the ocean is most at risk."

- *David J. Tenenbaum*

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THE AGE

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July 10, 2008

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The Sydney Morning Herald

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thewest.com.au The West Australian

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AAP

SCIENTIFIC AMERICAN

Coral Grief: Warming Climate Threatens Reef Destruction

By David Biello

July 10, 2008

If the reefs go, it won't just be corals that disappear from the world's oceans

CORAL CRISIS?: Nearly one-third of coral species, like Purites pukoensis pictured here, are threatened with extinction by climate change and other manmade problems.
©DONALD C. POTTS

A survey of 704 species of coral—tiny polyps with hard shells, some of which form spectacular underwater reefs—has found that nearly 33 percent of them face a greater threat of becoming extinct as the globe warms. The main culprits, according to the study published today in Science: bleaching—when corals expel the algae that normally feeds them and gives them color—as well as disease outbreaks in coral weakened by warming sea-surface temperatures.

"If we cannot manage the [carbon dioxide] in the atmosphere, there's a very good possibility that bleaching events and disease events will be occurring with greater frequency and, if that occurs, there is a good chance that some species are not going to

be able to replenish themselves fast enough," says marine biologist Kent Carpenter of Old Dominion University in Norfolk, Va., who led the research. "Add ocean acidification [also caused by rising CO2 levels in the atmosphere], which is even more insidious than ocean warming, and you've got a real dire picture."

Researchers assessed the health of coral species worldwide by measuring declines in their abundance on the reefs and ocean beds they call home and then used criteria developed by the International Union for Conservation of Nature (IUCN) to determine the risk of extinction. Previous studies have found declines of as much as 80 percent in the number of coral living within particular reefs.

"Corals are the backbone of the ecosystem," Carpenter notes, and reefs harbor roughly one quarter of all known marine species—from fish to algae. "What is going to happen to that huge biodiversity that is dependent on coral reefs? We don't know, but our consensus is that it would most probably lead to a massive loss of biodiversity in the oceans."

A similar assessment of coral health in U.S. waters released this week by the National Oceanic and Atmospheric Administration (NOAA) concluded that roughly half of the coral species in these waters are struggling and continue to decline.

"Predictions are that within 50 to 100 years not only will we see decline in growth rates for corals and other shell-dependent species—they may actually begin to dissolve," says marine biologist Jenny Waddell of the NOAA Center for Coastal Monitoring and Assessment, who helped prepare the report. Climate change "is somewhat of an x-factor. We don't really know how resilient corals are."

The U.S. government did, however, take the unprecedented step in 2006 of listing two species of coral—Elkhorn (Acropora palmata) and Staghorn (Acropora cervicornis)—as threatened under the Endangered Species Act. This means that both Caribbean reef-builders face a significant risk of extinction within the next 30 years. Plans for how to deal with that threat and protect the two species are still being finalized, according to Weddell.

But not all marine biologists agree that corals are in dire straits. "Clearly lions and tigers are threatened by extinction when there are currently only a few thousand of them left. But is a coral species, whose population was reduced from maybe a billion to 300 million or even a few hundred thousand, really threatened by extinction? Personally, I very much doubt it," says marine biologist John Bruno of the University of North Carolina at Chapel Hill. "But I think the ecological function of many reef-building corals is threatened by quite drastic losses in their abundances."

Instead of focusing on saving individual coral species, Bruno argues, the overall health of the oceans could be protected by managing the protection of coral reefs to maximize their overall abundance—which would then also have the effect of maximizing the numbers of all the species that rely on them for food or habitat.

The goods news is that coral reefs can recover within decades, according to Bruno and Waddell, a process that has already started to occur at some reefs in the Caribbean and Pacific. But only if they are free of man-made pressures such as water pollution, overfishing and climate change.

And if the tiny polyps continue to be pummeled by these factors? The outlook is grim, Carpenter warns. "Whether or not [coral species] actually do go extinct depends on whether corals continue to have more frequent bleaching events and disease events because of increased sea-surface temperatures," he says. "If these events continue to become more frequent, there's a real possibility."

LIVENEWS

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brisbanetimes

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Climate change hurts coral sex life

July 10, 2008

Climate change could be confusing coral about when to have `sex'.

Researchers have recently discovered that the marine organisms spawn almost around the world at the same time in what experts say may be the world's biggest orgasm.

But experts believe global warming could leave corals confused, leading them to spawn at different times and in different places.

This cuts their fertilisation and lowers the replenishment rates for the fragile species, according to coral scientists meeting this week at the International Coral Research Symposium (ICRS) in Fort Lauderdale, Florida.

Co-chairing the conference session on coral reproduction is Dr Andrew Baird of the ARC Centre of Excellence for Coral Reef Studies at James Cook University in Townsville.

Dr Baird said it was previously thought that mass spawning events in coral were mainly confined to a few major reef systems, such as Australia's Great Barrier Reef and Ningaloo Reef.

"However, new research is revealing these mass spawning events occur throughout the Indo-Pacific, from French Polynesia to the Red Sea, wherever there are large numbers of coral species present, and even to a degree in the Caribbean," he said.

But global warming is putting the mass release of coral eggs and sperm under threat, said the session's co-chair Dr James Guest of the University of Newcastle.

"We're still in the process of working out exactly what the cues are which prompt many different coral species to spawn together, on the same night," Guest said.

"But it is clear that water temperature is a significant factor and under climate change that is likely to change.

"This raises the risk that corals will become confused under climate change, start spawning all over the place at different times, reducing fertilisation success and leading to less effective replenishment of coral populations."

If the corals fail to regenerate properly, as has been the case in the Caribbean, they become less able to withstand human impacts such as over fishing and pollution or climatic impacts such as hurricanes or bleaching.

The scientists say there were many factors, including moonlight-sensing genes, solar radiation, tides and possibly other seasonal cues such as the length of days, which prompt corals to spawn en masse, particularly the Acropora and favid varieties.

thedaily.com.au
Sunshine Coast Daily Online

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Challenges to protect Asia Pacific reef systems

July 10, 2008

New research on what's been dubbed the Asia-Pacific's "Coral Triangle" has been presented to the International Coral Reef Symposium underway in the United States.

Its focus is one of the world's biodiversity hotspots - an area covering nearly 200-thousand square kilometres and taking in waters off Indonesia, Malaysia, the Philippines, Papua New Guinea, Solomon Islands and East Timor.

The new work, on how coral species are related to each other, illustrates some of the complex challenges in protecting reef systems.

Presenter: Corinne Podger
Speaker: Mark Erdmann, of Conservation International in Bali

The Star

… and coral reefs that keep on disappearing

July 10, 2008

Miami - Global warming and pollution are decimating coral reefs around the world, with only 25% in good health in the Caribbean, US experts have warned.

In other areas of the world such as the Pacific basin, nearly 70% of the coral reefs are either thriving or in good condition, the National Oceanic and Atmospheric Administration (Noaa) said in a report.

Noaa this week told the 11th International Coral Reef Symposium in Fort Lauderdale, Florida, that nearly half of coral reef ecosystems in the United States are in poor or barely passable condition.

"This is absolutely a call to action," said Noaa Coral Programme director Kacky Andrews.

To reverse the deterioration and lessen the threat to coral reefs, she strongly suggested curbing emissions of carbon dioxide and other greenhouse gases and the use of fertiliser, prevent damage from anchors and stop the sale of coral for jewellery.

"In the Caribbean, parts of Jamaica, Dominican Republic and Mexico that have been strongly impacted by hurricanes in the past few years, large communities of coral have been lost," Diego Lirman, a University of Miami Rosentiel School of Marine and Atmospheric Science expert, he said.

Lirman said the Caribbean region, which sustains only 60 or 70 species of coral compared to more than 500 in the Pacific, "has lost a large part of its most ancient corals, which … can be more than 500 years old and make up the reef's basic structure."

While reports indicate a worldwide reduction in coral reef covering, in the Caribbean the problem is compounded by the reefs' increasingly slow rate of recovery, Lirman said.

Nonetheless, he said the University of Miami has a coral reef recovery programme.

"We extract some corals, help them grow and get stronger and return them to their communities in better condition so they can reproduce, or we take them to places where reefs have died off," Lirman said.

In Florida, development and overfishing also pose a serious threat to coral reefs, according to Chantal Collier, with the Florida Department of Environmental Protection.

The five-day Coral Reef Symposium ending Friday brings together some 2,500 scientists, conservationists and government officials from 114 countries.

It is held every four years.

- Sapa-AFP

INDYSTAR.COM

Reefs' great barrier

Fashion takes its toll on sea coral

By Samantha Critchell / Associated Press

July 10, 2008

NEW YORK -- Sea coral is blessed with wonderful colors, an intricate design and memories of the lapping ocean. It's no wonder that the worlds of fashion and home decor are in the midst of a love affair with it.

Some argue, though, that coral is too precious to wear.
Advertisement

"We want to discourage consumers from purchasing coral," said scientist Andrew Baker. "It's like ivory. It's a product of a living animal, and the harvest of this item is unsustainable."

It's unsustainable not because new coral won't grow, he says, but because there are no limits on the use or sale of coral and it's being harvested at a rate that nature can't keep up with.

"Dredging deep-sea coral forests is like clear-cutting the rainforest for sparrows: You're doing so much damage for something so small," said Baker, an assistant professor at the University of Miami and the Pew Institute for Ocean Science.

Baker and a team from the Too Precious to Wear campaign, helmed by the nonprofit group SeaWeb, is lobbying to add pink and red corals, also known as Corallium, to the Convention of International Trade in Endangered Species, the global group that has put limits on rhinoceros horns, tiger feet and ivory. The coral made it to the last round of negotiations in 2007, but failed to make it to the final list.

Next week, the pressures corals are facing will be discussed at the International Coral Reef Symposium.

But Baker doesn't want the world to wait. SeaWeb had noticed in the past couple of years that coral -- real, faux and artistic interpretations -- was all over the fashion runways and home-decorating magazines, explained Julia Robertson, program manager for Too Precious to Wear.

Around the same time, though, global warming, for which coral is considered a key indicator, had become a buzz topic, so marine-science groups saw an opportunity to raise public awareness, she said.

"We wanted to tap into the recognition of coral in fashion, design, jewelry and home decor," Robertson said. The campaign was launched earlier this year with partners including Tiffany & Co. and Chantecaille Beaute.

Sylvie Chantecaille says her beauty company got involved largely because of her interest in the ocean.

"I grew up in the South of France diving, and I have seen a change in the ocean over the years," she explained. "When you spend so much time under the water, you realize how amazing it is."

So Chantecaille developed Protect the Paradise compacts -- one with eye shadow, another with powder -- embossed with miniature ocean scenes to raise money for marine research and conservation. The project put Chantecaille in touch with Baker, who taught her to appreciate coral's beauty from afar.

"It's going to become like ivory," Chantecaille said. "I used to wear ivory, but I'd never wear it today now that I know what it means and what it symbolizes."

Tiffany stopped selling coral jewelry in 2003 and instead uses precious stones to replicate the exotic color and shapes. The company brought the bulk of manufacturing in house, allowing it to examine sourcing, explained Linda Buckley, Tiffany vice president of public relations. While coral was not a huge part of the assortment, it set off some bells.

"Tiffany is closely associated with the natural world -- it's where we get our inspiration and materials," Buckley said. "If you have healthy coral reefs, you have healthy oceans, healthy seabeds and healthy oysters -- and we get our pearls from healthy oysters."

Coral from shallow reefs, which are mostly a light color, tend to be used in interior decor, while the deep-sea corals -- known as the "precious" black, pink and red corals from the Mediterranean Sea, Indian Ocean and the Pacific near Hawaii -- are used for jewelry.

Yet, you only have to go to South Florida to find white coral being sold as a souvenir. This frustrates Baker, and he thinks it confuses tourists.

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MiamiHerald.com

Coral reefs are a shared resource -- and a shared concern

By Richard Dodge

July 10, 2008

Living coral reefs abound in South Florida, from the Dry Tortugas through the Florida Keys to Martin County. Our reef ecosystems are irreplaceable resources, providing economic and bio/geological services: They protect the coastline from erosion, create the sand for our wonderful beaches, generate habitats for marine life and offer economic value from varied recreational and commercial uses.

In fact, a Broward County and National Oceanic and Atmospheric Administration study showed that reefs off the shores of Broward generate more than $2 billion in annual sales and income, creating more than 36,000 jobs.

However, our important natural resource is under siege. Coral reefs are threatened by stressors including coastal construction, pollution and overfishing. They are succumbing to climate change, which raises ocean temperatures, bleaches corals and weakens their limestone structures.

It is our shared responsibility to save them.

This year has been formally designated as the International Year of the Reef, highlighted by the 11th International Coral Reef Symposium, which is bringing more than 2.500 of the world's leading scientists to the Broward Convention Center this week. The theme, Reefs for the Future, will bring the plight of reefs into the forefront and use the collective minds of researchers, managers and conservationists to lay the ground work to develop workable solutions to save ocean reefs.

But you don't have to be a scientist to make a difference. With increased awareness about the importance of coral reefs and threats to their survival, we can each work to save coral reefs. The symposium's Exhibits and Educational Center will feature free educational presentations, exhibits and demonstrations that are open to the public.

Nova Southeastern University's Oceanography Center and its National Coral Reef Institute are proud to spearhead the local organizing committee of this important conference. With increased knowledge and awareness, coral reefs can have a bright future.

It's up to us to make sure our grandchildren and their children will have the opportunity to experience the wonders of this magnificent marine ecosystem.

Richard Dodge is dean of the Nova Southeastern University Oceanographic Center, executive director of the National Coral Reef Institute and chair of the local organizing committee for the 11th International Coral Reef Symposium, which runs through Friday at the Broward County Convention Center.

The CourierNews
CourierNewsOnline.com Member of the Sun-Times News Group

Sea lovers: Endangered corals too precious to wear

By Samantha Critchell, The Associated Press

July 10, 2008

NEW YORK -- Sea coral is blessed with wonderful colors, an intricate design and memories of the lapping ocean. It's no wonder that the worlds of fashion and home decor are in the midst of a love affair with it.

"We want to discourage consumers from purchasing coral," says scientist Andrew Baker. "It's like ivory. It's a product of a living animal and the harvest of this item is unsustainable."

It's unsustainable not because new coral won't grow, he says, but because there are no limits on the use or sale of coral and it's being harvested at a rate that nature can't keep up with.

"Dredging deep-sea coral forests is like clear-cutting the rainforest for sparrows: You're doing so much damage for something so small," says Baker, who is also an assistant professor at the at the University of Miami and the Pew Institute for Ocean Science.

Baker and a team from the Too Precious to Wear campaign, helmed by the nonprofit group SeaWeb that also took on the caviar and restaurant seafood causes, is lobbying to add pink and red corals, also known as Corallium, to the Convention of International Trade in Endangered Species, the global group that has put limits on rhinoceros horns, tiger feet and ivory. The coral had made it to the last round of negotiations in 2007, according to Baker, but failed to make it to the final list.

Next week, the pressures corals are facing will be discussed at the International Coral Reef Symposium, which will be attended by more than 2,500 scientists, economists, conservationists and educators. The theme of the meeting is reefs for the future.

Baker doesn't want the world to wait. SeaWeb had noticed in the past couple of years that coral -- real, faux and artistic interpretations -- was all over the fashion runways and home-decorating magazines, explains Julia Robertson, program manager for Too Precious to Wear.

Around the same time, though, global warming, for which coral is considered a key indicator, had become a buzz topic, so marine-science groups saw an opportunity to raise public awareness, she says.

"We wanted to tap into the recognition of coral in fashion, design, jewelry and home decor. It's easier to talk to people when they know what you're talking about," Robertson says.

The campaign was launched earlier this year with partners including Pottery Barn, Tiffany & Co., Lela Rose, Vena Cava and Chantecaille Beaute.

Sylvie Chantecaille says her beauty company got involved about 18 months ago, largely because of her interest in the ocean.

"My whole family snorkels, dives. I grew up in the South of France diving and I have seen a change in the ocean over the years," she explains. "When you spend so much time under the water, you realize how amazing it is. I wanted to do something to protect it."

So Chantecaille developed Protect the Paradise compacts -- one with eye shadow, another with powder -- embossed with miniature ocean scenes to raise money for marine research and conservation. The project put Chantecaille in touch with other coral fans, including Baker, who taught her to appreciate their beauty from afar.

"I love the look of coral. They're so beautiful," Chantecaille says. "I used to be completely in love with coral jewelry so I totally understand the appeal."

But, she adds, "It's going to become like ivory. I used to wear ivory but I'd never wear it today now that I know what it means and what it symbolizes."

Tiffany stopped selling coral jewelry in 2003 and instead uses precious stones to replicate the exotic color and shapes found in the sea. The company brought the bulk of manufacturing in house, allowing it to examine sourcing, explains Linda Buckley, Tiffany vice president of public relations. While coral was not a huge part of the assortment, it set off some bells.

"Tiffany is closely associated with the natural world -- it's where we get our inspiration and materials," Buckley says. She adds: "If you have healthy coral reefs, you have healthy oceans, healthy seabeds and healthy oysters -- and we get our pearls from healthy oysters."

(Buckley notes that Tiffany has also examined their use of cultured pearls and decided it doesn't pose the same environmental risks as coral.)

"No one disputes coral as an object of beauty," says Baker, "but it is more important as a habitat."

Coral from shallow reefs, which are mostly a light color, tend to be used in interior decor, while the deep-sea corals -- known as the "precious" black, pink and red corals from the Mediterranean Sea, Indian Ocean and the Pacific near Hawaii -- are used for jewelry.

Yet, you only have to go to South Florida, where Baker is based, to find white coral being sold as a souvenir in kitschy shell shops, even though it was harvested thousands of miles away. This frustrates Baker and he thinks it probably confuses tourists, who are getting a mixed message not to disrupt the reefs when scuba-diving, but allowing them to buy chunks of dead coral.

"It's like going to a zoo," he says.

"You learn about threatened tigers and then go to the zoo store and find a tiger pelt."

Fashion and decor surely aren't the main culprits in the destruction of the reefs, but artist Michael Aram makes the case to take them out of the equation entirely.

"One coral necklace doesn't necessarily mean the end of the world, but why, when you can still celebrate it in a form that's representational, still use it? It doesn't make sense," he says.

Aram favors casting coral sculptures in metal, then painting with enamel. Coral's natural unpredictable shape allows him a lot of flexibility, he says.

"My coral is evocative of the real thing but mine can be a fantasian coral -- you can be pretty wild with coral."

AntiguaSun Established 1997

Coral reefs in crisis: Mussington

July 10, 2008

by Aarati Jagdeo

A marine biologist is blaming coastal developments and other factors for the destruction of what he estimates to be 90 per cent of the fringing reefs around Antigua and Barbuda.

John Mussington, a marine biologist based in Barbuda, said there has been a significant decline in coral life throughout the region, especially in Antigua and Barbuda. He opined that the percentage of healthy coral in the Caribbean region is significantly lower than the 25 per cent being reported by the US experts.

US scientists recently made the startling revelation that only 25 per cent of the Caribbean Sea's coral reefs is in good health. This announcement was made at the 11th International Coral Reef Symposium in Fort Lauderdale, Florida.

"I can tell you that the fringing reefs around Antigua and Barbuda were healthy and alive in the mid-80s when I started diving…today over 90 per cent of the fringing reef structures are dead," Mussington told the Antigua Sun yesterday.

He stated construction of coastal hotels contributes to the increase in coral death. "The waste water from these hotels often finds its way into the marine environment, carrying chemicals which stimulate the growth of parasitic algae that stifle the coral and degrades the overall water quality," he explained

Mussington claims that all should care about the coral reefs plight because they are our first defence against ocean surges during hurricanes. If they die, "the waves are going to cause erosion, with erosion we will lose our beaches, without beaches where is our tourism product? That constitutes a direct impact on our economy."

Additionally, the destruction of the natural habitat of fish and seafood, which are integral parts of our diet, will have severe consequences not only for natives, but also for those who visit the region to enjoy the luxury of fresh seafood.

Mussington stressed that the islands as we know them would not exist without the harmonious relationship between the land, wetlands, beaches and coral reefs. "You mess with any one component of this system and it will negatively affect all of them."

The consensus of the National Oceanic and Atmospheric Administration (NOAA), scientists and researchers, is that the critical situation surrounding the region's reefs is caused primarily by global warming and man-manufactured pollution.

According to reports, Diego Lirman, a science expert at the School of Marine and Atmospheric Science at the University of Miami, the Caribbean region has lost a large part of its most ancient corals. These corals, which in some cases are more than 500-years-old, make up a reef's basic structure.

Acting Chief Environmental Officer Ato Lewis told the SUN that care needs to be taken about generalising such studies. He indicated that it is not clear what the state of Antigua and Barbuda's reef is currently.

Lewis did concede, however, that he is concerned about the state of coral reefs in Antigua and Barbuda with reference to climate change and biological parasites. At the same time, he questioned whether the NOAA research could be applied to Antigua, pointing out the discrepancy that would emerge if researchers were gathering evidence in areas expected to have high levels of pollution, such as Puerto Rico or the US Virgin Islands.

When asked what Antigua and Barbuda is doing to protect its coral reefs from a destructive fate, Lewis stated that the Environment Division in conjunction with the Fisheries Division monitors hotel and ship activity closely.

However, Lewis stated, "Doing marine research is expensive, and Antigua, unlike some of the other countries, does not have a coastal zone management unit, which would be better equipped to assess the situation with our coastal environment."

Bryan Cooper, president of the Environmental Awareness Group (EAG), was not surprised by NOAA's findings. Cooper said that although he is not a marine biologist, he knows enough about land-based sources of pollution to expect human activity on land to have a detrimental effect on coral health in near-shore areas.

Cooper cited run-off pollutants from agricultural sites as causing harm to coral structures. The distance from these sites to the sea is relatively short so chemicals hardly decompose before reaching the shore.

This problem is exacerbated by the eradication of wetlands, which act as a natural filter and are "one place where the mediation of drainage water can take place before heading out to sea."

Uncommon Ground

Reflections on academics, the environment, and biodiversity

A little good news about coral reefs

July 10, 2008

If you read this site regularly, you probably heard about the report NOAA released on Monday concluding that half of the coral reef systems in the United States are in decline (news report from The Associated Press).This morning there's some good news.

Off the Brazilian coast, where the narrow continental shelf widens far out into the Atlantic Ocean, marine scientists have discovered reefs that they believe double the size of Brazil's largest and richest reef system, the Abrolhos Bank.

...

"Due to their relative inaccessibility and depth, the newly discovered reefs are teeming with life, in some places harboring 30 times the density of marine life than the known, shallower reefs," says Guilherme Dutra, Conservation International's director of marine programs in Brazil.

"That's the good news," he said. "The bad news is that only a small percentage of marine habitats in the Abrolhos are protected, despite mounting localized and global threats." (news report from Environmental News Service).

Conservation International and other groups will ask the Brazilian government to extend protection to the newly discovered reefs. Here's hoping that they are successful.

New governance thinking efficient cure for global coral crisis

July 10, 2008

A new and alternative management of Australia's Great Barrier Reef Marine Park has been hailed as a groundbreaking international model for better managing the oceans, in a leading US scientific publication.

In a study published 7 July in the prestigious Proceedings of the US National Academy of Science, Per Olsson and Carl Folke of the Stockholm Resilience Centre at Stockholm University and Terry Hughes of the ARC Centre of Excellence for Coral Reef Studies in Australia have identified the keys to successful marine ecosystem-based management.

Their findings were revealed today at the 11th International Coral Reef Symposium, in Fort Lauderdale, Florida, where the world's leading coral reef scientists and managers have gathered.

'The core issue is that the global 'coral crisis' is really a crisis of governance,' says Prof. Terry Hughes. 'Round the world, people are struggling with the difficulties of managing these sensitive coral ecosystems in the face of all the human and natural pressures they are subject to.'

'Many people have tried to protect marine environments but as soon as some form of governance was put in place and everyone relaxed, it was overtaken by events - either human or natural,' Hughes says.

According to co-writer Per Olsson, the critical realisation in the case of the Great Barrier Reef was that its management had to be flexible and adaptive, based on continual scientific monitoring of what is going on.

'This flexibility was important in order to deal with change, and to navigate the transition to an improved system of governance. It enabled new interactions and ways of working together with the authorities. Such flexibility is fundamental for bureaucratic organisations,' Dr Olsson says.

The paper highlights the role of leadership and consensus-building, and credits the Great Barrier Reef Marine Park Authority and its Chair, Virginia Chadwick, with having sought and gained the support of the public, industry and governments at all levels for

putting the management of the world's largest coral reef system onto an ecological footing.

'Our study shows the importance of leadership and strategies for responding to signals of change before ecosystem collapse occurs,' Dr Olsson says.

A critical step in the process was to convince local communities that the reef was facing many threats, and to enlist public support for managing it more flexibly. This was accomplished through a major 'Reef Under Pressure' community consultation campaign.

'Combined with the declines in populations of dugongs, turtles, sharks and other fish, polluted runoff from the land and global warming impacts, it became clear to everyone that the original management system was becoming less and less adequate as the pressures on the reef grew.' Prof. Hughes says.

One of the most visible and controversial initiatives under the new regime was to extend the area closed to all forms of fishing from 6 to 33 per cent of the total reef area - creating the largest no-take zone in the world.

'The Barrier Reef example illustrates a shift in thinking to an integrated view of humans and nature, based on active stewardship of marine ecosystems for human well-being' Dr Olsson says.

Backing all of this was the necessary legislation and regulatory powers and also having a sufficient flow of good science to inform the management process constantly. The study underscores the particular importance of integrating good science with good policy.

The report concludes that laws alone cannot bring about the changes necessary to protect the world's ocean ecosystems - good science and public participation, understanding and support are also vital.

'In contrast to the GBR case, marine zoning in some countries has been severely constrained because of poverty, inflexible institutions, lack of public support, difficulties developing acceptable legislation, and failures to achieve desired results even after zoning is established. These are the critical barriers that we must urgently address and overcome' Professor Hughes said.

'Understanding successes and failures in marine governance systems is a first step in improving their adaptive capacity to secure ecosystem services in the face of uncertainty and rapid change,' Prof. Folke says.

Source: Swedish Research Council

"America's Best Political Newsletter" Out of Bounds Magazine
counterpunch
edited by alexander cockburn and jeffrey st.clair

Coral Reef Meltdown

By Alan Farago

July 10, 2008

The past few days I've been thinking about Dr. James Speth's call for "civic unreasonableness" and NASA's Dr. James Hansen's appeal for scientists to drop "objectivity" from muting their involvement, communicating to the public the impacts of global warming.

Of the canaries in the climate change coal mine, the coral reef is one of the most visible. A listserve for coral reef scientists and professionals is buzzing with comments that US government agencies and scientists have chosen to downplay, or to play only as politically acceptable, the devastation to coral reefs in Florida.

"The reef is for all practical purposes dead and a phase shift to an algal reef with soft corals has occurred." This observation, between Florida Keys conservation activists who have spent decades in the effort to protect natural resources and the Keys coral reef tract, was made in response to ongoing, testy exchanges on the listserve reaching an international audience.

A commercial fisherman in the Keys commented: "... the reef continues to decline and NOAA (National Oceanic and Atmospheric Administration) continues to congratulate its self and give awards to others for a job well done! .. I don't think anyone questions the passion of many of the sanctuary volunteers or SAC (sanctuary advisory committee) members, but what are they actually accomplishing? The coral continues to die off at an unprecedented rate along with the continued water quality degradation. That is not cause for celebration. Yet, the awards and self congratulations continue. The danger in this approach to management is that it attempts to make the public feel that all is well..."

And it is not just the Keys coral reef. Florida Bay is a catastrophe, obliterated by serial algae blooms passing through hundreds of square miles of shallow water like toxic clouds, yet many scientists are still picking at the scabs of scientific arguments decades old; unwilling to engage the politics of water pollution and the special interests who are offended.

Well, some say, scientists must not engage in politics.

In a statement released as part of the International Coral Reef Symposium, a gathering of hundreds of scientists and policy makers from around the world who are meeting this week in Fort Lauderdale, NOAA reports: "... nearly half of coral reef ecosystems in the United States are in poor or barely passable condition. "This is absolutely a call to action," said NOAA Coral Program director Kacky Andrews."

But some on the coral reef listserve angrily dismiss repetitive "calls to action" when so little has been done to stop the flood of pollution, nutrients and other human impacts on Florida Bay and the coral reef tract. They say, also, that the incessant drumbeat of the past thirty years -- more science is needed-- is wasted noise.

Of hundreds of thousands of human generations, ours is the first one to witness the loss of so much of the natural world. It is such a simple and remarkable point.

There is a larger context and urgency for this debate on coral reefs: the issue is no longer hard corals or soft corals or even macroalgae suffocating the base of the ocean's food chain: it is whether or own species can avoid mass die-offs as a result of the unchallenged rise of carbon emissions to levels the planet has not experienced for tens of millions of years.

Alan Farago lives in south Florida. He can be reached at: afarago@bellsouth.net

peopleandplanet.net
people and coasts and oceans

Philippines coral reefs 'slowly dying'

July 10, 2008

Nearly all of the ecologically-fragile coral reefs in the Philippines are under severe threat from economic development and climate change, according to an update circulated by the Southeast Asian Centre of Excellence (SEA CoE). Henrylito Tacio reports from the 11th International Coral Reef Symposium, in Fort Lauderdale, Florida.

The Philippines is part of the so-called "coral triangle," which spans eastern Indonesia, parts of Malaysia, Papua New Guinea, Timor Leste and the Solomon Islands. It covers an area that is equivalent to half of the entire United States.

Although there are 1,000 marine protected areas (MPAs) within the country, only 20 per cent are functioning, the update said. MPAs are carefully selected areas where human development and exploitation of natural resources are regulated to protect species and habitats.

Coral damage caused by boat anchors, Philppines© Ken Bura

In the Philippines, coral reefs are important economic assets, contributing more than US$1 billion annually to the economy.

"Many local, coastal communities do not understand or know what a coral reef actually is, how its ecosystem interacts with them, and why it is so important for their villages to preserve and conserve it," SEA CoE said in a statement.

Unknowingly, coral reefs – touted to be the tropical rainforest of the sea – attract a diverse array of organisms in the ocean. They provide a source of food and shelter for a large variety of species including fish, shellfish, fungi, sponges, sea anemones, sea urchins, turtles and snails.

A single reef can support as many as 3,000 species of marine life. As fishing grounds, they are thought to be 10 to 100 times as productive per unit area as the open sea. In the Philippines, an estimated 10-15 per cent of the total fisheries come from coral reefs.

Unfortunately, these beautiful coral reefs are now at serious risk from degradation. According to scientists, 70 per cent of the world's coral reefs may be lost by 2050. In the Philippines, coral reefs have been slowly dying over the past 30 years.

The World Atlas of Coral Reefs, compiled by the United Nations Environment Programme (UNEP), reported that 97 per cent of reefs in the Philippines are under threat from destructive fishing techniques, including cyanide poisoning, over-fishing, or from deforestation and urbanization that result in harmful sediment spilling into the sea.

Deforestation adjacent to reefs increases sedimentation. Palawan, Philippines © Lambert A.B. Meñez/ReefBase

Last year, Reef Check, an international organization assessing the health of reefs in 82 countries, stated that only five per cent of the country's coral reefs are in "excellent condition." These are the Tubbataha Reef Marine Park in Palawan, Apo Island in Negros Oriental, Apo Reef in Puerto Galera, Mindoro, and Verde Island Passage off Batangas.

About 80-90 per cent of the incomes of small island communities come from fisheries. "Coral reef fish yields range from 20 to 25 metric tons per square kilometre per year for healthy reefs," said Angel C. Alcala, former environment secretary.

Alcala is known for his work in Apo Island, one of the world-renowned community-run fish sanctuaries in the country. It even earned him the prestigious Ramon Magsaysay Award.

Rapid population growth and the increasing human pressure on coastal resources have also resulted in the massive degradation of the coral reefs. Robert Ginsburg, a specialist on coral reefs working with the Rosenstiel School of Marine and Atmospheric Science at the University of Miami, said human beings have a lot to do with the rapid destruction of reefs. "In areas where people are using the reefs or where there is a large population, there are significant declines in coral reefs," he pointed out.

Estimates show that if the present rapid population growth and declining trend in fish production continue, only 10 kilogrammes of fish will be available per Filipino per year by 2010, as opposed to 28.5 kilogrammes per year in 2003.

guardian.co.uk

One third of reef-building corals face extinction, study shows

Tim Radford in Fort Lauderdale

July 10, 2008

Coral reefs are a vital part of the ocean ecosystem. Photograph: Sterling Zumbrunn/CI

Almost one third of all the coral species that build reefs could be heading for extinction, according to a new comprehensive study published today, which showed that the double assault of climate change and human exploitation could wipe out 231 species of the atoll-building polyps.

Coral reefs are a vital part of the ocean ecosystem, providing a habitat for more than a quarter of all marine species, and generating an income for an estimated 200 million people.

Drs Kent Carpenter and Suzanne Livingstone, of the International Union for the Conservation of Nature (IUCN), report in the journal Science that they and 37 other scientists from 14 nations have just completed their detailed study of the conservation

status of the creatures that grow imperceptibly, stay below the waterline and leave their skeletons as stone monuments.

In total, there could be 1,400 species of hard coral, and more than 840 that form the living structures that endure as reefs. Carpenter - based at Old Dominion University in Norfolk, Virginia - and his colleagues decided that they knew too little about 141 of these to form a judgment. But of the remaining 704, they found that 231 could be classified as critically endangered, endangered or vulnerable enough to be placed on the IUCN's "red list" of threatened species.

Before the heat waves that "bleached" or killed corals in the tropical oceans in 1998, only 13 species would have been included in the threatened or vulnerable categories, they report.

"The results of this study are very disconcerting," Carpenter told the International Coral Reef Symposium in Fort Lauderdale, Florida. "When corals die off, so do the other plants and animals that depend on coral reefs for food and shelter, and this can lead to the collapse of entire ecosystems."

Among the threatened species are some of the most attractive and iconic animals, the acroporid or staghorn corals. These creatures prefer shallow waters, and grow relatively quickly, branching to provide a submarine forest canopy that shelters smaller sea creatures. But because their habitat is shallow, they are particularly vulnerable to lethal episodes of ocean warming, which affect surface layers first.

They are also vulnerable to infectious disease and predation by the crown of thorns starfish, and because they are brittle, the branching "antlers" are easily broken by human interference.

Coral reefs provide a refuge for a major proportion of marine life. "All you have to do is go into a reef in the Pacific to get a good sense of that," Carpenter said. "There can be hundreds of fish around one coral clump the size of a table. They rely on the branches to hide in when a predator approaches, which makes them virtually impossible to feed on."

Reefs also provide livelihood and protection for humans. They are a buffer that absorbs the pounding of the ocean and prevent coastal erosion, shelter rich fisheries and offer incomes from tourism. Their loss would be catastrophic for hundreds of millions of people.

Shallow water corals live in a symbiotic relationship with algae, but this relationship tends to break down when the seas become too warm. Coral reefs could bounce back from such occasional "bleaching" events, but the combined onslaught of global warming, the increasing acidity of the oceans, pollution and human exploitation could finally overwhelm the most vulnerable species. The result could be compared with the catastrophe 65m years ago that wiped out the dinosaurs.

"Everybody knows about the cretaceous-tertiary boundary when all the dinosaurs went extinct," said Carpenter. "But what people don't know is that 40% of all the corals went extinct at the same time, and an even higher percentage of those were the reef-building ones. These conditions that existed in geological times could be mimicked by what is happening on Earth today."

INTER PRESS SERVICE
NEWS AGENCY
THE STORY UNDERNEATH

BIODIVERSITY: A Third of Corals Face Extinction

By Stephen Leahy

July 10, 2008

FORT LAUDERDALE, U.S., Jul 10 (IPS) - One third of reef-building corals already face extinction because of climate change, the first-ever global assessment has found.

Dead Acropora corals
Credit: Keoki Stender, http://www.marinelifephotography.

Reefs are made up of hundreds of coral species, and a two-year study to determine the current status of corals has discovered that 231 of the 704 species assessed will be "red-listed" Thursday. This means these 231 species meet the International Union for Conservation of Nature (IUCN) Red List Criteria for species at risk of extinction in the near future.

Previously, only 10 species of corals had been red-listed, mainly because no proper assessment had been done before.

"We were not expecting the numbers to be that high," said Suzanne Livingstone of the IUCN's Global Marine Species Assessment (GMSA) in Norfolk, Virginia. The paper was published Thursday in Science.

If the same assessment of corals had been done 20 years ago, only 13 of the 704 species would have been red-listed, Livingstone told IPS at the 11th International Coral Reef Symposium (ICRS) in Fort Lauderdale, Florida. However, in that short time span, climate change has warmed the oceans and begun to make them more acidic and corals are suffering.

"It's frightening when you think about it," she said.

Coral reefs are often called the rainforests of the oceans for the richness of species they harbour, representing 25 to 30 percent of all marine species. Millions of people,

including many in developing countries, derive their livelihoods from fishing, while around 2.6 billion people get their protein from seafood, according to studies done by the United Nations Environment Programme (UNEP).

Coral reefs also help mitigate beach erosion and have high recreation value for tourism. UNEP estimates that a typical coral reef can absorb up to 90 percent of the energy of wind-generated waves, thus protecting coastal areas from damage.

The economic value of reefs globally is estimated at 375 billion dollars, Brian Huse, executive director of the Coral Reef Alliance, a U.S.-based NGO dedicated to protecting the health of coral reefs, told IPS in a previous interview.

"When corals die off, so do the other plants and animals that depend on coral reefs for food and shelter, and this can lead to the collapse of entire ecosystems," said Kent Carpenter, lead author of the Science article, GMSA Director, IUCN Species Programme.

The rate at which corals are approaching extinction is far faster than any previous extinction event in Earth's history, Carpenter told IPS. "It's the most alarming finding for biodiversity in the marine realm," he said, adding that only amphibians are at greater risk, also due to climate change.

Staghorn corals face the highest risk of extinction, with 52 percent of species listed in a threatened category. The Caribbean region has the highest number of highly threatened corals (endangered and critically endangered), including the iconic elkhorn coral (Acropora palmata) which is listed as critically endangered. The high biodiversity "Coral Triangle" in the western Pacific's Indo-Malay-Philippine Archipelago has the highest proportions of vulnerable and near-threatened species in the Indo-Pacific, largely resulting from the high concentration of people living in many parts of the region.

Not all of the world's 845 reef-building corals could be assessed. Carpenter says there wasn't enough data to evaluate how 141 species are doing.

While climate change is the primary global threat because it warms ocean temperatures beyond corals' heat tolerance, pollution and overfishing are also major stressors that amplify and accelerate the impact. Another problem for corals is ocean acidification. However, since scientists only recently discovered that carbon emissions from burning of fossil fuels are turning the oceans more acidic, it hasn't been fully assessed in this study, said Livingstone.

"Ultimately it is a combination of all these impacts on corals," she said.

Red-listing does not mean a species will become extinct, but it does mean that if the conditions that are threatening corals continue or worsen, then they may very well become extinct. The IUCN Red List is the widely-accepted gold standard for determining which species are at risk. It has eight levels of risk ranging from no risk to

critically endangered. The 231 coral species are in the "critically endangered", "endangered" or "vulnerable" categories.

The results emphasise the widespread plight of coral reefs and the urgent need to enact conservation measures, said Julia Marton-Lefèvre, IUCN director general.

"We either reduce our CO2 emissions now or many corals will be lost forever," Marton-Lefèvre said in a statement.

(END/2008)

NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
UNITED STATES DEPARTMENT OF COMMERCE

New NOAA Coral Bleaching Prediction System Calls for Low Level of Coral Bleaching in Caribbean this Year

More severe bleaching expected in the Northwestern Hawaiian Islands

July 10, 2008

A new NOAA coral bleaching prediction system indicates that there will be some bleaching in the Caribbean later this year, but the event will probably not be severe. NOAA issued the first-ever seasonal coral bleaching outlook this week at the 11th International Coral Reef Symposium in Ft. Lauderdale, Fla.

The system also suggests that there is a risk of widespread bleaching in the Northwestern Hawaiian Islands in August, but little bleaching elsewhere during the northern hemisphere summer.

“The ability to predict coral bleaching events and provide advance warning is critically important to sustaining healthy reefs,” said Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force. “When coral reef managers and reef users are alerted, they can mobilize monitoring efforts, develop response strategies, and educate reef users and the public on coral bleaching and possible effects on reef resources.”

The new prediction system uses NOAA experimental sea surface temperature forecasts to develop maps of anticipated coral bleaching severity during the upcoming bleaching season (August to October). While NOAA’s Coral Reef Watch Program uses satellite sea surface temperature data to alert managers and scientists around the world of the risk of coral bleaching, the new prediction system includes longer range temperature forecasts up to three-months.

Coral bleaching is associated with a variety of stresses, especially increased ocean temperatures. This causes the coral to expel symbiotic micro-algae living in their tissues — algae that provide corals with food. Losing their algae leaves coral tissues devoid of color, and thus they appear bleached. Prolonged coral bleaching of over a week can lead to coral death and the loss of coral reef habitats for a range of marine life.

There is a potential for bleaching across the Caribbean basin in 2008, but it is not likely to be severe.

A major coral bleaching event occurred in the Caribbean in 2005, resulting in significant coral death in much of the region.

“As global temperatures continue to climb, predicting coral bleaching becomes even more critical," said C. Mark Eakin, Ph.D., coordinator of NOAA's Coral Reef Watch Program. “Our goal is to issue bleaching forecasts for coral reefs worldwide.”

The new system was developed by scientists with NOAA’s Coral Reef Watch in Silver Spring, MD and NOAA’s Earth System Research Laboratory in Boulder, Colo., with funding from the NOAA Climate Program Office’s Sectoral Applications Research Program and NOAA’s Coral Reef Conservation Program.

The National Oceanic and Atmospheric Administration, an agency of the U.S. Commerce Department, is dedicated to enhancing economic security and national safety through the prediction and research of weather and climate-related events and information service delivery for transportation, and by providing environmental stewardship of our nation's coastal and marine resources. Through the emerging Global Earth Observation System of Systems (GEOSS), NOAA is working with its federal partners, more than 70 countries and the European Commission to develop a global monitoring network that is as integrated as the planet it observes, predicts and protects.

Los Angeles Times | Environment

Reef-building corals most vulnerable to extinction

Kenneth R. Wiess

July 10, 2008

Nearly one-third of the small animals that build the most massive and elaborate structures in coral reefs face elevated risk of extinction from global warming and various local problems, an international group of scientists reported today.

The worldwide assessment of more than 700 species of corals showed that 32.8% of them are now threatened with extinction, especially those that form large mounds or intricate branches resembling antlers.

Some of the threats are global in scope, such as elevated ocean water temperatures that have stressed corals to the extent that they have "bleached" bone-white. A massive bleaching episode in 1998 resulted in a vast decline of the world's reefs.

Corals also face problems from excessive and destructive fishing, polluted runoff that buries them under sediment or bathes them in nutrients that fuel out-of-control growth of algae and bacteria. Compounding the problem are outbreaks of various diseases that kill corals when they are under stress.

Using criteria established by the International Union for the Conservation of Nature, the team of scientists determined that loss of reefs and mounting threats have nudged them into the "critically endangered," "endangered" or "vulnerable" categories, leapfrogging over other groups of animals threatened with extinction.

"That makes corals the most threatened animals on Earth," said Greta Aeby, a coral disease expert with the Hawaii Institute of Marine Biology. Corals, as a group, are followed closely by frogs and related amphibians, which have also been on steep decline in recent decades due to pollution, loss of habitat and climate change.

The results, released online today by the journal Science, was presented at the International Coral Reef Symposium in Fort Lauderdale, Fla. Nearly 3,000 scientists and managers have congregated here to learn about the latest scientific discoveries and figure out ways to save the world's coral reefs.

Kent Carpenter, director of IUCN's Global Marine Species Assessment and lead author of the Science article, stressed the importance of coral reefs beyond their majesty and beauty to tourists donning snorkels and masks. Coral reefs, he said, house 25% of the diversity of marine life.

"Corals make up the very framework of the coral reef ecosystem," said Aeby, one of the 38 scientists who co-authored the study. If they disappear, she said, "we can expect to lose the fish and crabs and other critters that depend on these corals."

Loss of coral reefs could have profound impact on more than 500 million poor, subsistence fishermen in the tropics who rely on coral reefs to feed themselves and their families, said David Obura, a marine biologist and East Africa coordinator for the Coastal Oceans Research and Development in the Indian Ocean.

"People rely on coral reefs every day," said Obura, another co-author. "In places like the Indian Ocean," he said, "we need to work with fishermen and help people decide not to fish in a destructive way."

The decline in reef-building corals has been led by the loss of the two major branching corals in the Caribbean in recent decades. William F. Precht, manager of damage assessment and restoration for the Florida Keys National Marine Sanctuary, noted that 95% to 98% of the elkhorn and staghorn corals in the Keys and elsewhere in the region have been lost to disease, toppled by hurricanes or crowded out by algae and bacteria.

Both of these species are also listed as "threatened" with extinction under the U.S. Endangered Species Act.

Yet it's the rich diversity of corals in the tropical waters of the West Pacific, a place called the Coral Triangle that includes Malaysia, Indonesia and the Philippines, that presents the potential greatest loss of species.

-- Kenneth R. Weiss, in Ft. Lauderdale, Fla.

Photo of staghorn coral by Cathie Page

'Alarming' plight of coral reefs

By Richard Black

July 10, 2008

Warming waters, a consequence of climate change, can devastate coral

A third of the world's reef-building coral species are facing extinction.

That is the stark conclusion from the first global study to assess the extinction risks of corals.

Writing in the journal Science, researchers say climate change, coastal development, overfishing, and pollution are the major threats.

The economic value of the world's reefs has been estimated at over $30bn (£15bn) per year, through tourism, fisheries and coastal protection.

"The picture is frightening," said Alex Rogers from the Zoological Society of London, one of 39 scientists involved in the assessment.

> **"Could you imagine if a single event wiped out 16% of the Amazon forest, or 16% of ecosystems in the UK?"**
> Alex Rogers, ZSL

"It's not just the fact that something like a third of all reef-forming corals are threatened, but that we could be facing the loss of large areas of these ecosystems within 50 to 100 years.

"The implications of that are absolutely staggering - not only for biodiversity, but also for economics."

The analysis shows that reef-building corals are more threatened than any group of land-dwelling animals except amphibians.

'Incredible' destruction

The most dramatic decline in recent years was caused by the 1997/8 El Nino event, which caused waters to warm across large swathes of the tropics.

CORAL - KEY FINDINGS

Known species of reef-building coral: 845
Enough data to assess 704
Critically endangered: 5
Endangered: 25
Vulnerable: 201
Near threatened: 176
Least concern: 297

When water temperatures rise, coral polyps - tiny animals that build the reefs - expel the algae that usually live with them in a symbiotic relationship.

The corals lose their colour, with reefs taking on a bleached appearance, and begin to die off because the algae are not there to provide nutrients.

The new analysis shows that before 1998, only 13 of the 704 coral species assessed would have been classified as threatened. Now, the number is 231.

"It was a devastating event in terms of the destruction of corals, with 16% of reefs irreversibly destroyed - an incredible amount," said Kent Carpenter from Old Dominion University in Norfolk, Virginia, in the US.

"The big problem is that if these bleaching events become more frequent as temperatures rise, as we suspect will happen, then we will see whole tracts of coral wiped out."

Adding to this, scientists have come to realise in recent years, is ocean acidification. The water absorbs some of the atmosphere's extra carbon dioxide, making it slightly more acid, enough to compromise the capacity of corals to build their skeletons, and snails to build their shells.

"We know that high sea surface temperatures are bad for coral, but we also have an idea that some might be able to adapt," said Professor Carpenter.

"But ocean acidification is a much more insidious thing. We don't know how bad it will be, but the evidence suggests it will be absolutely devastating, perhaps on the order of decades, perhaps on the order of years."

Complex web

But carbon dioxide is not the only culprit.

> **We either reduce our CO2 emissions now, or many corals will be lost forever**
> Julia Marton-Lefevre, IUCN

Overfishing in many regions - especially the use of dynamite to fish in East Asia and heavy trawls that reduce reefs to rubble - the excavation of building materials from reefs, coastal development, invasive species and pollution are all fingered in the new analysis.

The Caribbean shows how the threat jigsaw fits together.

Coastal development and farming produce effluent, which stimulates the growth of types of algae that smother growing coral.

Meanwhile, fishermen are catching fish that would usually graze on these algae.

In this stressed condition, coral then fall prey more easily to disease, such as white-band disease which has swept through elkhorn and staghorn corals in the region.

The line taken by many scientists and campaigners is that these problems should be easier to tackle than the rising tide of greenhouse gas emissions; so this is where attention should be concentrated.

Along Australia's Great Barrier Reef, protected areas have been established in the sea, and the use of fertilisers controlled on land to reduce pollution.

Recent research there has also shown that algae-munching fish can clean up smothered coral.

But there is another view; that these measures can only reduce and delay the inevitable impacts of rising greenhouse gas emissions.

The political response to climate change, said Alex Rogers, could be likened to "fiddling while Rome burns".

"Could you imagine if a single event wiped out 16% of the Amazon forest, or 16% of ecosystems in the UK?" he asked.

"I don't think politicians and the public are aware of the gravity of the situation we're in regarding coral reefs and other marine ecosystems."

Beyond value?

About one quarter of marine species are believed to depend on coral at some stage of their development. Many fish live their entire lives on reefs, while others use them as nurseries; presumably if the coral dies out, so do the fish.

The economic impact of losing coral is also significant.

Estimating the monetary value of natural ecosystems is far from being an exact science.

But one assessment published two years ago by the UN Environment Programme (Unep) concludes reefs provide services worth on average between $100,000 and $600,000 (£50,000 and £300,000) per square kilometre each year.

That gives a total global value between $30bn and $180bn (£15bn and £90bn) annually. In some regions, such as Sri Lanka, the value has been estimated to be 10 times the global average.

The same assessment concluded that protecting areas of reef costs about 0.2% of the value they bring.

The new assessment forms one element of a major project to measure threats to ocean ecosystems, the Global Marine Species Assessment, a joint initiative of the International Union for the Conservation of Nature (IUCN) and Conservation International (CI).

It will form part of the new IUCN Red List of Threatened Species, due to be published in October.

The IUCN's director general, Julia Marton-Lefevre, said world leaders faced a stark choice.

"We either reduce our CO2 emissions now, or many corals will be lost forever."

Richard.Black-INTERNET@bbc.co.uk

NewScientist Environment

Corals join frogs and toads as world's most endangered

Catherine Brahic

July 10, 2008

Porites pukoensis, shown in close-up, is critically endangered according to the criteria of the IUCN's Red List of threatened species (Image: Donald C Potts)

Within one generation, diving on coral reefs could be a very rare holiday opportunity. The first comprehensive review of tropical coral species reveals that over one-quarter reef-building coral species already face extinction.

This means corals join frogs and toads as the most threatened group of animal species on the planet.

There are 845 known species of corals that build reefs and live in symbiosis with algae. Not enough is known about 141 of these to determine how threatened they are. But of the 704 remaining species, scientists say 32.8% are at risk of extinction.

The team, which was led by Kent Carpenter of the International Union for the Conservation of Nature (IUCN) and gathered experts from around the world, used the IUCN Red List criteria to assess the 845 species.

Sewage and climate

Two hundred and thirty one species (27%) were found to be threatened with extinction. A further 176 (21%) were deemed "near-threatened".

"It was a huge surprise because there is only one other group of animals that has been assessed that exceed that level of threat," says Alex Rogers of the Zoological Society of London, who participated in the survey, "and that's the amphibians."

Humans directly threaten corals by dumping fertilisers and sewage into the oceans and by overfishing with destructive methods.

All this encourages the growth of larger algae, which smother corals. "Outside of the US and Europe, 80% of human sewage is released into the oceans without treatment," says Rogers.

Global warming increases sea temperatures which causes "bleaching" events, where the reefs expel the tiny algae upon which they depend. Warming has also been associated with an increased incidence of coral diseases.

Large-scale disaster

In 1998, a world-wide coral bleaching triggered by unusually warm seas irreversibly destroyed 16% of the coral reef area worldwide.

Coral reefs are home to 25% of all fish species, and as many as 2 million species of animals and plants.

In this sense, they are the tropical rainforests of the oceans and the 1998 bleaching event can be compared to irreversibly wiping out 240 million hectares of forest – equivalent to half of the Amazon.

"If this happened in terrestrial ecosystems we would all be shouting from the treetops," says Rogers. "And yet, it has now completely passed out of public memory."

Valuable resource

"I have two children that are under one-and-a-half years old. I expect that by the time they are 40, coral reefs will have massively declined and in some regions, such as the Caribbean, they will be pretty much gone. By the end of the century there could be virtually nothing left."

Conserving corals will require doing more than addressing the causes of climate change, but the benefits will be considerable. Reef fish feed more than 1 billion people in the developing world and the overall value of coral reefs is estimated at more than $30 billion a year.

There is a little good news, though. The 1998 bleaching event revealed that some species of corals appear to be resistant to coral bleaching, suggesting that these species may become hardy survivors.

Restored reefs

At the 11th International Coral Reef Symposium held in Florida this week, a team of scientists presented evidence that some strains of the endangered staghorn coral Acropora cervicornis can resist white band disease.

This disease has caused mass die-offs of staghorn corals in the Caribbean, resulting in them being listed in the US Endangered Species Act. The researchers say the findings suggest it might be possible to propagate resistant strains to restore the endangered reefs.

Recent studies have highlighted the plight of coral reefs in different areas around the world. In 2007, researchers announced that reefs in the Pacific are disappearing twice as fast as tropical rainforests. And in 2003, another team showed that Caribbean corals were dangerously close to extinction.

Journal reference: Science (DOI: 10.1126/science.1159196)

Third of Coral Reefs Threatened

July 10, 2008

Threatened, Worldwide

July 10, 2008 -- A third of reef-building corals worldwide are threatened with extinction due to climate change and water pollution, according to the first global assessment on the marine creature by 39 scientists.

Destructive fishing and the degradation of coastal habitats also posed threats, said the study published Thursday involving the International Union for Conservation of Nature (IUCN) and Conservation International.

"The results of this study are very disconcerting," said Kent Carpenter, lead author of the study which examined 845 coral reef species.

"When corals die off, so do the other plants and animals that depend on coral reefs for food and shelter, and this can lead to the collapse of entire ecosystems," he added.

Roger McManus from Conservation International said that reef-building corals in particular were "most vulnerable to the effects of climate change".

Sea temperature rises bleach and weaken the algae that give the underwater sea life its vibrant color, and make it more susceptible to diseases.

As they are home to over 25 percent of marine species -- including fish stocks -- loss of reefs could also impact coastal fishing communities.

"The loss of the corals will have profound implications for millions of people who depend on coral reefs for their livelihoods," said McManus.

According to the study, the Caribbean region has the highest number of highly threatened corals.

Due to huge human populations in the region, the Indo-Malay-Philippine archipelago also has the highest proportions of vulnerable and almost threatened species in the Indo-Pacific.

"We either reduce our CO2 emission now or many corals will be lost forever," warned Julia Marton-Lefevre, IUCN Director General.

ScienceNews
MAGAZINE OF THE SOCIETY FOR SCIENCE & THE PUBLIC

Not-OK Coral

By Susan Milius

July 10, 2008

At least a quarter of the planet's reef-building corals face a noticeable risk of extinction, according to the first large scale review of hundreds of species.

Out of 845 known species of warm-water corals, 231 meet the criteria for listing in worrisome categories on the international IUCN Red List of Threatened Species, says marine biologist Kent Carpenter of Old Dominion University in Norfolk, Va.

The troubled species fall into the vulnerable, endangered or critically endangered categories on the Red List, which is maintained by the conservation group International Union for Conservation of Nature and Natural Resources.

If the coral species keep declining, coasts could lose the storm protection and other ecological benefits healthy reefs provide, Carpenter warns. Reef breakdown would have "huge economic effects on food security for hundreds of millions of people dependent on reef fish," Carpenter and 38 co-authors conclude in a paper to be published in Science that appeared online July 10.

"The Carpenter paper has some scary conclusions," says marine biologist Jenny Waddell of the National Oceanic and Atmospheric Administration's reef programs in Silver Spring, Md. She points out that the new paper's proportion of corals in trouble exceeds the threatened portion of most other big groups of land animals except amphibians.

Carpenter says the new roll of threatened reef corals will be added to the IUCN's list, increasing 20-fold the number of corals the group tracks.

Monitoring of marine species has lagged compared with terrestrial species, he says. Out of some 40,000 total species the IUCN had evaluated up to now, only 1,400 species live in the sea.

To catch up, the IUCN and environmental group Conservation International fund the Global Marine Species Assessment to review major groups of creatures. For a year and

a half, Carpenter has led an international team of marine biologists working through the known species that build classic shallow-water reefs.

Skimpy information kept the researchers from evaluating 141 coral species. For the others, the biologists worked out trends in population growth or decline.

Reports on shrinking areas of reefs have long indicated trouble for corals, but “we brought a new dimension,” Carpenter says. At the final tally of 231 imperiled species, “everyone’s jaw absolutely dropped.”

Two main kinds of miseries beset the corals, Carpenter says.

Climate change is taking a toll as warming sea water raises the risks of disease and coral bleaching (when corals lose their symbiotic algae and thus face nutrient shortages).

Abundant local threats also hammer corals. Sediments erode into the sea from frenetic development booms along coasts, and boats drag anchors over reefs, smashing structures that took hundreds of years to build.

“If we can control local threats, it will buy us some time,” says Andrew Baker of the University of Miami. “But ultimately corals will face some pretty tough challenges due to high temperatures and acidity.”

That worldwide process of ocean acidification is already altering surface water chemistry as those waters absorb excess carbon dioxide from the atmosphere. Though seawater is not acid now and isn’t expected to become so, the shift could disrupt ecosystems. “The new species analysis’ methods didn’t address this threat,” comments Maoz Fine of Bar-Ilan University in Ramat-Gan, Israel, so it “may require a category updating very soon.”

In the audit’s regional view, Caribbean reefs have the largest proportion of corals in the most threatened categories, the paper shows. “I used to dive in the Caribbean — the reefs were gorgeous,” Carpenter says. “Now, to use a technical term repeated frequently around here, they’re toast.”

Caribbean reef vulnerability also showed up in a NOAA report co-edited by Waddell and released July 7 at the International Coral Reef Symposium in Fort Lauderdale, Fla. Every three years, the NOAA reef research program presents a status report on the reef communities off the continental coast and U.S.-related islands.

The 2008 report found 69 percent of Pacific reefs in good or excellent condition but only 25 percent of Caribbean and Atlantic ones ranking that high.

Disturbing as both reports are, Carpenter calls for action, saying “there is hope.”

Warming Spells Trouble for Fish

By Christopher Pala, ScienceNOW Daily News

July 10, 2008

Heating up. The Antarctic toothfish is having a harder time finding cold water.
Credit: Paul Cziko/US-NSF/DeVries-Cheng Lab/University of Illinois, Urbana-Champaign

FORT LAUDERDALE, FLORIDA--Global warming of the oceans will likely cause the extinction by 2050 of dozens of fish species that cannot migrate to colder waters, according to a study presented here yesterday at the 11th International Coral Reef Symposium. "The loss of biodiversity will be considerable, and replacing them with new species would take millions of years," says co-author Daniel Pauly of the University of British Columbia (UBC) in Vancouver, Canada.

Fish can tolerate temperature fluctuations of a few degrees in a laboratory aquarium. But in the wild, a difference of even a degree or two can force them to move into a new ecosystem where they will face different foods and different predators. "Some will not be able to handle that and will disappear," says the study's lead author, ecosystem modeler William Cheung, also at UBC. Indeed, almost two-thirds of fish in the North Sea now live in different locations or depths because of rising sea temperatures (Science, 13 May 2005, p. 937).

No one had taken a broad look, however, at how climate change might affect a multitude of oceanic species. To do this, Cheung and his colleagues created a model that considered a range of habitat conditions--such as water temperature, depth, and distance from sea ice--that species prefer and can withstand. The model predicts where and how much those habitats will change in response to global warming and simulates how populations will respond. Cheung's team plugged in data on 1066 abundant commercial species of fish and invertebrates.

The results highlight major changes in the polar regions. For instance, the area with water cold enough for the Antarctic toothfish (Dissostichus mawsoni) to survive is going to shrink as waters get warmer, and its population will have to shrink as well, Pauly said. Within 30 years, it will probably go extinct.

All told, some 50 species of commercial fishes that live at or near the poles will likely die off. Species living farther from the poles will probably migrate toward the Arctic or Southern oceans, where these newcomers may disturb the existing ecosystems, Cheung says. In addition, Pauly notes, past fishing has already reduced genetic diversity and may limit the ability of populations to adapt to new conditions.

Other populations may be trapped. As the Sea of Cortez warms, the giant croaker (Totoaba macdonaldi), an endangered fish that can reach 2 meters in length, won't be able to escape northward. The same will happen in closed seas such as the Mediterranean Sea, where fish populations, such as the local hake (Merluccius merluccius), will be unable to migrate to colder waters. Vicky Lam, another author, adds that the results come out the same with several different simulation models of predicted temperatures. The model and some of these results were described in detail in January in one of UBC's Fisheries Centre Research Reports.

The model has several limitations, the authors note. It doesn't simulate the food availability in the new habitats that the species will encounter as they move poleward, nor does it account for changes in oxygen distribution that may affect fish and that do not exactly parallel changes in temperature, Cheung notes.

"Pauly looks at the big picture," says Jeremy Jackson, a biological oceanographer at the Scripps Institution of Oceanography in San Diego, California. "There are lots of studies that clearly demonstrate that species have been galloping toward the poles for decades, but this study puts it all together in a genuinely oceanic scale. Wherever there are barriers to these mass migrations, it's obvious that there is no hope for the species involved."

Telegraph.co.uk

One third of coral species face extinction

By Roger Highfield

July 10, 2008

One third of the major reef-building coral species are vulnerable to extinction, and the pace of destruction is increasing so it is conceivable that the "rainforests of the ocean" could be wiped out this century.

The warning that coral communities are faring even worse than their terrestrial counterparts, notably tropical rainforests, is given by an international team led by Prof Kent Carpenter, Director of the Global Marine Species Assessment Of Conservation International And The International Union For Conservation Of Nature, IUCN.

One third of coral species face extinction
The loss of reefs will expose costal communities to greater storm surges

The loss of reefs will expose costal communities to greater storm surges

Built over millions of years, coral reefs are home to more than 25 percent of marine species, making them the most biologically diverse of marine ecosystems.

The loss of reefs could have huge economic effects on food security for around 500 million people who are dependent on reef fish for food and/or their livelihoods and tourism is also likely to suffer.

"The results of this study are very disconcerting," said Prof Carpenter, lead author of the Science article.

"When corals die off, so do the other plants and animals that depend on coral reefs for food and shelter, and this can lead to the collapse of entire ecosystems."

"Whether corals actually go extinct this century will depend on the continued severity of climate change, extent of other environmental disturbances, and the ability of corals to adapt," the article concludes.

"Our results emphasize the widespread plight of coral reefs and the urgent need to enact conservation measures."

Researchers identified the main threats to corals as climate change and local stresses resulting from destructive fishing, declining water quality from pollution, and the degradation of coastal habitats.

Climate change causes rising water temperatures and more intense solar radiation, which lead to coral bleaching and disease often resulting in mass coral mortality. Bleaching happens when the water temperature rises to the point where it kills the tiny polyps that make up the coral, leaving behind the white limestone skeleton of the reef.

With colleagues, Prof Carpenter has compiled data for over 700 coral species and classified their conservation status according to the IUCN "Red List" Categories and Criteria. Their analysis indicates that, of 704 species, 231 are in the "Critically Endangered," "Endangered," or "Vulnerable" categories.

The results also indicate the extinction risk of corals has increased over the past decade. Before the massive bleaching events of 1998, which wiped out around 16 per cent of reefs, only 13 species would have been included in the three threatened categories based on the data available today. The vast majority - 671 - would have been categorised as of "least concern."

The Caribbean has the largest proportion of corals in high extinction risk categories, with notable declines of staghorn and elkhorn corals, while the Coral Triangle (Indo-Malay-Philippine Archipelago, western Pacific) has the highest proportion of species in all categories of elevated extinction risk, notably as a result of warming.

Corals in oceanic islands of the Pacific generally have the lowest proportion of threatened species and Hawaiian reefs have been spared extensive coral loss from bleaching or disease. However, it hosts several rare species may prove especially vulnerable to future threats. Corals from the genera (group of species) Favia and Porites were found to be the least threatened due to their relatively higher resistance to bleaching and disease.

Marine researchers at the International Coral Research Symposium (ICRS) in Fort Lauderdale, Florida, this week are exploring the longer term consequences of widespread loss of corals due to global warming and ocean acidification.

Chair of the Climate Change session, Prof Ove Hoegh-Guldberg of the ARC Centre of Excellence for Coral Reef Studies and University of Queensland, said: "The evidence suggests reef systems are becoming more brittle, as a result of bleaching, disease and

the effects of acidifying water - and this means we are likely to see more moonscape-like areas where reefs once used to be. This will be accompanied by a switch from the spectacularly colourful fish that people normally associate with reefs to much fewer and plainer ones."

"The loss of reefs will also expose coastal communities, already facing rising sea levels, to a greater risk from storm surges and tsunamis - as reefs currently provide a protective barrier against these," he said.

"This will be accompanied by murkier, less productive waters as water quality suffers." Researchers have found evidence that the rate at which coral reefs have been deteriorating and disappearing has accelerated in the last five years.

"For the past 30 years the loss has been between 1-2 per cent of the world's coral per year," he said. "The latest data suggests the rate is now around 2 per cent a year. This doesn't give us much time."

Emerging evidence indicates some corals have suffered a 20 per cent reduction in their growth rates, which researchers consider to be due to the rising acidification of sea water making it harder for them to build their chalky skeletons.

"This apparent drop in calcification is bound to be a real issue for discussion at the symposium," he said.

Most disturbing of all were recent claims by some atmospheric researchers that the level of carbon dioxide has been underestimated, and may be closer to 410 parts per million, than to the 385 estimated by the Intergovernmental Panel on Climate Change (IPCC).

"If we continue on the pathway that we are on right now, we get to levels where you are looking at the total loss of reef structures worldwide. Under those conditions you just don't have corals - no corals, and you also lose 50% of the fish and other species that live in and around corals," he said.

"We either reduce our carbon dioxide emission now or many corals will be lost forever," says Julia Marton-Lefèvre, IUCN Director General.

"Improving water quality, global education and the adequate funding of local conservation practices also are essential to protect the foundation of beautiful and valuable coral reef ecosystems."

Mail Online

Daily Mail, UK

Reefs at risk as a third of the world's corals could be dead in a few years, report warns

By David Derbyshire

July 10, 2008

A third of the world's corals could be dead within a few years, a shocking new report warns today.

The biggest study of its kind has found that 200 out of 700 species of coral are on the brink of extinction - far more than was previously thought.

If they die, some of the most beautiful and colourful reefs - home to millions of species of marine life - could be devastated.

Under threat: Coral reefs are home to around two million species
The speed of decline has shocked the 39 scientists who carried out the survey.
Just 10 years ago only 13 species of coral were endangered.

Researchers, who published their findings in the journal Science, say they have been badly hit by climate change, coastal development and overfishing.

Reefs in the Caribbean - a favourite for British snorkellers and scuba divers - are among the most severely at risk.

Co-author of the report, Elizabeth Wood, of the UK Marine Conservation Society, said: "With so many corals now clearly identified as being at risk we need to do all that we can to help keep reefs and corals healthy and prevent what could be disastrously losses to global marine life.

"The proportion of threatened coral species greatly exceeds that of most terrestrial animal groups apart from amphibians.

"Coral reefs are some of the planets most incredible and diverse living systems and provide local communities in over 100 countries with food and other natural resources. "

The spectacular reefs that lie in the world's shallow, tropical seas are made by tiny organisms only a few millimetres long. These coral polyps live in huge colonies, secreting calcium carbonate to form a hard skeleton over millions of years.

Only the top layers of a reef are "alive". But the holes and crevices in the reefs provide shelter for thousands of different species of marine life.

The new study looked at 845 tropical reef-building coral species. Of the 704 corals for which detailed information was available, 231 species were at high risk of extinction, while 407 were threatened or near-threatened.

Hundreds of millions of people depend on coral reefs for food, livelihoods and coastal defences.

Higher levels of carbon dioxide in the atmosphere are warming surface temperatures and making seas more acidic, they said - "bleaching" corals.

Sewage, destructive fishing, agricultural chemicals and building on coasts were adding to the destruction.

Dr Rogers, senior research fellow at the Zoological Society of London's Institute of Zoology, said it was "death by a thousand cuts".

"The resilience of corals to bleaching and ability to recover is heavily influenced by other stresses the corals are under, such as over-fishing or destructive fishing, declining water quality and nutrient loading from agrochemicals," he said.

Even if they recover from bleaching events, corals are still more susceptible to disease and other problems.

Coral reefs are home to around two million species - including a quarter of all sea fish.

OverTheLimit

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Nearly Half Of Coral US Reefs Said At Risk

July 10, 2008

Fort Lauderdale, FL-The condition and shape that the different reefs along the coastline of the United States and in other areas controlled by the United States are in poor condition, according to a report by NOAA.

The National Oceanographic and Atmospheric Administration has observed that many of the reefs and Coral structures that are in waters near or around the United States are in fair or in some cases very poor condition.

This is from a number of different causes, pollution, marine debris, coral bleaching, disease, ocean acidification, and even climate change, according to the NOAA report.

“Even some of the most remote coral reefs are at risk,” said the NOAA released report.

NOAA released a brand new comprehensive 569-page document at the 11th International Coral Reef Symposium in Fort Lauderdale, Florida.

The reefs in the Pacific Ocean currently are in better health than the ones found in the Atlantic Ocean.

Many of the reefs have been so badly damaged that if action is not taken soon, they will either disappear completely or be so badly damaged that they will never be able to be restored to full health, according to the NOAA report.

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One Third of Reef-building Corals Face Extinction, Study Shows

July 10, 2008

Climate change and human exploitation could wipe out 231 of the 704 species of coral which build reefs, triggering the collapse of entire ecosystems, scientists warn in a comprehensive new study

Almost one third of all the coral species that build reefs could be heading for extinction, according to a new comprehensive study published today, which showed that the double assault of climate change and human exploitation could wipe out 231 species of the atoll-building polyps.

Coral reefs are a vital part of the ocean ecosystem, providing a habitat for more than a quarter of all marine species, and generating an income for an estimated 200 million people.

Drs Kent Carpenter and Suzanne Livingstone, of the International Union for the Conservation of Nature (IUCN), report in the journal Science that they and 37 other scientists from 14 nations have just completed their detailed study of the conservation status of the creatures that grow imperceptibly, stay below the waterline and leave their skeletons as stone monuments.In total, there could be 1,400 species of hard coral, and more than 840 that form the living structures that endure as reefs. Carpenter - based at Old Dominion University in Norfolk, Virginia - and his colleagues decided that they knew too little about 141 of these to form a judgment. But of the remaining 704, they found that 231 could be classified as critically endangered, endangered or vulnerable enough to be placed on the IUCN's "red list" of threatened species.

Before the heat waves that "bleached" or killed corals in the tropical oceans in 1998, only 13 species would have been included in the threatened or vulnerable categories, they report.

"The results of this study are very disconcerting," Carpenter told the International Coral Reef Symposium in Fort Lauderdale, Florida. "When corals die off, so do the other plants and animals that depend on coral reefs for food and shelter, and this can lead to the collapse of entire ecosystems."

Among the threatened species are some of the most attractive and iconic animals, the acroporid or staghorn corals. These creatures prefer shallow waters, and grow relatively quickly, branching to provide a submarine forest canopy that shelters smaller sea creatures. But because their habitat is shallow, they are particularly vulnerable to lethal episodes of ocean warming, which affect surface layers first.

They are also vulnerable to infectious disease and predation by the crown of thorns starfish, and because they are brittle, the branching "antlers" are easily broken by human interference.

Coral reefs provide a refuge for a major proportion of marine life. "All you have to do is go into a reef in the Pacific to get a good sense of that," Carpenter said. "There can be hundreds of fish around one coral clump the size of a table. They rely on the branches to hide in when a predator approaches, which makes them virtually impossible to feed on."

Reefs also provide livelihood and protection for humans. They are a buffer that absorbs the pounding of the ocean and prevent coastal erosion, shelter rich fisheries and offer incomes from tourism. Their loss would be catastrophic for hundreds of millions of people.

Shallow water corals live in a symbiotic relationship with algae, but this relationship tends to break down when the seas become too warm. Coral reefs could bounce back from such occasional "bleaching" events, but the combined onslaught of global warming, the increasing acidity of the oceans, pollution and human exploitation could finally overwhelm the most vulnerable species. The result could be compared with the catastrophe 65m years ago that wiped out the dinosaurs.

"Everybody knows about the cretaceous-tertiary boundary when all the dinosaurs went extinct," said Carpenter. "But what people don't know is that 40% of all the corals went extinct at the same time, and an even higher percentage of those were the reef-building ones. These conditions that existed in geological times could be mimicked by what is happening on Earth today."

By Guardian Unlimited © Copyright Guardian Newspapers 2008
Published: 7/10/2008

UN Agency Warns Climate Change Threatens Millions In Fishing Industry

Windsor Genova

July 10, 2008

Rome, Italy (AHN) - Climate change on the world's oceans threaten hundreds of millions of people who depend on fishing for their livelihoods, the United Nations Food and Agriculture Organization (FAO) warned Thursday.

FAO issued the warning at the start of the four-day International Symposium on Coping with Global Change in Marine Social-Ecological Systems here.

The agency said those threatened include 42 million people working directly in the fishing sector, mostly in developing countries. Several hundreds of millions more work in processing, supply, marketing and distribution of aquatic food products.

Fishing communities in the world's high latitudes, as well as those that rely on coral reef systems, will be most exposed to the impact of climate change, a statement from FAO said.

Scientists Predict More Coral 'Bleaching'

Prolonged Higher Temperatures Causes Damage To Coral

July 10, 2008

HONOLULU -- Coral reefs in the Northwestern Hawaiian Islands are at a high risk of "bleaching" this year in part because of increased ocean temperatures, according to scientists.

Scientists at the annual Coral Reef Symposium in Florida released the prediction on Thursday.

Higher ocean temperatures can cause coral to turn white by expelling algae, which is their usual food source.
Click here to find out more!

Prolonged bleaching can cause the coral to die and harm marine life.

Scientists used experimental sea surface temperature forecasts to come up with the prediction.

A third of reef-building corals threatened with extinction: scientists

July 10, 2008

Damsel fish drift over bleached coral heads off the Keppel Islands in Queensland in 2006

GENEVA (AFP) — A third of reef-building corals worldwide are threatened with extinction due to climate change and water pollution, according to the first global assessment on the marine creature by 39 scientists.

Destructive fishing and the degradation of coastal habitats also posed threats, said the study published Thursday involving the International Union for Conservation of Nature (IUCN) and Conservation International.

"The results of this study are very disconcerting," said Kent Carpenter, lead author of the study which examined 845 coral reef species.

"When corals die off, so do the other plants and animals that depend on coral reefs for food and shelter, and this can lead to the collapse of entire ecosystems," he added.

Roger McManus from Conservation International said that reef-building corals in particular were "most vulnerable to the effects of climate change".

Sea temperature rises bleach and weaken the algae that give the underwater sea life its vibrant colour, and make it more susceptible to diseases.

As they are home to over 25 percent of marine species -- including fish stocks -- loss of reefs could also impact coastal fishing communities.

"The loss of the corals will have profound implications for millions of people who depend on coral reefs for their livelihoods," said McManus.

According to the study, the Caribbean region has the highest number of highly threatened corals.

Due to huge human populations in the region, the Indo-Malay-Philippine archipelago also has the highest proportions of vulnerable and almost threatened species in the Indo-Pacific.

"We either reduce our CO2 emission now or many corals will be lost forever," warned Julia Marton.

UN Agency Warns Climate Change Threatens Millions In Fishing Industry

Windsor Genova - AHN News Writer

July 10, 2008

Rome, Italy (AHN) - Climate change on the world's oceans threaten hundreds of millions of people who depend on fishing for their livelihoods, the United Nations Food and Agriculture Organization (FAO) warned Thursday.

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NATIONAL GEOGRAPHIC

A Third of Reef-Building Corals at Risk of Extinction

Brian Handwerk

July 10, 2008

A third of the world's major reef-building coral species are in danger of extinction, an international team of scientists warns in a study published today.

Because coral reefs are home to more than a quarter of all marine species, their loss could be devastating for biodiversity in the world's oceans.

"If corals themselves are at risk of extinction and do in fact go extinct, that will most probably lead to a cascade effect where we will lose thousands and thousands of other species that depend on coral reefs," said the study's lead author Kent Carpenter, a zoologist at Old Dominion University in Norfolk, Virginia.

The rate at which reefs have been besieged is most troubling, the scientists say.

Of the 704 corals classified in the study, 231 were listed as "vulnerable," "endangered," or "critically endangered" according to the International Union for Conservation of Nature's Red List.

A decade ago just 13 species met the same criteria.

The study appears in the online journal *Science Express.*

On The Brink?

Studies around the globe have made the news of coral reef declines distressingly commonplace, the researchers say.

"What we did was use that information about decline to ask the question, What is the consequence of this on the potential loss of biodiversity?" Carpenter said.

"It's easy for people to understand that coral reefs are at risk, but it's gotten to the point now where the risk of extinction is a reality for the actual species that form the coral reefs. That could be devastating to biodiversity in the ocean."

Some reef locales are faring worse than others, the paper said.

"Caribbean reefs appear to be the worst off in terms of numbers of important species

that have a very high risk of extinction," Carpenter reported.

By contrast the "Coral Triangle" region of the Indo-Malay Philippine Archipelago—an area of high marine biodiversity—has the highest number of species appearing on the list, but many are at a lower level of extinction risk.

"It's potentially the next big problem area," Carpenter said. "If conditions worsen, we're talking about the most important marine biodiversity area in the world potentially becoming a big problem."

Meanwhile, areas of the Pacific Ocean stood out as regions where corals are faring better. Reefs among the Pacific's tens of thousands of isolated islands are scattered and relatively unaffected by human activity.

What is Killing Coral?

Experts generally agree that large scale die-offs from bleaching and disease have increased in frequency during recent decades—due at least in part to warming sea-surface temperatures linked to global climate change.

When sea temperatures rise for a sustained period of time by even a small amount, corals may expel their symbiotic food-producing algae, which turns reefs a sickly white.

A massive bleaching event in 1998 related to the El Niño weather phenomenon was the worst coral die-off ever observed. In the succeeding years such events have occurred with increasing frequency and severity.

The impact of disease or bleaching events is even worse when corals are weakened by local impacts such as overfishing, which sometimes targets species that protect reefs. Sedimentation and pollution from coastal development also harm coral health.

Corals do show some capacity to bounce back from bleaching and other destructive events. But if their overall declines are to be reversed, people must address the threats that have landed so many species on the IUCN list, scientists stress.

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UH scientist calls corals 'the most threatened animals on Earth'

July 10, 2008

By Kenneth R. Weiss, Los Angeles Times

FORT LAUDERDALE, Fla. — Nearly one-third of the small animals that build the most massive and elaborate structures in coral reefs face elevated risk of extinction from global warming and various local problems, an international group of scientists reported today.

The worldwide assessment of more than 700 species of corals showed that 32.8 percent are threatened with extinction, especially those that form large mounds or intricate branches resembling antlers.

Coral reefs provide hiding places and habitat for a quarter of all marine life and are a major source of food for the poor and of tourist revenue in tropical countries.

Some of the threats are global, including elevated ocean temperatures that have stressed corals so much that they are "bleached" bone-white. A massive bleaching brought on by warmer waters in the 1998 El Nino resulted in a vast decline of the world's reefs.

Corals also face excessive and destructive fishing and polluted runoff that buries them under sediment or bathes them in nutrients that fuel out-of-control growth of algae and bacteria. Compounding the problem are various diseases that kill corals when they are under stress.

Using criteria established by the International Union for the Conservation of Nature, the team of scientists determined that loss of reefs and mounting threats have nudged them into the "critically endangered," "endangered" or "vulnerable" categories, leapfrogging over other groups of animals threatened with extinction.

"That makes corals the most threatened animals on Earth," said Greta Aeby, a coral disease expert with the University of Hawaii's Hawaii Institute of Marine Biology. Corals,

as a group, are followed closely by frogs and related amphibians, which have also been on steep decline in recent decades due to pollution, loss of habitat and climate change.

The results, released online Thursday by the journal Science, were presented at the International Coral Reef Symposium in Fort Lauderdale, where nearly 3,000 scientists and managers have congregated to learn about the latest scientific discoveries and figure out ways to save the world's reefs.

Kent Carpenter, director of the international union's Global Marine Species Assessment and lead author of the Science article, emphasized the importance of coral reefs beyond their beauty to tourists.

"Corals make up the very framework of the coral reef ecosystem," said Aeby, one of the 38 scientists who collaborated on the study. If they disappear, she said, "we can expect to lose the fish and crabs and other critters that depend on these corals."

Loss of coral reefs could have a profound effect on more than 500 million poor, subsistence fishermen in the tropics who rely on coral reef ecosystems to feed themselves and their families, said David Obura, a marine biologist and East Africa coordinator for the Coastal Oceans Research and Development in the Indian Ocean.

"People rely on coral reefs every day," said Obura, another collaborator on the study. "In places like the Indian Ocean," he said, "we need to work with fishermen and help people decide not to fish in a destructive way."

The decline in reef-building corals has been led by the loss of the two major branching corals in the Caribbean in recent decades. William F. Precht, manager of damage assessment and restoration for the Florida Keys National Marine Sanctuary, noted that 95 percent to 98 percent of the elkhorn and staghorn corals in the Keys and elsewhere in the region have been lost to disease, toppled by hurricanes or crowded out by thick mats of algae and bacteria.

Both of these species are also listed as "threatened" with extinction under the U.S. Endangered Species Act.

Bloomberg.com

Reef Corals Face Extinction Due to Global Warming, Over-Fishing

By Alex Morales

July 10, 2008

July 10 (Bloomberg) -- A third of reef-building corals face extinction as global warming adds to other man-made threats including over-fishing and coastal development.

A team of 39 researchers assessed the state of 704 coral species and found 32.8 percent are threatened with extinction. The study results, published today in the journal Science, are ``worse than expected,'' said co-author Suzanne Livingstone, a marine biologist at Old Dominion University in Norfolk, Virginia.

“When we began this process, we didn't think it would be anywhere near as high as that,” Livingstone, also a marine species assessor for the International Union for Conservation of Nature, said yesterday in a telephone interview. ``Climate change is the overarching threat which comes in on a much larger, global scale,'' adding to localized disturbances, she said.

The fate of corals is crucial to the livelihoods of millions of coastal dwellers around the world. Reefs are worth about $30 billion a year to the global economy, through tourism, fisheries and coastal protection, according to the Millennium Ecosystem Assessment, a United-Nations supervised study published in 2005.

Corals build reefs by secreting exoskeletons of calcium carbonate that accumulate over hundreds of years. The corals have a symbiotic relationship with zooxanthellae, single-celled algae that shelter in their tissues and provide the reef-building organisms with nutrition and energy, enabling faster growth.

‘Irreversible Declines’

Warmer temperatures, disease and pollution cause corals to expel the zooxanthellae. Because the algae are the source of the corals' bright colors, when they are rejected, it is known as bleaching, and it makes corals more likely to die.

“If bleaching events become very frequent, many species may be unable to re-establish breeding populations before subsequent bleaching causes potentially irreversible declines,” the scientists wrote. ``If corals cannot adapt, the cascading effects of the functional loss of reef ecosystems will threaten the geologic structure of reefs and their

coastal protection function, and have huge economic effects on food security for hundreds of millions of people dependent on reef fish."

The Caribbean and western Pacific were identified by the researchers as the areas where most corals are threatened.

Corals are undermined by the buildup of silt, and run-off of nutrients from fertilizers into the sea, which creates surface algal blooms. Both processes block light from reaching the zooxanthellae. Over-fishing can change the balance of the food chain by removing large herbivores, and some reefs are destroyed to make way for coastal development.

Stresses

While the best way to help preserve corals is to cut the emissions of greenhouse gases blamed for rising temperatures, tackling local threats by tightening regulations on fishing, coastal building and marine protection will reduce stress to corals, Livingstone said.

“One of the big problems is these localized disturbances from human activities in conjunction with climate change,” Livingstone said. ``They are much more resistant and able to adapt if there are no other stresses acting on them."

Results of the Gland, Switzerland-based IUCN's assessment will be included in the group's Red List of endangered species in October. In addition to the 704 species rated by the scientists, insufficient data existed on a further 141 reef-building corals.

To contact the reporter on this story: Alex Morales in London at amorales2@bloomberg.net.

One-third of world's coral species at risk of extinction

Presenter: Corinne Podger

July 11, 2008

The survey by an international team of scientists has been published in the prestigious journal, Science and announced at the International Coral Reef Symposium underway in Florida. The findings show coral reefs have joined the ranks of living creatures most likely to vanish permanently from the earth.

Presenter: Corinne Podger
Speakers: Dr Greta Aeby, Hawaii Institute of Marine Biology; Dr David Obura, Coral Reef Degradation agency; Roger McManus, vice-president, Marine Programs, Conservation International.

PODGER: The survey took in virtually every coral reef on the planet, from Indonesia to Kenya, Hawaii to eastern Australia. All over the world, coral reefs are dying off at a significant rate - the victims of a combination of climate change, ocean acidification, and pollution from run-off and human activity.

Some reefs are degrading more quickly than others. The area with the highest proportion of vulnerable species is the so-called "Coral Triangle", which covers waters off Indonesia, Malaysia, the Philippines, Papua New Guinea, the Solomon Islands and East Timor.

Conservation International, one of the agencies that commissioned the study, says the results have profound implications for millions of people who derive their food and income from reef systems.

Dr Greta Aeby, of the Hawaii Institute of Marine Biology in Honolulu, is one of the study's lead authors:

AEBY: Using information about population sizes, geographic range and also the susceptibility of these different coral species to bleaching, disease, or predation by crown of thorns, we wanted to determine how many species were at risk of being lost, and from our study we found that approximately one third of our coral species are at

risk. This makes corals the most threatened group of animals on this earth, second only to the frogs and related amphibians for risk of extinction.

PODGER: The 39 researchers presenting their findings here in Florida say the progressive loss of coral reefs also threatens the survival of the 25 percent of all marine life that relies on reefs for food and shelter. Dr Greta Aeby again.

AEBY: Corals make up the very framework of the coral reef ecosystem. If these corals are lost, then the entire ecosystem is at risk of collapse, and so we can expect not only to lose coral species, but also the fish and crabs and other little critters that depend on these corals for food and shelter.

PODGER: Another lead author is Dr David Obura, from the agency Coral Reef Degradation in the Indian Ocean, who's based in Kenya. He says that while some of the factors damaging coral reefs are slow but steady, like carbon dioxide in the atmosphere, others - like El Nino and other severe weather events - do short, sharp bursts of damage, adding to the problem.

But Dr Obura says there's some evidence that coral reefs can recover to an extent, from events like these, if they live in reasonably healthy waters, and that this information's being used to help in the location, design and management of marine protected areas.

OBURA: We are finding that in some places, there are reefs that are recovering quite well. These generally tend to be in fairly remote areas, where water quality is very good, where there's low fishing impacts and things like that. Some species are more tolerant and resilient than others, it depends a lot on the quality of the environment, and the quality of different places, and so we try to find the places that have high resilience and maximise the benefits there.

PODGER: But in areas where coral recovery takes place, some species do better than others, so the way a reef will look, and the species it can support, may be very different to its original state. Given the importance of reef systems both to coastal communities around the world, and to science, the researchers involved in the study have urged governments to take urgent action to reduce greenhouse gas emissions. Roger McManus is the vice-president of Marine Programs at Conservation International.

MCMANUS: Clearly we've got an emerging conversation about the impacts of climate We all need to do our part institutionally and individually to reduce emissions but there is a consensus now that no matter what we do, we are going to see some impacts that are simply not reversible at this point. The results of the GMSA will help ensure that we highlight the urgency and need to improve stewardship of the ocean, but I think most importantly out of all of this is that we have to adjust to a new world in which we have to manage for change. We cannot manage to conserve or preserve the past or the present, we also have to be concerned about what's going to happen in the future, and how we're going manage and conserve biodiversity and productivity of the ocean in that light.

ABC News

Reef extinction risk increases

By Sarah Clarke

July 11, 2008

A study has found 231 species of coral are either vulnerable or facing extinction. (AFP Photo)

A new report has found that one third of the world's coral reef building species are threatened with extinction because of climate change.

The study by a team of international scientists examined 700 species of coral and found that 231 are either vulnerable or facing extinction.

Jilly Llewellyn from WWF says the findings which are published in the journal Science are a worrying sign.

"A decade ago they said only 13 species of reef building coral would have counted as being threatened," she said.

"Today that number is 231, that's a huge increase.

"What we've seen arrive on the scene are a range of climate change driven threats to coral reefs, like bleaching and like the new silent killer on the horizon in the form of ocean acidification duration."

ISLANDS BUSINESS

Scientists need to work with journalists

Samisoni Pareti

July 11, 2008

Islands Business Exclusive

"As individuals, scientists and journalists have much in common," Baron told islandsbusiness.com "Both are curious, love discovery, analytical, competitive, independent thinkers and both like to drink and talk late into the night. "Scientists agree that the reluctance to talk to reporters is widespread in the scientific community because of the fear of being misquoted and of being victims of sensationalism. "I really love it when journalists do some homework first before they pick up the phone to ask for my comment on a particular subject," said Dr Bob Steneck of the University of Maine.

Fort Lauderdale, Florida --- Scientists and journalists have a lot more in common than what many would like to admit, a panel discussion in an international science symposium currently underway here heard. Panelists agree that while the method of their work may differ, a scientist and a journalist do share a common interest; that of uplifting the lives or spirits of the people. The panel discussion was called "Why Journalists and Scientists Just Don't Communicate" and was one of the many sessions organised as part of the 11th International Coral Reef Symposium which opened in this American city on Monday. Co-chair of the discussion, science communication trainer Nancy Baron of Seaweb/Compass said while many talked of the huge differences between the two professions, common interests do exist.

"As individuals, scientists and journalists have much in common," Baron told islandsbusiness.com "Both are curious, love discovery, analytical, competitive, independent thinkers and both like to drink and talk late into the night. "Scientists agree that the reluctance to talk to reporters is widespread in the scientific community because of the fear of being misquoted and of being victims of sensationalism. "I really love it when journalists do some homework first before they pick up the phone to ask for my comment on a particular subject," said Dr Bob Steneck of the University of Maine.

Being misquoted Dr Peter Mumby of the University of Exeter in England admits is one of the many fears of scientists when dealing with journalists. But he said he had learnt not to be overly worried about the matter, as long as journalists get the gist of the matter

he wanted the public to know, he would be a happy man. Los Angeles Times' science writer Ken Weiss in the panel of journalists contributed that he loves it when scientists offer analogies and good anecdotes in their reports. Weiss is a Pulitzer prize winner for a series of ocean stories titled 'altered ocean' that he wrote for his newspaper in 2007.

Brian Skoloff of the Associated Press suggested that scientists should take the time to explain the importance of their work to reporters. Pacific journalists were represented on the panel discussion by Islands Business' Samisoni Pareti.

Coral most threatened species on earth

July 11, 2008

A landmark global survey of coral reefs has found a third of all coral species is at risk of extinction.

One third of the world's coral species are under threat.

The survey by an international team of scientists was published today in the prestigious journal Science, and announced at the International Coral Reef Symposium underway in the US state of Florida.

The findings mean coral reefs have joined the ranks of living creatures most likely to vanish permanently from the earth.

The study also found the area with the highest number of vulnerable species is the so-called Coral Triangle, which covers Indonesia, Malaysia, the Philippines, Papua New Guinea, the Solomon Islands and East Timor.

One of the lead authors, Dr Greta Aeby from the Hawaii Institute of Marine Biology says the study found coral is the world's most threatened animals.

"Using information about population sizes, geographic range and also the susceptibility of these different coral species to bleaching, disease, or predation by crown of thorns, we wanted to determine how many species were at risk of being lost," Dr Aeby said.

"We found that approximately one third of our coral species are at risk.

"This makes corals the most threatened group of animals on this earth, second only to the frogs and related amphibians for risk of extinction," she said.

The Herald

Climate change threat to third of coral reefs

Emily Beament

July 11, 2008

One-third of reef corals are threatened with extinction because of climate change and other human activities such as fishing and coastal development, scientists warned yesterday.

A study published in the journal Science assessed 845 tropical reef-building species, using the International Union for Conservation of Nature (IUCN) Red List to evaluate their conservation status.

Of the 704 corals for which sufficient information existed 231 species (32.8%) were found to be threatened with extinction. Some 407 species were considered to be threatened or near-threatened.

The Caribbean has the largest proportion of species in high extinction risk categories, the study said.

The authors said the results showed that the extinction risks for corals had increased dramatically over the past decade, and now exceeded most terrestrial animal groups apart from amphibians.

The loss of reef corals would have a huge impact on hundreds of millions of people who depend on them for food, livelihoods and coastal protection, the researchers warned.

The scientists said the declines species were suffering were the result of rising carbon dioxide levels associated with climate change, as well as local human impacts.

The raised levels of CO2 increased sea surface temperatures, leading to "bleaching" of corals, and made the oceans more acidic, harming the coral's ability to build its skeleton.

Predictions by the Intergovernmental Panel on Climate Change for the increasing acidification of the oceans by the end of the century present "disastrous scenarios" for corals, said one of the study's authors Alex Rogers.

The study warned that destructive fishing, sewage, coastal development and the use of agricultural chemicals were all reducing the ability of corals to withstand the threats caused by climate change.

Researchers concluded that whether corals go extinct this century will depend on the severity of climate change, the extent of other environmental disturbances and the ability of corals to adapt.

Climate change threatens coral species

July 11, 2008

The world's coral reefs are not only spectacular; they're some of the most important ecosystems in the world. But as NBC's Kerry Sanders reports, global climate change poses an alarming threat to a number of coral species.

What's killing coral reefs?

More from the experts featured in Kerry Sanders' reports.

http://www.msnbc.msn.com/id/3032619/vp/25642862#25642862efevre, IUCN Director General.

Los Angeles Times | National

About 33% of coral species threatened with extinction, study says

By Kenneth R. Weiss, Los Angeles Times Staff Writer

July 11, 2008

Rick Loomis / Los Angeles Times
" Corals make up the very framework of the coral reef ecosystem," one scientist said. If they disappear, "we can expect to lose the fish and crabs and other critters."

One culprit is higher ocean temperatures brought on by global warming, scientists say, but destructive fishing practices and polluted runoff also are to blame.

FORT LAUDERDALE, FLA. -- Nearly one-third of the small animals that make up the most massive and elaborate structures in coral reefs face an elevated risk of extinction from global warming and various local problems, an international group of scientists reported Thursday.

The worldwide assessment of more than 700 species of corals showed that 32.8% were threatened with extinction, especially those that formed large mounds or intricate branches resembling antlers.

Coral reefs provide hiding places and a habitat for 25% of all marine life and are a major source of food for the poor and of tourist revenue in tropical countries.

Some of the threats are global, including elevated ocean temperatures that have stressed corals so much that they are "bleached" bone-white. A massive bleaching

brought on by warmer waters in the 1998 El Niño resulted in a vast decline of the world's reefs.

Corals also face excessive and destructive fishing and polluted runoff that buries them under sediment or bathes them in nutrients that fuel out-of-control growth of algae and bacteria.

Compounding the problem are various diseases that kill corals when they are under stress.

Using criteria established by the International Union for Conservation of Nature, the team of scientists determined that a loss of reefs and mounting threats had nudged the animals into the "critically endangered," "endangered" or "vulnerable" categories, leapfrogging other groups threatened with extinction.

"That makes corals the most threatened animals on Earth," said Greta Aeby, a coral disease expert at the Hawaii Institute of Marine Biology.

Close behind are frogs and related amphibians, which also have been on a steep decline in recent decades because of pollution, loss of habitat and climate change.

The results, released online Thursday by the journal Science, were presented at the International Coral Reef Symposium in Fort Lauderdale, where nearly 3,000 scientists and managers have gathered to learn about the latest scientific discoveries and try to figure out ways to save the world's reefs.

Kent Carpenter, director of the international union's Global Marine Species Assessment and lead author of the Science article, emphasized the importance of coral reefs beyond their majesty and beauty to tourists donning snorkels and masks.

"Corals make up the very framework of the coral reef ecosystem," said Aeby, one of 38 scientists who collaborated on the study. If they disappear, she said, "we can expect to lose the fish and crabs and other critters that depend on these corals."

Loss of coral reefs could have a profound effect on more than 500 million impoverished fishermen in the tropics who rely on them to feed themselves and their families, said David Obura, a marine biologist and East Africa coordinator for the Coastal Oceans Research and Development-Indian Ocean.

"People rely on coral reefs every day," said Obura, another coauthor. "In places like the Indian Ocean, we need to work with fishermen and help people decide not to fish in a destructive way."

The decline of reef-building corals can be blamed primarily on the loss of the two major branching corals in the Caribbean in recent decades.

William F. Precht, manager of damage assessment and restoration for the Florida Keys National Marine Sanctuary, said that 95% to 98% of the elkhorn and staghorn corals in the Keys and elsewhere in the region had been lost to disease, toppled by hurricanes or crowded out by thick mats of algae and bacteria.

Both are listed as threatened with extinction under the Endangered Species Act.

But it is the rich diversity of corals in the tropical waters of the West Pacific, a place called the Coral Triangle that includes Malaysia, Indonesia and the Philippines, that presents the potential greatest loss of species.

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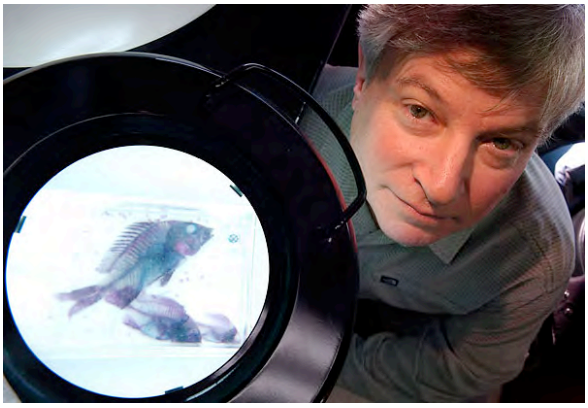
PilotOnline.com

Reef study puts an ODU professor in the limelight

By Scott Harper

July 11, 2008



NORFOLK

Kent E, Carpenter, an ODU biology professor, is lead author of the first global study of coral reefs. The results were published Thursday in Science. (Steve Earley | The Virginian-Pilot)

His findings
One-third of all reef-building corals are threatened with extinction, mostly because of environmental degradation and climate change, according to Kent E. Carpenter at ODU.

The research
ODU's Kent E. Carpenter and colleagues in the United States and 10 other countries spent nearly two years on the research project, compiling data on more than 700 coral species and visiting reef sites around the world.

Expect to see and hear Kent E. Carpenter a lot the next few days.

The biology professor at Old Dominion University was scheduled to be on NBC's "Nightly News" on Thursday and on National Public Radio's "Science Friday" this afternoon.

He also has been interviewed for pieces by the BBC, the British newspapers The Guardian and The Independent, National Geographic, Scientific American and the journal Science.

Why all the fuss?

Carpenter is the lead author of the first global study of coral reefs and the hard, often beautiful plantlike creatures that compose them.

The results, published Thursday in Science, are dramatic: One-third of all reef-building corals are threatened with extinction, mostly because of environmental degradation and climate change.

Carpenter explained how the culprits are causing havoc.

Higher water temperatures from climate change are allowing more diseases and algae to thrive in the ocean s, he said. Too much algae and disease stress or kill the corals, which then cannot build their reefs.

The once-colorful reefs turn white, a process called bleaching, which indicates a sick or dying system. Add increasing amounts of mud and sediment sliding onto reefs from coastal development projects, such as hotels and roads, and a perfect storm of environmental ailments has been created, Carpenter said.

"When corals die off, so do the other plants and animals that depend on coral reefs for food and shelter," the Norfolk-based scientist said, "and this can lead to the collapse of entire ecosystems."

Carpenter and colleagues in the United States and 10 other countries spent nearly two years on the research project, compiling data on more than 700 coral species and visiting reef sites around the world.

The most vulnerable corals, according to the study, were found in the Caribbean Sea. There, fishing pressures, development, pollution and rising water temperatures are threatening many coral species.

The most surprising results - and the ones most alarming to Carpenter - were chronicled in the "coral triangle" between Indonesia, Malaysia and the Philippines.

In this rich Pacific ecosystem, researchers documented a high percentage of corals as stressed and suffering - a condition few of the scientists expected to see.

"If trends continue there, you can expect to see a big hit on the reefs in the triangle," Carpenter said. "It could be devastating."

On Thursday, Carpenter was attending an international conference on coral reefs in Fort Lauderdale, Fla. Reached by phone, he chuckled at the recent media buzz over the study.

"It's kind of crazy," Carpenter said. "I've been hanging out in the media room at the conference when I'd really like to be inside, listening to all the terrific papers being presented here."

Carpenter is not new to the big stage.

In 2006, the president of the Philippines, Gloria Macapagal Arroyo, invited him to the capital and gave a speech applauding his team's research concluding that the most biodiverse waterway on Earth was a stretch of ocean off one of the islands there.

Arroyo then surprised the assembled scientists by declaring the Verde Island Passage as the country's first marine sanctuary. Carpenter called the event the proudest of his career.

With coral reefs, Carpenter said other studies have long detailed how such ecological structures are threatened throughout the world, including one released earlier this week by the National Oceanic and Atmospheric Administration that said about half of all reefs in the United States are in fair or poor shape.

His research differed, however, in that it looked closely at the individual corals that make up reefs, and found that the creatures themselves were at risk of disappearing.

"We pinpointed a rate of decline in the species," he said from Florida. "If they go extinct, so goes the whole ecosystem."

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Study: Global Coral Crisis Is In Full Bloom

by John Nielsen

July 11, 2008

Black band disease spreads across a colony of Favia speciosa at the Great Barrier Reef, Australia. *Cathie Page*

White spots mark areas of disease on a coral in Little Kelso Reef, Great Barrier Reef, Australia. *Cathie Page*

Morning Edition, July 11, 2008 · Coral reefs around the world are in bad shape these days. But a new research paper in the journal Science says their problems may be getting worse. The paper says as much as a third of the world's coral species may now be headed toward extinction, thanks to problems ranging from destructive fishing boats to ocean waters warmed by global climate change.

Coral experts say these reefs hold 25 percent of the world's marine species. That list includes sponges, lobsters, turtles, shrimp, sharks and commercially important fish. Philip Munday, a reef expert at Australia's James Cook University, says that's why coral reefs are often called "the rain forests of the ocean."

"It's quite stunning when you get into the water on a lovely clear day and you drop down onto [healthy] reef," says Munday. "There are fish everywhere, hundreds of thousands of fish, the sort of things you almost don't see anywhere else."

Unfortunately, reefs like those are few and far between these days. And Kent Carpenter, a reef expert at Virginia's Old Dominion University, says the problems faced by these important ecosystems may be worse than a lot of experts think they are. In a new paper, he reports that a third of the world's coral species are now declining toward extinction, partly owing to increased outbreaks of coral diseases. Corals that aren't killed off by these new diseases are recovering more slowly, he reports. Some are slowly overwhelmed by ugly gobs of algae.

"I have been on several coral reefs recently that have had large clumps of algae growing on the reefs themselves," he said. "And if you pull off the algae, you see that the coral underneath them has died, because it couldn't get any sunlight."

Carpenter says sights like those are easily as ugly as the image of a thriving reef is beautiful, adding that in his opinion a global coral crisis is now in full bloom.

"This is a whole ecosystem that we potentially could be losing," he said.

That's the central message in the paper Carpenter has just published in Science. He says he prepared it with the help of coral researchers affiliated with the International Union for Conservation of Nature, a nonprofit conservation group whose scientific work is widely thought to be definitive.

The coral researchers pored through records kept at field stations near coral reefs found all over the tropics. Carpenter says the result is a so-called coral "red list" that concludes that a third of the world's coral species may be declining toward extinction. He says the researchers found some evidence of a link between coral-killing diseases and warming ocean waters. He adds that it's possible that even bigger problems will emerge if emissions of global warming gases aren't reduced soon.

For example, he says ocean waters are becoming more acidic as they soak up carbon dioxide, the main global warming gas. And while there's evidence that coral reefs can find ways to adapt to waters warmed by global climate change, there's no proof that they can cope with more-acidic oceans.

"Obviously the overarching problem that has to be solved is the [buildup of man-made] carbon dioxide in the atmosphere," he said.

Carpenter's new paper drew a lot of attention at a coral reef conference held this week in Fort Lauderdale, Fla. The paper also drew support from a different report prepared by scientists with the National Oceanic and Atmospheric Administration. That paper concluded that a quarter of the coral reefs in U.S. waters were in poor condition.

There are some rays of hope in the new coral red list. For example, it appears to show that reefs in some parts of the far Pacific are now thriving in the warming waters. And Munday, the Australian reef expert, says research conducted near the Great Barrier Reef appeared to show that when a wounded coral reef is put off limits to commercial fishermen, large numbers of big fish fill the area in a few years.

"That gives us enormous hope that these populations ... can rebound if they're given the chance to do so," he says. Munday says these programs won't protect coral reefs from problems caused by global warming. But they might help buy the reefs a little extra time.

Study: One-third of Coral Reef Species Face Extinction

Nearly a third of the world's coral reef species face extinction, threatening entire ocean ecosystems.

By Jenny Marder, NewsHour with Jim Lehrer

July 11, 2008

Overfishing, ocean pollution and global warming are wreaking havoc on the delicate coral, home to more than a quarter of the world's marine life, and many reefs may have lost the ability to replenish themselves, according to a study published online in the journal Science on Thursday.

Kent Carpenter, director of the Global Marine Species Assessment project at Old Dominion University and lead author of the study, tracked 704 of the 845 known species of coral. He found that 241 of those are at risk of extinction, and they're dying at an alarmingly fast rate.

Carpenter's study adds to the already sobering body of evidence on the state of the world's coral.

"Because of the rate of decline of coral reefs, there's a problem with the corals' ability to replenish themselves," Carpenter said. "If some of the corals start to go extinct, then the ecosystem will cease to function."

The study is the first to rate a large body of coral according to criteria established by the International Union for the Conservation of Nature's Red List of Threatened Species, the world's most comprehensive threatened-species list.

John Bruno, a marine ecologist at the University of North Carolina at Chapel Hill, called the study a milestone for coral reef conservation efforts.

"It's not new in the sense that it's saying that corals are in trouble," Bruno said. "There's been lots of research saying that populations are declining. But it's new in showing that they are threatened by extinction."

Coastal pollution, overfishing, and logging and other land use all contribute to rapid coral decline.

"Overfishing is unbelievable in the ocean's reefs," Bruno said. "And there are a lot of local problems from sediment run-offs from farms and poor land use practices. Sediment make coral sicker."

Warming water temperatures compound the problem by disrupting the symbiotic relationship between coral and the algae that live inside it and are essential for its survival. As temperatures rise, the inner algae, or zooxanthella, are expelled in a process known as bleaching, making coral even more susceptible to die-offs and disease.

"Bleaching and disease events are becoming more frequent and more widespread," Carpenter said. "And most scientists agree that it's directly linked to climate change."

Carbon emissions are also changing the pH level of the world's oceans, according to recent research. Oceans have absorbed about 40 percent of the carbon dioxide emitted by humans, according to a study released in Science earlier this month. As a result, oceans are becoming more acidic. That further damages marine life and reef habitats, and it allows jellyfish and toxic algae to grow unchecked.

Caribbean reefs -- such as the Elkhorn and the Staghorn -- are in particularly bad shape, as are reefs in the Philippines, where Carpenter does most of his work, he said.

In 1998, marine biologists witnessed a massive coral bleaching event that sent marine diversity tumbling and resulted in a mass decline of the world's reefs. Yet some of them later recovered, Carpenter pointed out.

His concern now is that many reefs have lost the ability to recuperate, as they did in the past.

"The prime problem is the frequency," Carpenter said. "If the local threats combined with the global threats make die-offs more frequent, then coral won't be able to recuperate in time. Then they're going to be lost."

Coral loss doesn't just impact marine animals, he added, but the hundreds of millions of people living along coastlines. "If we do not curb our CO2 problem in our atmosphere and enact strong coral reef conservation measures, then we are going to lose our most important ecosystem."

NEWS.scotsman.com

Corals at risk – and we're to blame

By Jenny Haworth, Environment Correspondent

July 11, 2008

The cruel sea: Of the 704 coral species studied by scientists, no fewer than 231 were found to be under threat of extinction Picture: HO/AFP/Getty Images

A THIRD of the world's reef corals are at risk because of climate change and other human activities, scientists have warned.

Carbon dioxide levels, coastal development, sewage discharge and overfishing are all putting coral species at the threat of extinction.

Scientists said urgent conservation measures were needed or there could be mass biodiversity loss, and an impact on the hundreds of millions of people who rely on reef fish for food.

The authors of a study published in the journal Science assessed 845 tropical reef-building species and found that, of the 704 for which sufficient information existed to judge the risks they faced, 231 or 33 per cent, were under threat of extinction.

When this was broadened out to include species that were "near threatened", 407 species – more than half of those assessed by the scientists – were at risk.

The report's authors warned: "Our results emphasise the widespread plight of coral reefs and the urgent need to enact conservation measures."

They said the results showed the extinction risks for corals had increased dramatically over the past decade and now exceeded those for all terrestrial animal groups, apart from amphibians.

The Caribbean has the largest proportion of species in the high extinction risk categories, the study said, while the Coral Triangle in the western Pacific has the highest proportion of species in all categories of extinction risk.

The scientists said the threats were the result of rising levels associated with climate change, as well as local human impacts.

The raised levels of had increased sea surface temperatures, leading to the "bleaching" of corals, and made the oceans more acidic, which harms the coral's ability to build its skeleton.

The Intergovernmental Panel on Climate Change has predicted increased acidification of the oceans by the end of the century, and Dr Alex Rogers, one of the study's authors, said this presented "disastrous scenarios" for corals.

The research warned destructive fishing, sewage, coastal development and the use of agricultural chemicals were all reducing the ability of corals to withstand the threats caused by climate change and to rebuild reefs.

Dr Rogers, a senior research fellow at the Zoological Society of London's Institute of Zoology, said: "The resilience of corals to bleaching and ability to recover is heavily influenced by other stresses the corals are under, such as overfishing or destructive fishing, declining water quality and nutrient loading from agrochemicals."

While coral reefs cover no more than 0.2 per cent of the earth's surface, they host to up to two million species, with a quarter of all marine fish species found there.

"In terms of humans, they are massively important as a source of food, and globally it is estimated they deliver ecosystem services of £15.2 billion," Dr Rogers said. "They also have major effects on coastal protection from storms and flooding."

The study concluded that whether corals become extinct this century will depend on the severity of climate change, the extent of other environmental disturbances and the ability of corals to adapt.

"If corals cannot adapt, the cascading effects of the functional loss of reef ecosystems will threaten the geologic structure of reefs and their coastal protection function, and have huge effects on food security for hundreds of millions of people dependent on reef fish," it warned.

The full article contains 553 words and appears in The Scotsman newspaper.

ISLANDS BUSINESS

Thumbs up to Pacific reefs

Samisoni Pareti

July 11, 2008

Islands Business Exclusive

Coral reefs in the islands of the Pacific have been granted a clean bill of health in this American city where leading marine scientists had been meeting since Monday as part of the 11th International Coral Reef Symposium. Director of the University of the South Pacific's Institute of Marine Studies Dr Ken Mackay reported data shows that corals that had suffered severe bleaching had recovered.

Fort Lauderdale, Florida – Coral reefs in the islands of the Pacific have been granted a clean bill of health in this American city where leading marine scientists had been meeting since Monday as part of the 11th International Coral Reef Symposium. Director of the University of the South Pacific's Institute of Marine Studies Dr Ken Mackay reported data shows that corals that had suffered severe bleaching had recovered.

"It's been good news all around," Dr Mackay told islandsbusiness.com "Our monitors around the islands of the Pacific are all reporting recovery from the bleaching coral suffered in 2000 and 2002 to 2004." Coral recovery has been nothing short of spectacular in some areas, the university marine biologist told the international symposium. Some corals on Beqa Island in Fiji for example suffered 80% bleaching in 2000, with some species inflicted 100%. "Bleaching in Beqa actually spurred te formation of the network to monitor the health of coral reefs not only around Fiji but in islands around the Pacific as well.

"Our data for 2007 shows that coral cover is as good as before coral bleaching struck. "In some areas, corals are much more diverse than pre-bleaching time." Resilience in coral reefs in the Pacific is being widely discussed during the five day conference inside the sprawling Greater Fort Lauderdale/Boward County Convention Centre on Eisenhower Boulevard. Scientists are keen to see the lessons learnt, especially as coral reefs that were stricken with bleaching in the Caribbean have yet to undergo similar recovery as seen in the Pacific. The consensus seems to suggest that healthy corals recover much more quickly.

Signs of coral reef recovery, Dr Mackay said in his report, had also been seen in Samoa, proof that the system has also recovered from the effects of a cyclone it suffered three to four years ago. “The impact of the tsunami on corals in the Solomon Islands is still to be known and we will need to continue monitoring there. “For Tuvalu, monitoring for now is limited to the lagoons of Funafuti and figures are suggesting a somewhat reduced coral cover. “This can be attributed we suspect to land degradation in the country’s capital.” That the coral reefs in Fiji and around the islands of the Pacific seemed to be healthy took Dr Mackay and his team of monitors by surprise. “With some incidence of coral bleaching reported in 2002 and again in 2004, we were actually bracing to see more cases of bleaching this year. “But this has not happened and I suspect that this could be the result of the two cyclones that came to Fiji in 2007.” Dr Mackay was accompanied to the international coral reef symposium by his colleagues Edward Lovell, Isoa Korovulavula, Patrick Fong and Zaidy Khan. Through sponsorship from the Washington DC-based marine conservation NGO Seaweb, two Pacific journalists Titi Gabi of Papua New Guinea and Samisoni Pareti of Fiji-based Islands Business magazine were among a group of 16 invited from around the world to provide coverage of the five-day gathering that ends in this sea-side holiday city on Friday. Amongst the group was Pulitzer Prize winner, Ken Weiss of the Los Angeles Times, Tim Radford of the Guardian in London, Steve Conover of The Independent in London as well and Corriene Podger of Australia’s ABC.

Outside BLOG

Coral Reefs May Be Threatened By Acidic Ocean

Alex Crevar

July 11, 2008

The lead in a Reuters' article summarizing scientific findings from the coral reef conference being held this week in Fort Lauderdale reads, "Like a tooth dipped in a glass of Coca-Cola, coral reefs, lobsters and other marine creatures that build calcified shells around themselves could soon dissolve as climate change turns the oceans increasingly acidic."

The piece continued: "The carbon dioxide spewed into the atmosphere by factories, cars and power plants is not just raising temperatures. It is also causing what scientists call 'ocean acidification' as around 25 percent of the excess CO2 is absorbed by the seas."

The problem with reef and underwater news stories is that many readers can't relate. Unless you are a diver -- and at this point, a fairly old one -- it's difficult to grasp how much has been lost. Excuses aside, these new findings are particularly alarming.

What we know is that the "pH value of the oceans has been around 8.2 (7 being neutral) for hundreds of thousands of years...." What we don't know is where we are going to end up on that scale. The U.N. predicts, by century's end, that pH number will get to 7.8. Coral reefs -- the deep's apartment complexes, where marine life congregates, eats, hides, and lives -- begin to decalcify at 7.6. If the pH of the ocean drops more than predicted, or continues to drop, then the skeletons of the corals could turn as soft as marshmallows.

According to the report, the most we can do now is "develop ways to help coral reefs adapt to a changing environment so as to buy them another 40 of 60 years of existence before hoped-for cuts in industrial pollution begin to have an impact."

According to Simon Donner of the University of British Colombia: "The climate is like this big ship. In our case the ship's the Titanic and we're going to hit the iceberg. It's almost impossible for us not to hit the iceberg."

"What we need to do is everything we can to put the brakes on, to slow the ship down, and then do whatever we can -- hopefully the coral will help us with this -- to move the iceberg a little bit."

--Alex Crevar

Coral warning

July 11, 2008

231 out of 704 species should be classified as "critically endangered, "endangered, or "vulnerable"

A third of reef-building coral species are at risk of extinction, a major new scientific study has warned.

According to a report published in journal Science, 231 out of 704 species should be classified as "critically endangered, "endangered, or "vulnerable".

The study saw a team of coral experts team up with the International Union for Conservation of Nature (IUCN) ahead of the publication of the organisation's updated Red List – which details the world's most vulnerable species – later this year.

Kent Carpenter, director of the IUCN's Global Marine Species Assessment (GMSA), said: "The results of this study are very disconcerting.

"When corals die off, so do the other plants and animals that depend on coral reefs for food and shelter, and this can lead to the collapse of entire ecosystems."

Researchers said climate change, as well as pollution, over-fishing and other human disturbances, were the biggest contributory factors to coral species' plight.

"Our results emphasise the widespread plight of coral reefs and the urgent need to enact conservation measures," they write.

Report: One Third of World's Coral Reefs Could Face Extinction

By Jessica Berman

July 11, 2008

Experts say one-third of the oceans' coral reefs face extinction by the middle of the century if nothing is done to save them. The reefs are home to a vast array of sea creatures, which experts say would also be endangered by the loss of the reefs. VOA's Jessica Berman reports.

A group of thirty nine leading coral experts from around the world sounded the alarm in the first-ever global assessment of coral reefs.

Coral reef

Corals are tiny sea creatures that lay their skeletons down to form large reefs that have been built over millions of years.

Kent Carpenter of Old Dominion University in Virginia led the study, published this week in the journal Science, on the threat to the world's coral reefs, which are produced in tropical and sub-tropical seas in coastal waters.

Carpenter says steps must be taken now to reduce greenhouse gas emissions and stop over-fishing and pollution of the oceans.

Kent Carpenter

"If we do not do those things, then, at the current level of how things are going, we will probably lose our coral reefs by the middle of this century," Carpenter said. "So, 2050 is the date that many people are predicting that coral reefs will cease to exist."

Carpenter says, as ocean temperatures rise, corals throw off algae attached to them that are essential for their survival.

"Normally, when you see a coral, it's tan or green or some colorful color," he said. "But when they expel their algae inside of them, then they become white. And this is a phenomenon known as bleaching. Another consequence of higher temperatures is increased disease, and this can cause mass die off."

Carpenter says the coral reefs at greatest risk of extinction are the most common - the branching or staghorn coral.

According to the report, the Caribbean has the greatest number of threatened coral species.

The report also lists corals within the Pacific's Indo-Malay-Philippine Archipelago as threatened because of large concentrations of people.

Experts say more than 25 percent of marine species depend upon the reefs for their survival.

Carpenter says humans also depend upon coral reefs.

"They are important for food and important for other types of livelihoods," he said. "So, if we lose the ecosystems, we lose not only the biodiversity, but we also lose the capability of people to obtain income and food from coral reefs."

However, Carpenter says he and other marine biologists believe the coral reefs can be rescued through targeted conservation efforts and a reduction in greenhouse gas emissions.

Earlier this week, a U.S. government report said nearly half of coral reefs in U.S. government territory are in poor or fair condition.

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The Reel Downfall of Reefs

By Christopher Pala

July 11, 2008

Controlling Fishing to Save the Coral Reefs Across the world coral reefs are dying because of over-fishing. It is the fish which protect the reefs from excessive algae, the main culprit in coral death. For over a millennium, inhabitants of small islands who depended on seafood for survival practiced conservation or starved. In the 20th century, however, improvements in fishing gear and increased saefood demand have led to a breakdown of the once sustainable system. A fifth of the reefs are now completely dead and most of the rest now support a fraction of the marine life they once did.

In the Caribbean, the predators were eliminated first, then the herbivores, until only the sea urchins were keeping the algae density down. When an epidemic wiped out most of the Caribbean's urchins in 1983, the corals died, too. Now the regions coral cover is estimated at only 13 percent, from 50 percent 30 years go, according to Alan Friedlander, a Hawaii-based marine ecologist.

Today, across the Pacific, people who depend on seafood for survival are beginning to buck the trend - placing limits on how much one can fish and setting aside no-take areas where the fish populations can reproduce in peace.

The trend began in Palau a few years ago as the Micronesian Challenge, a conservation initiative to ban or severely restrict fishing in 30 percent of coastal waters by 2020. Palau's dependence on diving tourism has been a powerful motivator. The challenge was proposed by Palau president Tommy Remengesau, Jr., who was named a Time Magazine Hero of the Environment last year and is receiving major financing from the Nature Conservancy. The campaign-urging the nations of Palau and nearby islands to adopt this conservation initiative - has already spawned imitators in Asia and the Caribbean.

One of the most successful comebacks, according to Friedlander, has emerged in largely fished-out Hawaii. Moomomi Bay, a small fishing community of mostly indigenous Hawaiians, has achieved the spectacular result of two metric tons of fish biomass (total weight of all fish) per hectare for a 10-mile strip of coastline, while feeding 1,500 people. The locals use a very precise lunar calendar and ban fishing when fish aggregate to spawn. (To compare, Fiji's present average biomass is 0.6 tons,

the California kelp forest's is 0.4 tons, and the Great Barrier Reef, which is commercially fished, has about 1.7 tons, says Friedlander.)

Hawaii, which boasts one of the highest densities of Marine Protected Areas in the world, with some dating back 40 years, was also the site of a landmark study last year that quantified just how many fish come back when a no-fishing marine protected area is created, and how fast. Incentives to help the fish return included creating big no-take reserves and limiting fishing in areas between them.

The reef conservation movement comes just in time, since global warming trends are bringing increasingly frequent spikes in tropical ocean tem- peratures, causing mass deaths of corals, the fish communities they support and the shorelines they protect from waves. At the same time, researchers are solving the biggest problem confronting marine sci- entists: the lack of baselines. A baseline, in the natural sciences, is an ecosystem that has not been affected by man before it could be studied. Only in the last half-century has marine science progressed beyond dissecting fish, and, by then, most of the marine ecosystems had been altered by over-fishing, invasive species or pollution.

Close examination of remote pristine islands - the most thoroughly studied of these is Kingman Reef, a U.S. possession 930 miles south of Hawaii - has revealed surprising findings. Comparing uninhabited and protected Kingman with populated Christmas Island 400 miles to the southeast, a team led by the Scripps Institute of Oceanography in La Jolla, California, found that the corals in Kingman were a model of health while those in Christmas were sickly and lacked growth. Searching for answers, they counted fish.

They found that Kingman has a biomass of a whopping 5.3 metric tons per hectare, of which 85 percent are sharks, jacks and other top predators. Christmas, where all the sharks have been fished out so their dried fins can be sold to the lucrative Chinese market, has a biomass of 1.3 tons. The amount of microbes in the water, including pathogenic viruses, was 10 times greater in Christmas than in Kingman.

While the total biomass of herbivores was not much different in both islands, Christmas was dominated by damselfish, which essentially farm the algae they eat, while Kingman was dominated by tangs, which eat much more algae. The researchers concluded that the greater amount of bacteria in Christmas stemmed from a greater amount of sugar in the water released by algae, and that these microbes ate coral eggs and sperm and attacked adult corals weakened by excessive algae. Thus, the presence of large numbers of sharks was linked for the first time to the health of the coral reefs.

"We found that the corals at Kingman were surviving hot-water periods very well and those at Christmas were not," says Stuart Sandin of Scripps.

Today, most Pacific islanders are focused on bringing back the fish they can eat, like groupers, snappers and jacks, and the herbivores that will keep their reefs healthy. But

as science progresses, the importance of bringing back the whole ecosystem, sharks and all, is going to come into focus.

CONTACTS: The Nature Conservancy, (703) 841-5300, www.nature.org; Scripps Institute of Oceanography, www.sio.ucsd.edu.

- *Christopher Pala*

Nassau Grouper photo captured in Cayman Brac wins International Award

July 11, 2008

Bill and Donna Goodwin have been visiting the Cayman Islands for quite some time. They have visited seven times in the past five years for diving excursions and also made three two weeks diving trips to Grand Cayman in 1976, 1977 and 1991. Bill began his diving quest in 1958 in Southern California and his wife Donna began diving in 2002.

On a trip to Cayman Brac in 2007, they came with the intent to dive and have a good time while taking photos of the scenic beauty which the island shores and dive spots possess. During that visit while diving in one of their favourite spots, they came across a Nassau Grouper peeking through a sea fan at them. They have known this particular grouper for three years as they watched her grow from the years they have been visiting the waters of Cayman Brac.

Both have watched the grouper grow from a tender age, and have observed her digging passages between the reefs and the sand then squeezing through the passages. This peculiar activity led them to coining the name “Slip” for this amusing grouper. Mr Goodwin is happy that Slip has not been caught as he has observed that illegal fishing is practiced in the area.

“Nassau groupers and many other groupers are now protected by law in many places because they are severely over fished and in such low numbers, and many fisheries biologists already fear that the remaining population is insufficient to assure that they won’t go extinct in the near future.

“If people knew how much groupers and other large Caymanian fish (especially mutton snappers) behave like dogs, they may think twice about killing these playful, curious and intelligent creatures,” Mr Goodwin said.

The picture in the story was taken in a protected section of reef in Cayman Brac in 2007 and won “Best in Show” from amongst 600 entries by coral reef experts all over the world, at the 11th International Coral Reef Symposium in Fort Lauderdale. The prize is a ‘live aboard’ dive trip on Peter Hughes’ Wind Dancer in the waters of Trinidad and Tobago. Mr Goodwin explains that he is greatly honoured by this award, but said Cayman Brac should also feel pleased because the photo was taken in its waters and the vast majority of the pictures in this competition came from the far more bio diverse reefs of the Indo-Pacific. “This picture would not likely have happened if there were not

a few preserves where fishing and spear fishing are not allowed in the Cayman Islands," he said.

The group prefers to dive from shore, although they frequently go out on boats when the dive spots are too far away to swim towards. "We like shore diving better because it is more free - nobody's schedule but our own, no crowds on the boat and in the water with us, and it's 'greener', Mr Goodwin said.

"We find our locations for shore diving from guidebooks, speaking with local divers, or just trying a place based on the ability to negotiate the iron shore or other obstacles. On Cayman Brac we do most of our dives at Buccaneer Reef and Lynne's Reef (named for Lynne Walton), just behind the Walton's Mango Manor, Atlantis (both the sculpture garden of Foots and the reefs between it and shore), Greenhouse, Police Cut (a bit beyond the "Panama Canal" in Creek), Public Beach, and some other spots that are secret," said Mr Goodwin.

"As people who closely follow the developments in researchers' efforts to stop and/or reverse the damages caused to reefs and their denizens, we (like many people) are appalled at the decline in biodiversity, coral health, and fish populations seen on coral reefs around the world, and specifically the reefs in the Caribbean.

"The 'canary-in-a-coal-mine' species, most notably elkhorn and staghorn corals, giant sea anemones, and crinoids, have all completely disappeared or become very rare on Cayman's reefs; not only by my own observations over more than three decades diving the islands, but according to numerous surveys taken by reef scientists."

There is considerable pressure to maintain 'traditional activities' that are the birthright of Caymanians and from lengthy conversations with MLA Moses Kirkconnell and remarkable fisherman Tenson Scott the notion of these 'traditional activities' will end soon, because scientists have documented that the reefs are changing from coral reefs to algae reefs and as such, laws will soon have to be enforced. This huge shift has already been 90 percent completed in the Bahamas, Haiti, Jamaica and other Caribbean Islands and is well underway in the Cayman Islands.

The cause for the world-wide coral reef crisis is partly nature and mostly man. Bleaching events (loss of the symbiotic algae in coral tissues caused by high water temperatures and other predominant natural causes) occur with or without humans. Nutrients from treated sewage tilt the balance of life on reefs in favour of faster growing macro algae, which then overgrow existing coral and take up all space where coral embryos would settle. Acidification of the oceans from dissolved greenhouse gases breaks down the calcium carbonate structure of reefs which have become exposed because of storm damage.

As it relates to the Cayman Islands, anything that removes animals that eat macro algae, is deleterious to corals. In the Cayman Islands, this normally occurs in the form of spear fishing and other methods of catching Parrotfish. Parrotfish and sea urchins have

repeatedly shown to be the major browsers that keep algae under control - and the parrotfish are a major target of Cayman's spear fishermen. "We have dived all over the Caribbean, and one of the few places showing a drop in parrotfish populations is the Caymans.

"Caymanians are gradually realizing that their traditional fishing practices are just about at an end, whether they like it or not. Even if parrotfish, grouper and other fish are completely protected, the algae-favouring nutrient from sewage effluent needs to be dealt with soon. These are the minimal basic steps recommended for reef recovery by the International Society for Reef Studies, the sponsoring organization for the 11th International Coral Reef Symposium (ICRS).

The ICRS, which meets every four years, convenes on July 5-11 in Fort Lauderdale. For the first time in 30 years this event hasâ€¯been held in the United States and has been attended by officials of the Department of Environment. The ICRS is the largest meeting of coral reef scientists, managers and conservationists in the world, with over 2300 scientific papers submitted and over 900 oral presentations to be made," Mr Goodwin said.

Further information on the ICRS can be obtained at http://www.nova.edu/ncri/11icrs/

THE HINDU
News Update Service

Scientists discover new reefs teeming with marine life in Brazil

Doubling the size of the southern Atlantic's largest reef system

July 11, 2008

Fort Lauderdale: Scientists announced the discovery of reef structures they believe doubles the size of the Southern Atlantic Ocean's largest and richest reef system, the Abrolhos Bank, off the southern coast of Brazil's Bahia state. The newly discovered area is also far more abundant in marine life than the previously known Abrolhos reef system, one of the world's most unique and important reefs, according to Eurekalert, the news service of the American Association for the Advancement of Science.

Researchers from Conservation International (CI), Federal University of Espírito Santo and Federal University of Bahia announced their discovery in a paper presented today at the International Coral Reef Symposium in Fort Lauderdale. "We had some clues from local fishermen that other reefs existed, but not at the scale of what we discovered," says Rodrigo de Moura, Conservation International Brazil marine specialist and co-author of the paper. "It is very exciting and highly unusual to discover a reef structure this large and harboring such an abundance of fish," he adds.

The Abrolhos Bank is considered one of the world's most important reefs because it harbors a high number of marine species found only in Brazil including species of soft corals, mollusks and fish found only in the Abrolhos shelf. The Mussismilia coral genus, a relic group remnant of an ancient coral fauna dating back to the Tertiary period that went extinct long ago elsewhere in the Atlantic, is the dominant coral of the Abrolhos reef, which is structured in unique mushroom-like shapes.

Researchers mapped the new reef structures in areas ranging from nine to 124 miles (15 to 200 km) off the coast and in depths ranging from 60 to 220 feet (20 to 73 meters) using a side scan sonar which produces a three-dimensional map of the marine seabed.

"Due to their relative inaccessibility and depth, the newly discovered reefs are teeming with life, in some places harboring 30 times the density of marine life than the known, shallower reefs," says Guilherme Dutra, Conservation International's director of marine programs in Brazil. "That's the good news. The bad news is that only a small percentage of marine habitats in the Abrolhos are protected, despite mounting localized and global threats."

Localized threats include over-fishing, coastal development and large scale land conversion to agriculture, shrimp farms, pollution, oil drilling and sedimentation. Global threats include climate change and ocean acidification.

Researchers acknowledged the conservation effectiveness of the present network of Marine Protected Areas in the Abrolhos. But it is very limited and not nearly enough vis-à-vis the mounting threats, they added.

The next phase of the Abrolhos project will be to study the marine life in the new reef structures.

"These studies reveal the complexity and connectivity of the reefs in the Abrolhos region and will support conservation planning," states Guilherme Dutra

CONCORD MONITOR

Reef fish disappearing in Hawaii

Overfishing blamed for decline in species

By Kenneth R. Weiss, Los Angeles Times

July 11, 2008

Sharks, jacks, parrot fish and other colorful reef fish are quickly disappearing from coral reefs encircling the Hawaiian Islands, federal scientists reported Tuesday.

The scientists blamed overfishing for the steep decline, which affects three-quarters of the species once commonly found on coral reefs that support subsistence fishermen.

Many of these fish, ecologists say, are key to maintaining healthy coral reefs because they keep reefs clean by grazing on algae that can quickly overgrow the stony corals and cause them to collapse.

Alan Friedlander, a federal fisheries ecologist, said Hawaii still has relatively healthy reefs. "So everything hasn't collapsed yet," he said. "But we need to protect healthy reefs because it's so much easier and safer to conserve now than it is to try to rebuild later."

The results of the study, the most comprehensive examination of Hawaiian reef fish, was released at the International Coral Reef Symposium in Fort Lauderdale, Fla. Nearly 3,000 scientists, managers and conservationists congregated there to pore over the latest science and wrestle with ways to protect the world's coral reefs, which are in a state of steep decline.

Many prominent scientists believe that overfishing represents one of greatest challenges to maintaining and restoring healthy coral reefs.

Daniel Pauly, director of the University of British Columbia's Fisheries Centre, pointed out Tuesday that international authorities and local governments on Pacific island nations have little understanding of how many fish are being removed from coral reefs by small-scale subsistence fishermen.

For the most part, catch data compiled by American Samoa and island nations, do not incorporate all of the small-boat fishermen who paddle or motor out to catch fish for themselves and their families. Comparing census data of per-person fish consumption and other sources, Pauly and his team of researchers discovered that in some cases

the unreported catches were 17 times higher than reported catches. On average, they were at least twice as high.

Reconstructing a clearer picture of historic catches, Dirk Zeller and Jennifer Jacquet at the Fisheries Centre found that domestic caches have declined between 54 percent and 86 percent since the 1950s.

This finding is important, Pauly said, because such fish catch data help determine if countries should sell fishing rights to foreign fishing fleets. If the local reliance on fish is underestimated, such deals can come at the expense of an important local source of protein.

"Coral reef fisheries," Pauly said, are "very important because they are supporting millions of people in the developing world." He said that countries and the United Nations' Food and Agriculture Organization need to pay attention to these unreported catches to assure food security of isolated islands struggling with rising prices for imported food as fuel costs escalate.

The study also found that Hawaii's unreported recreational fisheries for reef fish and deep-dwelling bottom fish was equivalent to the total of commercial catch.

"Overfishing is often disputed in Hawaii and elsewhere because catch data is underreported or spotty," Friedlander said.

Friedlander said Hawaii would be well served by tightening fishing regulations. He also said it would be beneficial to set aside no-fishing reserves to conserve coral reefs, helping to ensure that reef fish don't disappear for future generations.

"Probably in Hawaii, more than anywhere else in the United States, people rely on fish to feed themselves and their families," Friedlander said.

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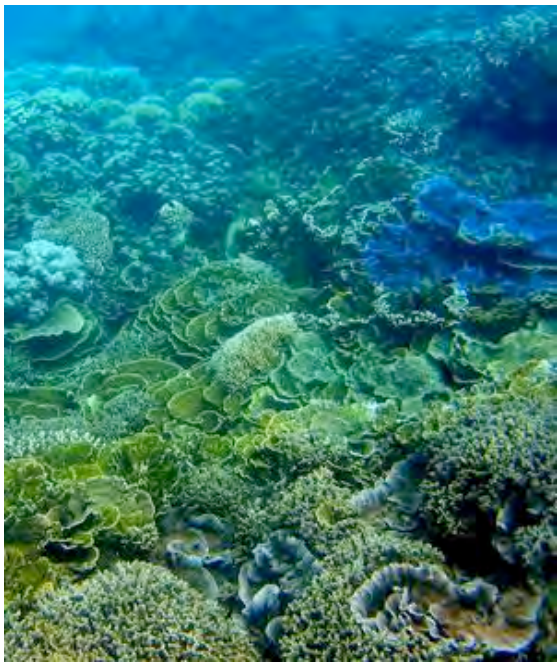
THE AGE

Coral reef deaths threaten tourism

July 11, 2008

Food supplies will run short, tourism will be hit and coastal communities affected as the world's coral reefs gradually decline under climate change, scientists say.



The Great Barrier Reef is under threat, scientists say.

The reefs already were dying at an increasing rate because of global warming and acidification of the oceans, said researchers meeting this week at the International Coral Research Symposium (ICRS) in Fort Lauderdale, Florida.

Chair of the climate change session, Professor Ove Hoegh-Guldberg (Ove Hoegh-Guldberg) of the ARC Centre of Excellence for Coral Reef Studies in Townsville, said there was evidence that all coral reefs were in trouble.

"The evidence suggests reef systems are becoming more brittle, as a result of bleaching, disease and the effects of acidifying water," he said today.

"This means we are likely to see more moonscape-like areas where reefs once used to be.

"This will be accompanied by a switch from the spectacularly colourful fish that people normally associate with reefs to much fewer and plainer ones."

Prof Hoegh-Guldberg said around 500 million people, mainly in developing countries, depended on coral reefs for food and their livelihoods and developed countries used them as a tourism drawcard.

But weakened coral would no longer provide enough protection against the threat of storm surges and tsunamis, particularly with rising sea levels.

"This will be accompanied by murkier, less productive waters as water quality suffers."

Professor Hoegh-Guldberg said researchers had found evidence that the rate at which coral reefs have been deteriorating and disappearing had accelerated in the past five years.

"For the past 30 years, the loss has been between one to two per cent of the world's coral per year," he said.

"The latest data suggest that the rate is now around two per cent a year. This doesn't give us much time.

"If we continue on the pathway that we are on right now, we get to levels where you are looking at the total loss of reef structures worldwide."

Urgent action was needed to cap the use of oil, gas and coal contributing to global warming, he said.

"With no other solutions in front of us, then it would be foolhardy and unethical for us not to consider these urgent actions."

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The Sydney Morning Herald

Coral reef deaths threaten tourism

July 11, 2008

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AAP

FLORIDATODAY.com

Our view: Our dying reefs

Report a call to arms for more protections for Florida's coral reefs and marine life

July 11, 2008

Anyone who has dived or snorkeled the graceful arc of coral reefs along the Florida Keys has seen and felt their magical beauty.
Advertisement

Blazing in color and teeming with fish, they're part of the ocean's pulse, serving as critical nurseries for marine life and the survival of commercial and sport fisheries.

But reefs in U.S waters of the Pacific and Caribbean are in severe decline from global warming, pollution and over-fishing to the point they're in poor or fair condition with the threat growing.

That's the finding in a National Oceanic and Atmospheric Administration report released Monday at the International Coral Reef Symposium in Fort Lauderdale where 15 reef preserves managed by the federal government were put under the microscope.

Since 2005, Caribbean reefs have lost 50 percent of their coral largely because global warming has increased sea temperatures and triggered coral bleaching. Bleaching is caused when greenhouse gases are absorbed in the oceans, making the water more acidic and eating away at corals.

The report also blamed pollution from land -- including sewage and coastal development -- and over-fishing for the drastic decline.

Florida's reefs are protected as part of the Florida Keys National Marine Sanctuary where fishing and recreational uses are regulated. But more must be done to give them a fighting chance at survival and that means tough U.S. mandates to cut greenhouse gases.

It also means expanding fishing bans in areas to give depleted fish stocks a chance to recover.

Florida already has the largest "no take" zone in U.S. waters, with 140 square miles off limits around Dry Tortugas National Park. Furthermore, another 60 square miles are off limits nearby.

Scientists say studies show the zones help fish rebound in a region researchers call "Florida's Yellowstone" because it's home to 300 species that live along reefs where the Atlantic Ocean, Caribbean Sea and Gulf of Mexico meet. The species include such popular fish as grouper and snapper.

The concept is simple:

The longer fish live the bigger they get and the more eggs they produce, so keeping them out of anglers nets will result in a resurgence that will hopefully spread to adjacent waters.

To put the importance of Florida's reef-laden waters in perspective, consider this:

About one-third of the planet's seafood species have already plummeted 90 percent or more and fish populations globally could collapse by 2048 if current fishing and pollution trends are not reversed, according to a 2006 report in the journal Science.

More fishing bans will be controversial and fought by groups such as the Coastal Conservation Association Florida, a nonprofit organization the represents fishermen.

But if fish stocks aren't given more chance to rebound it could mean the eventual end of Florida's commercial and sport fishing industries.

In sum, the report's disturbing results are a call to arms to save Florida's reefs and their irreplaceable marine life before it's too late.

Fish catches unreported

July 11, 2008

A major new study has found fish catches from Pacific island nations are vastly under-reported. The research by the Canadian research organisation, "The Sea Around Us" was presented at the International Coral Reef Symposium in Florida.
It covers half a century of fishing - from 1950 to 2004. The team of scientists involved says in some cases, unreported catches made by local villages are nearly 20 times higher than official figures.

Presenter: Corinne Podger
Speakers: University of British Columbia in Canada, Dirk Zeller; Director of Fisheries Centre, University of British Columbia, Canada, Daniel Pauly

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The global rich are eating the poor's fish: new report shows tropical fish catch gravely under-estimated

Jeremy Hance

July 11, 2008

After a week of bad news regarding marine life — it was reported that half of U.S. coral reefs are in fair to poor condition and one-third of all coral species are threatened globally — there is still more: a study of twenty tropical islands showed that recreational and subsistence fishing has gone almost completely unreported from 1950 to 2004. In fifteen of twenty cases the fish take was at least doubled when local fish catches were added, and in the most extreme case, American Samoa, the amount of fish collected was 17 times what was previously recorded.

"The underreporting is of such magnitude that it boggles the mind," the head of the study, Daniel Pauly, said.

The reason for the large gaps in data is that the United Nations' Food and Agriculture (FAO) does most of its data collecting on fish that is traded. In other words, any fish that is caught and brought home by the fisher goes unrecorded.

The new statistics have widespread environmental, economic, and social implications. Firstly, the island nations studied have been selling fishing rights to large commercial fisheries--which ship to wealthy nations--based on wildly inaccurate data. In effect, commercial fisheries have been able to harvest volumes of fish that are far above sustainability. It also means that

the number of fish left for poor families who depend on them for subsistence is diminishing even faster than predicted.

"This is the antithesis of the Robin Hood parable. Instead of stealing from the rich to give to the poor, we're stealing from the poor to give to the rich," Jennifer Jacquet, one of the researchers on the study, said. For many of these island countries locally-caught fish is an invaluable source of protein.

The researchers argue that in order to have reasonable management plans for the world's marine life, better estimates of global fishing need to become a priority.

The study, undertaken by scientists from the Sea Around Us Project, was presented at the 11th International Coral Reef Symposium in Fort Lauderdale, Florida.

One third of coral species face extinction: survey

July 11, 2008

A landmark global survey of coral reefs has found a third of all coral species are at risk of extinction.

The survey by an international team of scientists was published in the prestigious journal, Science, and announced at the International Coral Reef Symposium underway in Florida.

The study also found the area with the highest number of vulnerable species is the so-called 'Coral Triangle', which covers Papua New Guinea, the Solomon Islands, Indonesia, Malaysia, the Philippines, and East Timor.

One of the researchers, Dr Greta Aeby, of the Hawaii Institute of Marine Biology, says the findings mean coral reefs have joined the ranks of living creatures most likely to vanish permanently from the earth.

"Using information about population sizes, geographic range and also the susceptibility of these different coral species to bleaching, disease, or predation by crown of thorns, we found that approximately one third of our coral species are at risk," she said.

"This makes corals the most threatened group of animals on this earth, second only to the frogs and related amphibians for risk of extinction."

One Third Of Reef-Building Corals On The Verge Of Extinction

By Dee Chisamera

July 11th 2008

Marine biologists never get tired of warning about the dangers human actions pose to one of the most amazing ecosystems on the planet, the coral reefs. The complex associations of marine organisms (plants, fish) need certain conditions to develop (temperature, water composition, light), and as soon as these conditions change, they become vulnerable to diseases, degradation and eventually death.

A study published on Thursday in the online journal Science Express revealed a troubling fact: one third of the world's reef-building corals face extinction. Together with them, a large number of marine species could also disappear, as coral reefs are home to over 4,000 species of fish, as well as other organisms (sponges, jellyfish, sea cucumbers etc.)

The extinction of coral reefs would trigger devastating effects for marine biology, and if that's not enough to draw attention on the matter, maybe the fact that it will also trigger serious economic consequences will.

The authors of the study found 32 percent of the 704 species of corals to be at elevated risk of extinction, and the problem extends across the globe. Phenomena such as diseases and bleaching, as well as anthropogenic disturbances are directly responsible for the growing number of coral reefs threatened with extinction.

The largest proportion of corals in high extinction were found in the Caribbean, while the Coral Triangle in the Western Pacific was found to have the highest proportion of species in all categories of elevated extinction risk. This calls for urgent conservation measures, which we humans have the power to enact before it is too late.

Anthropogenic activities are considered to be the largest enemy for coral reefs around the world. The consequences of irrational live fish trade, ocean acidification, sediments, water pollution and other harmful actions are obvious in many coral reefs today.

Most corals face extinction due to bleaching and disease, experts say, which are directly linked to the rise of water temperature at sea-surface, consequence of global warming. When temperatures go above a certain level, water composition changes, or sedimentation increases, the stress causes the corals to lose their coloration and bleach.

Some coral reefs are known to have been able to recover from bleaching, but if global warming continues, coral bleaching is likely to become irreversible, triggering the death of a large number of corals, scientists warn.

Increasing amounts of CO2 in oceanic waters, obviously a consequence of an increasing amount of CO2 in the atmosphere caused by global warming, trigger ocean acidification, which reduce calcification in corals, as well as in other marine organisms.

Coastal activities, as well as poor land management and pollution, lead to sedimentation, a phenomenon that once more change the living conditions of coral reefs, by increasing the amount of nutrients in the water. This triggers another effect, algal blooms, which take over the water and suffocate the corals.

As if these factors weren't enough, overfishing also contributes to coral reef degradation, as it often target species that are vital to the corals' existence.

The critical condition of corals reefs all over the world was the subject of the 11th International Coral Reef Symposium, which started off on July 7 in Fort Lauderdale, Florida. "Reefs of the future" was the theme of this year's symposium, which highlighted the coral reef crisis and the necessity to protect them, by implementing scientific-based strategies at global scale.

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A third of world's corals in peril

Global warming, local threats risk extinction, profound effect on reefs

July 11, 2008

FORT LAUDERDALE, Fla. — Nearly one-third of the small animals that build the most massive and elaborate structures in coral reefs face high risk of extinction from global warming and local problems, a team of scientists reported yesterday.
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The worldwide assessment of more than 700 species of corals showed that 32.8 percent are threatened with extinction, especially those that form large mounds or intricate branches resembling antlers.

Using criteria established by the International Union for the Conservation of Nature, the scientists determined that loss of reefs and mounting threats have nudged them into the "critically endangered," "endangered" or "vulnerable" categories, leapfrogging over other groups of animals threatened with extinction.

"That makes corals the most threatened animals on Earth," said Greta Aeby, a coral disease expert with the University of Hawai'i's Hawai'i Institute of Marine Biology, based at O'ahu's Coconut Island. Corals, as a group, are followed closely by frogs and related amphibians, which have also been on steep decline in recent decades due to pollution, loss of habitat and climate change.

The team's report, released online yesterday by the journal Science, were presented at the International Coral Reef Symposium in Fort Lauderdale, where nearly 3,000 scientists and managers from 114 countries have congregated to learn about the latest scientific discoveries and figure out ways to save the world's reefs.

Coral reefs provide hiding places and habitat for a quarter of all marine life and are a major source of food for the poor and of tourist revenue in tropical countries.

Some of the threats are global, including elevated ocean temperatures that have stressed corals so much that they are "bleached" bone-white. A massive bleaching brought on by warmer waters in the 1998 El Niño resulted in a vast decline of the world's reefs.
Risk in Islands

A new system to predict coral bleaching indicates there is a risk of widespread bleaching in the Northwestern Hawaiian Islands in August, but little bleaching elsewhere during the northern hemisphere summer, the National Oceanic and Atmospheric Administration announced yesterday.

The Northwestern Hawaiian Islands are a chain of small islands and atolls northwest of Kaua'i.

"The ability to predict coral bleaching events and provide advance warning is critically important to sustaining healthy reefs," said Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force.

The new prediction system uses NOAA experimental sea surface temperature forecasts to develop maps of anticipated coral bleaching severity.
Reefs' importance

Kent Carpenter, director of the international union's Global Marine Species Assessment and lead author of the Science article on the threatened extinction of corals, emphasized the importance of coral reefs beyond their beauty to tourists.

"Corals make up the very framework of the coral reef ecosystem," said Aeby, one of the 38 scientists who collaborated on the study. If they disappear, she said, "we can expect to lose the fish and crabs and other critters that depend on these corals."

Loss of coral reefs could have a profound effect on more than 500 million poor subsistence fishermen in the tropics who rely on coral reef ecosystems to feed themselves and their families, said David Obura, a marine biologist and East Africa coordinator for the Coastal Oceans Research and Development in the Indian Ocean.

"People rely on coral reefs every day," said Obura, another study collaborator. "In places like the Indian Ocean," he said, "we need to work with fishermen and help people decide not to fish in a destructive way."

The decline in reef-building corals has been led by the loss of the two major branching corals in the Caribbean in recent decades. William F. Precht, manager of damage assessment and restoration for the Florida Keys National Marine Sanctuary, noted that 95 percent to 98 percent of the elkhorn and staghorn corals in the Keys and elsewhere in the region have been lost to disease, toppled by hurricanes or crowded out by thick mats of algae and bacteria.

Both of these species are also listed as "threatened" with extinction under the U.S. Endangered Species Act.

Advertiser staff writer David Waite and the Los Angeles Times contributed to this report.

Warning: One Third Of Reef-Building Corals On The Verge Of Extinction

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THE INDEPENDENT SCIENCE

Coral reefs face extinction

By Steve Connor, Science Editor

July 11, 2008

STERLING ZUMBRUNN/CONSERVATION INTERNATIONAL

A third of the world's coral species are threatened with extinction, according to an international study that revealed rapid and alarming deterioration in the state of coral reefs over the past 10 years.

Many will have disappeared by the end of the century unless global warming, pollution and over-fishing are curbed, warned scientists in the most damning and definitive assessment on tropical corals yet delivered.

Coral reefs, the only living structures that can be seen from space, are often compared with tropical rainforests for the diversity and wealth of wildlife and plants that live in and around them. Their loss could also threaten the 25 per cent of marine species that need them for survival, as well as endangering the livelihoods of the estimated 200 million people who rely on them either for food or as a source of income.

An international team of scientists found that 231 of the 704 reef-building corals the study was able to assess were in such a poor state that they had fallen into the three most-threatened categories of species as defined by the International Union for the Conservation of Nature (IUCN). Its Red List of species has seven categories. As of yesterday, the 231 coral species on the Red List have been formally classified as either "vulnerable", "endangered" or "critically endangered".

The 39 scientists from 14 countries also investigated the remaining 141 reef-building coral species but could not gather enough information on them to make an accurate assessment. But they believe many of these corals are also highly likely to be threatened with extinction.

What made the study even more urgent was scientists' ability to calculate what state the corals were in before 1998, when a significant rise in sea-surface temperatures was linked with a worldwide outbreak of coral "bleaching", when corals as far apart as the Caribbean and the Indian Ocean lost their colour because of heat stress.

The scientists found that only 13 species of reef-building corals before 1998 would have fallen into the three most-endangered categories. This means there has been an almost 20-fold increase in the threat to corals in a decade.

They cited rising sea temperatures, caused by global warming, pollution from such human activities as sewage and agricultural run-off, and over-fishing as the biggest threats. But they warn that all of these may be eclipsed by the threat of rising ocean acidity caused by increases in atmospheric carbon dioxide, which could eventually dissolve the calcium carbonate skeletons of reef-building corals.

Kent Carpenter of the Old Dominion University in Norfolk, Virginia, who directed the global coral assessment for the IUCN, said the threat to the corals is probably unprecedented in modern times. "The results of this study are very disconcerting," Dr Carpenter said. "When corals die off, so do the other plants and animals that depend on coral reefs for food and shelter, and this can lead to the collapse of entire ecosystems. If you are interested in biodiversity I would say this is one of the most alarming findings in terms of marine life."

The threat of the extinction of corals could match the mass extinction that wiped out almost half of the corals 65 million years ago, along with the dinosaurs, in a geological event known as the Cretaceous-Tertiary boundary, he said. "We know that conditions existed on Earth that allowed huge numbers of extinctions. These extinctions that existed in geological times could be mimicked by what is happening on Earth today.

“The sort of changes that we as humans are bringing about could essentially be the same sort of catastrophic event that caused the Cretaceous-Tertiary mass extinctions. That took a while. This is probably faster.”

The study is published in the journal Science and was released yesterday at the International Coral Reef Symposium in Fort Lauderdale, Florida. The scientists said corals are now rated second only to amphibians as the most threatened group of animals on Earth. “The proportion of corals threatened with extinction has increased dramatically in recent decades and exceeds most terrestrial groups,” they added. Roger McManus, vice president of marine programmes at Conservation International, said that if sea-surface temperatures continue to rise, causing more frequent episodes of coral bleaching, it will be increasingly difficult for corals to survive further environmental insults.

“These results show that as a group, reef-building corals are more at risk of extinction than all terrestrial groups, apart from amphibians, and are the most vulnerable to the effects of climate change,” Dr McManus added. “The loss of corals will have profound implications for millions of people who depend on coral reefs for their livelihoods.”

Julia Marton-Lefevre, director general of the IUCN, said: “We either reduce CO2 emissions now or many corals will be lost forever. Improving water quality, global education and the adequate funding of local conservation practices are also essential to protect the foundation of beautiful and valuable coral reef ecosystems.”

A Coral Catastrophe?

July 11, 2008

Bleached corals on coral reef on southern Great Barrier Reef in January 2002. Coral bleaching primarily affects reef building corals when conditions get too warm. Image © Science

A third of the world's reef-building coral species are vulnerable to extinction, researchers report this week in the journal Science. An international team of researchers surveyed over 700 species of coral around the world and found that over 230 of them should be

classified as "Critically Endangered," "Endangered," or "Vulnerable" to extinction. Coral reefs are threatened by environmental issues such as fishing operations and oil exploration -- but the largest threat to the reefs are climate change and carbon dioxide levels. Warmer water temperatures lead to a condition known as 'coral bleaching,' which results in white, dead coral skeletons where once there were thriving reef communities. Increased carbon dioxide levels acidify the ocean water, making it harder for corals to build their calcium-based skeletons. We'll talk with one of the authors of the report about the plight of corals, and whether anything can be done to turn back the tide. Teachers, find more information about using Science Friday as a classroom resource in the Kids' Connection.

Guests

Kent Carpenter
Director, Global Marine Species Assessment
Conservation International/ International Union for Conservation of Nature
Professor of Biological Sciences
Old Dominion University
Norfolk, Virginia

Related Links

- Coral Reef Alliance
- EPA - coral reef protection
- US Coral Reef Task Force
- Global Coral Assessment

Segment produced by: Flora Lichtman

NewScientist Environment

Giant vacuum cleaner leaves reefs thriving

Mark Schrope

July 11, 2008

It sounds like a harebrained idea from some whacky movie: Seaweed overgrowing the reefs? Why not just suck it up with a vacuum?

But a team in Hawaii is using a device dubbed the Super Sucker to do just that, and new results presented at the International Coral Reef Symposium in Fort Lauderdale, Florida, suggest it might work.

Super Sucker is a modified gold dredging system. Seaweed from reefs is sucked up and dumped onto mesh sorting tables on a barge, with live animals returned.

Around the globe, the explosive growth of invasive and native seaweed species is wreaking economic and ecological damage. The Super Sucker was developed as a potential solution to the problem, which is blamed on overexploitation of algae-grazing fish and pollution from fertilisers.

To create the Super Sucker, biologists modified a system designed for gold dredging. Seaweed from reefs is sucked up and dumped onto mesh sorting tables on a barge. Native organisms inadvertently vacuumed are removed and returned to the reef and the seaweed is eventually used by farmers as fertiliser.

Grazed clean?

Eric Conklin, a marine science advisor for the Nature Conservancy in Honolulu, Hawaii, US, and project leader says that the team has cleared some 8,000 kilograms of algae – mainly the invasive Gracilaria salicornia – from two 210-square-meter reef plots, leaving a control plot in between.

The researchers could only remove about 90% of the seaweed, so they expected that the algae would grow back, necessitating periodic cleaning. Instead, within weeks, the remaining seaweed was gone and two years later it has still not returned.

"I was flat-out amazed," says Conklin. The group's theory is that they removed enough material that herbivorous fish could finish the job.

Conklin says Super Sucker would have to be coupled with other efforts to manage all reef problems. Brian Lapointe, a macroalgae specialist at the Harbor Branch Oceanographic Institute in Fort Pierce, Florida, US, agrees. "It's great that they are doing this," he says, "but there needs to be several approaches.

TIME
IN PARTNERSHIP WITH CNN

Coral Reefs Face Extinction

By Bryan Walsh

July 11, 2008

You don't have to be a marine biologist to understand the importance of corals — just ask any diver. The tiny underwater creatures are the architects of the beautiful, electric-colored coral reefs that lie in shallow tropical waters around the world. Divers swarm to them not merely for their intrinsic beauty, but because the reefs play host to a wealth of biodiversity unlike anywhere else in the underwater world. Coral reefs are home to more than 25% of total marine species. Take out the corals, and there are no reefs — remove the reefs, and entire ecosystems collapse.

Unfortunately, that's exactly what appears to be happening around the world. According to a comprehensive survey by the Global Marine Species Assessment (GMSA) published Thursday in *Science,* one-third of the more than 700 species of reef-building corals are threatened with extinction. Compare that to a decade ago, when only 2% of corals were endangered. Using criteria established by the International Union for the Conservation of Nature — a group that publishes an annual Red List of threatened animals — that makes corals the most endangered species on the Earth. The assessment's results, presented at the annual International Coral Reef Symposium in Fort Lauderdale, come just a week after the National Oceanic and Atmospheric Administration (NOAA) announced that more than half of the coral reef ecosystems in U.S. territory are in fair or poor condition. "We're losing the coral in the coral reef," said William Platt, a coral reef expert with NOAA.

The causes of the coral's demise are manifold, but they all come back to one culprit: us. Overfishing — especially the kind that uses dynamite or poison to kill whole schools of fish — destroys the coral directly, while polluted runoff from agriculture simply chokes them. Development in booming coastal economies from the Caribbean to Southeast Asia further threaten the delicate reefs. Tourism — in the form of diving and snorkeling — can also cause damage. As with so many other endangered species around the

world, there doesn't seem to be enough space for healthy coral reefs and unchecked human development. "It's just a litany of bad actions," says Brian Huse, the executive director of the Coral Reef Alliance. "Over the past 35 to 50 years, we've lost 25% of our reefs worldwide. Put it altogether, and you can see why."

Disease plays a role as well, with whole coral colonies wiped out by sudden sickness. That rise in illness may be linked to warmer sea temperatures, which is caused by climate change. And it's global warming that poses the most serious threat to the survival of coral. Corals have a symbiotic relationship with a kind of algae that provide nutrients and energy through photosynthesis — not to mention the vivid colors we associate with coral reefs. When corals are stressed by rising temperatures, the algae are expelled by the coral, turning the reefs bone white. That's a "bleaching event," and bleached coral are left weakened and defenseless against disease. Increased carbon dioxide concentrations in the atmosphere also lead to more acidic seas, which impairs the ability of corals to form their skeletal reefs. (In acidic water, the reefs simply dissolve.) "Corals appear to be particularly sensitive to the buildup of CO2," says Kent Carpenter, the lead author of the *Science* study and the director of GMSA. "The corals will be the canary in the coal mine in terms of the effect climate change will have on our oceans."

In one way, protecting the coral is not that different from protecting any endangered species. First, we need to cut back on activities that ruin their habitat, the shallow waters close to our coast. Agricultural runoff — already responsible for the oceanic "dead zones" seen in the Gulf of Mexico and other heavily built up coasts — has to be curtailed, as does the senselessly destructive fishing practices that have us tossing dynamite or poison into the waters. One of the best strategies is to expand the range of territory protected by marine reserves — national parks of the deep. And here the Bush Administration — usually anything but environmental — deserves real credit. With a stroke of a pen in 2006, President George W. Bush created the Papahanaumokuakea Marine National Monument, a 140,000 sq. mi. protected area northwest of Hawaii. Larger than every other national park in the U.S. combined, the monument protects 10% of the shallow coral reef habitat in U.S. territory. These kind of reserves need to be expanded, to limit the influence of human activity on delicate corals.

But we could make the entire ocean into a marine park and still lose the coral, if we can't stop climate change. As temperatures rise in the ocean, bleaching events will become more and more common. According to a study published in *Science* late last year, if CO2 levels continue rising unabated, by 2100 coral could be utterly extinct. "If we can't contain the CO2 problem and enact strong coral reef conservation measures, we will lose them," says Carpenter. The depressing fate of the coral could be a reminder that climate change has the power to undo all the work of wildlife conservation over the past century — if we let it.

Scientists: Act now to save coral reefs

Seán Kinane

July 11, 2008

The International Coral Reef Symposium (ICRS) is a gathering of the world's coral reef scientists and managers that happens only once every four years. This year, the conference was in the United States for the first time since 1977. Three-thousand researchers convened in Ft. Lauderdale on Monday for the meeting that wrapped up today.

ICRS participant Kent Carpenter warned that up to a third of the world's coral species are in danger of extinction. Carpenter made that claim as lead author in a paper published Thursday in the journal Science.

"We have about 30 percent of species that we were able to assess fall into these extinction risk categories: either vulnerable, endangered or critically endangered. And the potential risk is because of the increased bleaching and disease events that have been occurring with more frequency lately. And this is associated with the rise in sea surface temperatures."

Carpenter described the 39 co-authors of the Science paper as "experts in coral reefs and extinction risks." He said that currently the coral species are just at risk of extinction, but that risk will increase if carbon dioxide emissions continue to rise, causing an increase in sea temperatures. High water temperature is one major cause of bleaching, where corals lose many of the one-celled photosynthetic algae that are normally abundant within coral tissues.

"If the bleaching and disease events occur with even greater frequency, then there's a very high probability that they will go extinct."

Carpenter is director of the Global Marine Species Assessment Initiative, part of Conservation International and the International Union for the Conservation of Nature. He said the loss of coral species will affect many other types of living things, including humans.

"Coral reefs harbor somewhere around 25 percent of all known marine biodiversity, so if the coral species go extinct, the coral ecosystem will cease to function as an ecosystem. And what will likely occur then is a cascade effect where many other

species will go extinct. This is, of course, very dire in terms of the loss of biodiversity. But it's even more striking to people, because hundreds of millions of people rely on coral reefs for their food and for their livelihood. We're talking not only about the loss of biodiversity, but also the potential economic impact to hundreds of millions of people."

Rich Aronson is president of the International Society for Reef Studies (ISRS), the group that sanctions the ICRS. (Full disclosure: this reporter is a former ISRS member.) Aronson is a marine scientist at Dauphin Island Sea Lab in Alabama. He said reef growth might not be able to keep up with rising sea levels.

Researchers have been concerned for years that increasing levels of carbon dioxide in the atmosphere will negatively affect coral reefs because of increased sea temperatures. In recent years the acidification of oceans due to increased CO2 has also become a concern and was major issue deliberated at the 2008 ICRS, according to Joanie Kleypas. Kleypas is a marine biologist and geologist with the Institute for the Study of Society and Environment at the National Center for Atmospheric Research in Colorado.

"The bulk of the studies add that the mounting evidence that acidification causes a slowdown in the growth of corals and in coralline algae. Both of these are important to building reef structure. … For first time there's evidence from the field that calcification rates in corals are declining."

Kleypas said that breakdown in the calcium carbonate structure of coral reefs caused by ocean acidification can only be slowed by a dramatic reduction in carbon dioxide emissions.

Steve Palumbi is a professor of marine ecology and evolution at Stanford University and is cautiously optimistic about the future of the world's coral reefs. (Full disclosure: As a master's student at the University of Hawaii, this reporter took classes with Palumbi.)

"Now there's nothing that we can do to save corals in the long term unless we get rid of our addiction to CO2. We need some sort of 12-step program where we return the world to environmental sobriety and we actually turn this ship around but it's going to take a century. How do we have corals at the end of that century? Maybe its by individual communities creating their own coral victory gardens in front of themselves that produces the reefs and reef communities that we have in the future."

Nancy Knowlton agrees that humans can opt to protect coral reefs from destruction. Knowlton is the Marine Science chair at the Smithsonian Institution's Museum of Natural History.

"Local protection really matters. Now, it's definitely the case that if we don't do something about greenhouse gas emissions, coral reefs are doomed. But in the meantime, protection buys us some incredibly valuable time. "
Photo by Seán Kinane

South Florida
BUSINESS JOURNAL

Saving a fragile economic cog will cost hundreds of millions

by Paul Brinkmann

July 11, 2008

A new law will prompt billions of dollars in public spending and raise water bills to end a long-standing pollution problem affecting Florida's coral reefs.

Ocean outfalls, or pipes, that discharge partially treated sewage water into the Atlantic Ocean will soon be a thing of the past, but the price will be steep. Broward County has estimated the transition will cost $400 million to $900 million over the next 18 years.

South Florida has six municipal treatment facilities - the Miami-Dade Central District, Miami-Dade North District, city of Hollywood, Broward County, Boca Raton and Delray Beach - that discharge treated wastewater to the ocean.

The 11th International Coral Reef Symposium, held July 7-11 in Fort Lauderdale, is helping focus attention on the importance of the reef ecosystem. The gathering of the world's leading ocean scientists happens once every four years.

Thaindian News

One third of reef-building corals threatened with extinction

July 11, 2008

Washington, July 11 (ANI): A new study has determined that a third of reef-building corals around the world are threatened with extinction.

The study is the first-ever comprehensive global assessment to determine the conservation status of coral reefs.

“The results of this study are very disconcerting,” stated Kent Carpenter, lead author of the Science article, GMSA Director, IUCN (International Union for Conservation of Nature) Species Programme.

Built over millions of years, coral reefs are home to more than 25 percent of marine species, making them the most biologically diverse of marine ecosystems.

Corals produce reefs in shallow tropical and sub-tropical seas and have been shown to be highly sensitive to changes in their environment.

“When corals die off, so do the other plants and animals that depend on coral reefs for food and shelter, and this can lead to the collapse of entire ecosystems,” he added.

Researchers identified the main threats to corals as climate change and localized stresses resulting from destructive fishing, declining water quality from pollution, and the degradation of coastal habitats.

Climate change causes rising water temperatures and more intense solar radiation, which lead to coral bleaching and disease often resulting in mass coral mortality. Shallow water corals have a symbiotic relationship with algae called zooxanthellae, which live in their soft tissues and provide the coral with essential nutrients and energy from photosynthesis and are the reason why corals have such beautiful colors. Coral bleaching is the result of a stress response, such as increased water temperatures, whereby the algae are expelled from the tissues, hence the term “bleaching.”

Corals that have been bleached are weaker and more prone to attack from disease.

According to scientists, increased coral disease also is linked to higher sea temperatures and an increase in run-off pollution and sediments from the land.

Researchers predict that ocean acidification will be another serious threat facing coral reefs.

As oceans absorb increasing amounts of carbon dioxide from the atmosphere, water acidity increases and pH decreases, severely impacting corals" ability to build their skeletons that form the foundation of reefs.

If rising sea surface temperatures continue to cause increased frequency of bleaching and disease events, many corals may not have enough time to replenish themselves and this could lead to extinctions.

"These results show that as a group, reef-building corals are more at risk of extinction than all terrestrial groups, apart from amphibians, and are the most vulnerable to the effects of climate change," said Roger McManus, CI''s vice president for marine programs.

"The loss of the corals will have profound implications for millions of people who depend on coral reefs for their livelihoods," he added. (ANI)

The Seoul Times

Coral Decline Hits Rich and Poor

Coral decline hits rich and poor.

The gradual disintegration of the world's coral reefs under climate change will have significant impacts on food supplies, international tourism, water quality, and the safety of coastal communities.

Marine researchers at the International Coral Research Symposium (ICRS) in Fort Lauderdale, Florida, this week are exploring the longer term consequences of widespread loss of corals due to global warming and ocean acidification.

Chair of the Climate Change session, Professor Ove Hoegh-Guldberg of the ARC Centre of Excellence for Coral Reef Studies and University of Queensland, says there is now convincing science coming through to indicate that reefs everywhere are in trouble.

"The evidence suggests reef systems are becoming more brittle, as a result of bleaching, disease and the effects of acidifying water — and this means we are likely to see more moonscape-like areas where reefs once used to be. This will be accompanied by a switch from the spectacularly colourful fish that people normally associate with reefs to much fewer and plainer ones."

The decline in reefs has importance for the 500 million humans, mainly in developing countries, who depend on coral reefs for food and/or their livelihoods, while tourism industries in both developed and developing countries are likely to suffer, he said.

"The loss of reefs will also expose coastal communities, already facing rising sea levels, to a greater risk from storm surges and tsunamis — as reefs currently provide a protective barrier against these," he says.

"This will be accompanied by murkier, less productive waters as water quality suffers."

Professor Hoegh-Guldberg says researchers have found evidence that the rate at which coral reefs have been deteriorating and disappearing has accelerated in the last five years. "For the past 30 years the loss has been between 1-2 percent of the world's coral per year. The latest data suggests the rate is now around 2 percent a year. This doesn't give us much time."

Recent evidence that sea levels are rising at nearly twice the rate predicted by the Intergovernmental Panel on Climate Change (IPCC) also poses a risk to coral reefs.

"Healthy corals can keep up with these sorts of sea level rises — but some reefs which are damaged or weakened may be at risk of 'drowning' — being thrust into depths where they can no longer get the light they need for photosynthesis. All this aside, however, sea level on its own is not a major factor at this point."

At the same time Prof. Hoegh-Guldberg says that emerging evidence indicates some corals have suffered a 20 percent reduction in their growth rates, which researchers consider to be due to the rising acidification of sea water making it harder for them to build their chalky skeletons. "This apparent drop in calcification is bound to be a real issue for discussion at the symposium," he says.

Most disturbing of all were recent claims by some atmospheric researchers that the level of C02 has been underestimated, and may be closer to 410 parts per million, than to the 385 estimated by the IPCC.

"If we continue on the pathway that we are on right now, we get to levels where you are looking at the total loss of reef structures worldwide. Under those conditions you just don't have corals — no corals, and you also lose 50% of the fish and other species that live in and around corals" he said.

"If we are already at 410ppm then we are facing a planetary emergency which should require urgent action to cap oil, gas and coal production worldwide immediately. We can't fool around with a situation that is rapidly spiraling out of control. We can't play with a situation that is so dangerous."

"You might say — well, that is big. Cap oil, gas and coal? But with no other solutions in front of us, then it would be foolhardy and unethical for us not to consider these urgent actions," he emphasized.

OrlandoSentinel.com

Reef relief: A plan to save our ecosystem

Ludmilla Lelis | Sentinel Staff Writer

July 12, 2008

BISCAYNE NATIONAL PARK - We nicknamed them "baby corals," several dozen pieces of boulder coral growing in neat rows under a dock on Biscayne Bay.

Some are no bigger than a fist. A few larger pieces had broken off a reef. But someday they could grow into a huge reef and be homes for fish and marine critters.

They are the insurance against the crisis predicted by Florida reef experts.

The nursery under the dock was a key stop on a recent boat trip to the national park. The park's treasure is the expanse of 4,000 coral patch reefs, home to fish, lobsters and other marine critters.

But the reefs are losing ground across the world. Reef fisheries are dwindling. The water is too polluted and getting warmer every year. That makes the coral lose color and change into bleached skeletons, becoming more vulnerable to disease.

Scientists and reef managers focus on finding the best-surviving coral and restoring it. Those were the key ideas this week for 3,000 people at the International Coral Reef Symposium in Fort Lauderdale.

A third of the world's corals are at risk of extinction. Their loss would doom the fisheries that depend on them, and the millions who depend on those fish.

Florida's coral reefs have not hit crisis stage. But they could soon, said the park's Richard Curry.

Under the Adams Key dock, and at three other nurseries in the park, Curry is growing the reef of the future. His program -- "captive breeding," he says -- is to rescue small pieces of boulder coral that got lopped off a bigger reef.

The pieces are epoxied onto small PVC pipes and lined up under the dock. Curry said that waiting for the corals to grow is like watching paint dry. In a year, the new layer may be no thicker than an orange peel.

The baby corals will sit for 15 years. By then, they should be ready for transplanting to rebuild, or replace, the big reef. And by then, Curry figures, they will be needed.

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Star Bulletin .com

Coral reef protection measures are needed in isle waters

July 12, 2008

THE ISSUE
A study has concluded that reef fish are disappearing from Hawaiian waters because of deterioration of coral reefs.

A report of degradation of the world's coral reefs was hardly new to aquatic biologists and conservationists trying to protect Hawaii's reef fish and ocean ecosystem. While Hawaii's reefs compare favorably with elsewhere in the Pacific, state legislation is needed to allow new penalties that are appropriate to the damage caused.

Coral reefs in the Northwestern Hawaiian Islands are isolated and pristine, according to Athline Clark, superintendent of the islands' Papahananaumokuakea Marine National Monument. However, Clark said, reefs off heavily populated areas of the main Hawaiian islands are more degraded.

Scientists attending the International Coral Reef Symposium this week in Fort Lauderdale, Fla., released a study concluding that reef fish are quickly disappearing from coral reefs in Hawaiian waters. While Hawaii's reefs are relatively healthy, federal fisheries ecologist Alan Friedlander told the Los Angeles Times that "we need to protect healthy reefs, because it's so much easier and safer to conserve now than it is to try to rebuild later."

Cognizant of that need, the Lingle administration proposed in this year's Legislature that the Department of Land and Natural Resources be allowed to impose a penalty of up to $5,000 per square meter of coral destroyed. The bill would have allowed the department to use discretion, reducing fines where damage was more inadvertent and the operator had tried to prevent it.

The proposal was approved by the House but jacked up in the Senate to increase the penalty to $10,000 per square meter of coral destroyed. The badly needed legislation died in joint conference near the end of the session.

The change caused the administration to oppose the bill it had initiated. The altered version would have reduced the administration's discretion and introduced "an inappropriate rationale into the process of determining fines for resource damage," Laura H. Thielen, the department's chairwoman, told legislators.

The Legislature and Lingle administration were able to come together on two other bills aimed at protecting the environment, and the governor has signed them into law. One allows fining people who steal or damage natural resources in state-owned forests and coastal areas. A second new law allows fines of up to $10,000 for violating laws aimed at protecting mostly private lands within forests and watersheds of conservation districts.

The success of those bills, which also were altered from the versions proposed by Thielen, shows that agreement can be reached when it comes to protecting Hawaii's environment. Legislative leaders and administration officials should come to terms on coral-reef protection before the session begins in January.

CDNN WORLD NEWS WORTH KNOWING TRAVEL SAFETY SCIENCE INDUSTRY ECO

Coral reefs face extinction, dive tourism primary cause of damage

by Bryan Walsh

July 12, 2008

MIAMI, Florida (12 July 2008) — You don't have to be a marine biologist to understand the importance of corals — just ask any diver.

The tiny underwater creatures are the architects of the beautiful, electric-colored coral reefs that lie in shallow tropical waters around the world.

Divers swarm to them not merely for their intrinsic beauty, but because the reefs play host to a wealth of biodiversity unlike anywhere else in the underwater world.

Coral reefs are home to more than 25% of total marine species. Take out the corals, and there are no reefs — remove the reefs, and entire ecosystems collapse.

Unfortunately, that's exactly what appears to be happening around the world.

According to a comprehensive survey by the Global Marine Species Assessment (GMSA) published Thursday in Science, one-third of the more than 700 species of reef-building corals are threatened with extinction.

A comprehensive survey by the Global Marine Species Assessment (GMSA) just published in Science cites tourism — in the form of scuba diving and snorkeling — as one of the primary causes of damage to coral reefs.

Compare that to a decade ago, when only 2% of corals were endangered.

Using criteria established by the International Union for the Conservation of Nature — a group that publishes an annual Red List of threatened animals — that makes corals the most endangered species on the Earth.

The assessment's results, presented at the annual International Coral Reef Symposium in Fort Lauderdale, come just a week after the National Oceanic and Atmospheric Administration (NOAA) announced that more than half of the coral reef ecosystems in

U.S. territory are in fair or poor condition. "We're losing the coral in the coral reef," said William Platt, a coral reef expert with NOAA.

The causes of the coral's demise are manifold, but they all come back to one culprit: us.

Overfishing — especially the kind that uses dynamite or poison to kill whole schools of fish — destroys the coral directly, while polluted runoff from agriculture simply chokes them.

Development in booming coastal economies from the Caribbean to Southeast Asia further threaten the delicate reefs.

Tourism — in the form of diving and snorkeling — can also cause damage.

As with so many other endangered species around the world, there doesn't seem to be enough space for healthy coral reefs and unchecked human development.

Disease plays a role as well, with whole coral colonies wiped out by sudden sickness.

That rise in illness may be linked to warmer sea temperatures, which is caused by climate change.

And it's global warming that poses the most serious threat to the survival of coral.

Corals have a symbiotic relationship with a kind of algae that provide nutrients and energy through photosynthesis — not to mention the vivid colors we associate with coral reefs.

When corals are stressed by rising temperatures, the algae are expelled by the coral, turning the reefs bone white.

That's a "bleaching event," and bleached coral are left weakened and defenseless against disease. Increased carbon dioxide concentrations in the atmosphere also lead to more acidic seas, which impairs the ability of corals to form their skeletal reefs. (In acidic water, the reefs simply dissolve.)

"Corals appear to be particularly sensitive to the buildup of CO2," says Kent Carpenter, the lead author of the Science study and the director of GMSA. "The corals will be the canary in the coal mine in terms of the effect climate change will have on our oceans."

In one way, protecting the coral is not that different from protecting any endangered species.

First, we need to cut back on activities that ruin their habitat, the shallow waters close to our coast.

Agricultural runoff — already responsible for the oceanic "dead zones" seen in the Gulf of Mexico and other heavily built up coasts — has to be curtailed, as does the senselessly destructive fishing practices that have us tossing dynamite or poison into the waters.

One of the best strategies is to expand the range of territory protected by marine reserves — national parks of the deep.

And here the Bush Administration — usually anything but environmental — deserves real credit. With a stroke of a pen in 2006, President George W. Bush created the Papahanaumokuakea Marine National Monument, a 140,000 sq. mi. protected area northwest of Hawaii.

Larger than every other national park in the U.S. combined, the monument protects 10% of the shallow coral reef habitat in U.S. territory.

These kind of reserves need to be expanded, to limit the influence of human activity on delicate corals.

But we could make the entire ocean into a marine park and still lose the coral, if we can't stop climate change.

As temperatures rise in the ocean, bleaching events will become more and more common.

According to a study published in Science late last year, if CO2 levels continue rising unabated, by 2100 coral could be utterly extinct. "If we can't contain the CO2 problem and enact strong coral reef conservation measures, we will lose them," says Carpenter.

The depressing fate of the coral could be a reminder that climate change has the power to undo all the work of wildlife conservation over the past century — if we let it.

Cuban Scientist Attends Symposium in Fort Lauderdale

By Oscar Corral, The Miami Herald

July 12, 2008

Jul. 12--Fabian Pina Amargos arrived in Fort Lauderdale from Havana earlier this week with hopes of networking with his colleagues to find solutions to some of the problems facing coral reefs around the world.

Instead, he wandered the cavernous exhibit halls at the Broward County Convention Center alone.

Pina is the only one of four Cuban scientists who focus on coral reef research who was allowed to attend the International Coral Reef Symposium in Fort Lauderdale this week, the largest gathering of scientists on the subject in the world. His three colleagues never received a response from the U.S. State Department regarding obtaining visas.

Pina's experience is the latest chapter in the bitter relationship between the United States and Cuba in which seemingly everything -- even the undersea world of coral, scuba and grouper -- is politicized.

CHALLENGES, REWARDS

In an interview Thursday, Pina talked about the state of coral reefs in Cuba and the challenges and rewards of pursuing a science career on the communist island. He also lamented that his colleagues couldn't make it to the symposium.

"There is a desire from the scientific community on both sides to do more exchanges," Pina said. "I'd like to see much more exchanges."

A state department spokeswoman explained that visa applications from Cuba often run into complications.

"Under the Patriot Act, visa applications from Cuba, which is a state sponsor of terrorism, are subject to special screening procedures, and it will generally mean they

take longer," said Heidi Bronke, a spokeswoman for the U.S. State Department Bureau of Western Hemisphere Affairs.

For Pina -- who spends much of his time underwater at the Jardines de la Reina marine preserve on the south coast of Cuba measuring the size of grouper, snapper and other fish to determine reef health -- the conference was an awe-inspiring event. Three thousand of the best-known coral reef scientists from around the world came to compare notes, rub elbows and catch up on the latest issues affecting corals worldwide.

Pina explains that along the Jardines de la Reina, a reef about 65 miles long, fish are thriving unlike any other place in the Caribbean, including the world-famous barrier reef off the coast of Belize.

But Cuba's reefs have also been affected by many of the same problems that have hit Florida's reefs hard: hurricanes, disease and bleaching. One study by a colleague of Pina who didn't make it on the trip, Pedro Alcolado, shows the condition of a reef in another area south of Cuba called the Gulf of Batabano has deteriorated the past six years because of excessive hurricane activity, which Alcolado blamed on global warming.

"Live coral cover losses varied from zero to 21 percent," said the report, which was displayed at the Broward Convention Center. "Thus it is crucial that we act precautionarily to curtail the deleterious effects of global warming as soon as possible."

TRAVEL DIFFICULTIES

Pina's trip to the conference was sponsored by the Ocean Research and Education Foundation, which is run by University of Miami Professor Robert Ginsburg. Ginsburg and several colleagues have traveled to Cuba to study coral reefs, but Ginsburg said it has become much more difficult in recent years.

He explained that the importance of partnering with Cuba on coral reef research is the issue of interconnectedness, which means that coral reefs around the world are all tied together and connected by a living sea.

"Issues that affect reefs in Florida might affect parts of Cuba first because of the direction of the Gulf Stream current, which flows north," Ginsburg said. "It's in our interest to share information and conduct research of our reefs together."

It isn't always easy for Pina and his colleagues to conduct research in Cuba because funding and resources tend to be scarce. But he thinks that has made him a better scientist because it forces him to conserve, innovate and be resourceful. He says he and his colleagues often scrape by with only their meager funding from the Cuban government. But they sometimes receive grants from non-governmental organizations such as the United Nations or the World Wildlife Fund.

He declined to discuss his pay, saying only that he earned enough to make ends meet for his family, but not necessarily for luxuries such as cars and foreign vacations.

Pina, who grew up in Ciego de Avila and is married with a 4-year-old daughter, never strays far from the ocean. He remembers his own youth on the water.

"Since I was a kid, I've been fascinated by fish and the ocean," he said. "When we'd go to the beach, I would tell my dad that I wouldn't get out of the water until my palms were wrinkled. Of course, the palms don't wrinkle, the fingers do."

"Any day, I'd rather be in shorts, snorkeling or diving and counting fish or measuring corals. That's what I love to do."

THE FIJI TIMES

Pacific's reefs bounce back

July 12, 2008

Tim Keeney

Coral reefs in the islands of the Pacific have been granted a clean bill of health in Fort Lauderdale, Florida, where leading marine scientists have been meeting since Monday as part of the 11th International Coral Reef Symposium.

Director of the University of the South Pacific's Institute of Marine Studies Dr Ken Mackay reported data shows that corals that had suffered severe bleaching had recovered.

"It's been good news all around," Dr Mackay told islandsbusiness.com

"Our monitors around the islands of the Pacific are all reporting recovery from the bleaching coral suffered in 2000 and 2002 to 2004."

Coral recovery has been nothing short of spectacular in some areas, the university marine biologist told the international symposium.

Some corals on Beqa Island, in Fiji, for example, suffered 80 per cent bleaching in 2000, with some species inflicted 100 per cent.

"Bleaching in Beqa actually spurred the formation of the network to monitor the health of coral reefs not only around Fiji but in islands around the Pacific as well," Dr Mackay said.

"Our data for 2007 shows that coral cover is as good as before coral bleaching struck. "In some areas, corals are much more diverse than pre-bleaching time."

Resilience in coral reefs in the Pacific is being widely discussed during the five day conference inside the sprawling Greater Fort Lauderdale-Boward County Convention Centre on Eisenhower Boulevard.

Scientists are keen to see the lessons learnt, especially as coral reefs that were stricken with bleaching in the Caribbean have yet to undergo similar recovery as seen in the Pacific.

The consensus seems to suggest that healthy corals recover much more quickly. Signs of coral reef recovery, Dr Mackay said in his report, had been seen in Samoa, proof that the system had recovered from the effects of a cyclone it suffered three to four years ago.

"The impact of the tsunami on corals in the Solomon Islands is still to be known and we will need to continue monitoring there.

"For Tuvalu, monitoring for now is limited to the lagoons of Funafuti and figures are suggesting a somewhat reduced coral cover. This can be attributed we suspect to land degradation in the country's capital."

That the coral reefs in Fiji and around the islands of the Pacific seemed to be healthy took Dr Mackay and his team of monitors by surprise.

"With some incidence of coral bleaching reported in 2002 and again in 2004, we were actually bracing to see more cases of bleaching this year," Dr Mackay said.

"But this has not happened and I suspect that this could be the result of the two cyclones that came to Fiji in 2007."

Dr Mackay was accompanied to the international coral reef symposium by his colleagues Edward Lovell, Isoa Korovulavula, Patrick Fong and Zaidy Khan.

Through sponsorship from the Washington DC-based marine conservation NGO Seaweb, two Pacific journalists Titi Gabi of Papua New Guinea and Samisoni Pareti of Fiji-based Islands Business magazine were among a group of 16 invited from around the world to provide coverage of the five-day gathering that ends in this sea-side holiday city on Friday

Among the group was Pulitzer Prize winner, Ken Weiss of the Los Angeles Times, Tim Radford of the Guardian in London, Steve Conover of The Independent in London as well and Corriene Podger of Australia's ABC.

Tuvalu News TIDC

Pacific's reefs bouncing back?

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Source: PacNews

LAS VEGAS SUN

SUN EDITORIAL:

Deteriorating coral reefs

Humans must better preserve underwater wonders from further destruction

July 12, 2008

Among nature's most beautiful creations are coral reefs, underwater marvels that boast as colorful an array of species as can be found anywhere. They are also among the world's most fragile ecosystems, which is why they demand extra attention from human caretakers.

For various reasons, though, half of the coral reefs under this nation's jurisdiction are in poor or fair condition, the National Oceanic and Atmospheric Administration reported Monday. Conditions have deteriorated to the point where two species, elkhorn and staghorn corals, are listed as threatened under the Endangered Species Act. They are the first corals ever to be listed.

There is plenty of blame to go around, much of it centered around human activity. With coastal development, fishing, recreation and global warming, coral reefs are taking a beating.

If ever an environmental issue cried out for a public service campaign, it is saving coral reefs. This would admittedly be a tough sell because it is difficult to break humans of bad habits such as producing too much pollution, harvesting too many fish or building too many coastal developments.

But it is also in the vested interest of businesses and chambers of commerce that rely on the reefs for tourism and other commercial activity to inform customers of the urgent need to preserve underwater habitat. The business community could do this by upgrading its Web sites, disseminating brochures, educating youngsters and participating in forums with scientists to find ways to save corals from further destruction.

Robbing the world's oceans and seas of their vibrant coral reefs would amount to a horrific environmental crime. They deserve better human stewardship. Shame on us if we do not do more to protect them.

Is it all over for corals?

by Peter Etnoyer

July 12, 2008

Photo by Dr. William Precht.

A recent study published in Science Express by Dr. Kent Carpenter of Old Dominion University and a consortium of nearly thirty coral reef ecologists has determined that one-third of coral face increased extinction threat due to climate change and local anthropogenic influences. Carpenter refers to the current problem as "the human meteor"; in reference to the meteor impacts that helped send the dinosaurs hurtling

towards extinction at the end of the Cretaceous Era. At that time, one third of extant coral species went extinct along with dinosaurs.

Online colleague and co-blogger Jennifer Jacquet at Shifting Baselines has a nice summary of this and other dire tales coming out of the 11th International Coral Reef Symposium held in Ft Lauderdale, Florida last week. Ed Yong at Not Exactly Rocket Science also has an insightful summary of Carpenter's analysis and its implications. Below, I go on at length about other implications of the Carpenter study, particularly in relation to some other talks held at the conference last week.

I stood in the room as Dr. Carpenter announced the results yesterday afternoon. He made some very interesting points in response to his commenters, so I will use the opportunity of this occasion (our 1000th post at ScienceBlogs!) to highlight some implications of the study that may not be evident in the article itself. For example, commenters asked whether Carpenter's group is predicting global species extinction or localized expatriations, and whether the plight of the corals is more akin to the buffalo, whose numbers declined steeply, yet survived extinction thanks to human intervention, or whether the plight of corals is more akin to the dodo, which is truly extinct. We might also ask will corals migrate north, or retreat to deeper waters like the coelacanth?

Reef building corals thrive in warm, oligotrophic waters, so northward migration may not be a simple solution due to a number of factors, including riverine inputs. According to the "naked coral hypothesis", corals might even survive in a decalcified state, or diverge and adapt. Either way, on human time scales, we lose diversity. The problem is, our reefs are changing rapidly. The most dramatic reef builder in the Caribbean, elkhorn coral Acropora palmata, is already endangered; but in some places, like Jamaica, there is hope. Another reef builder, staghorn coral Acropora cervicornis is in the midst of recovery (see photo above).

At the conference, Dr. Carpenter stated he feels the plight of corals is most akin to the plight of the buffalo. Corals can be saved by human intervention. He pointed out that his team evaluated "extinction risk", which is not the same as "population status", and while this new union of concerned scientists cannot say these coral species are absolutely going extinct, they can say that coral reef habitat is in serious decline. Carpenter added that the metrics of the study were highly conservative, not to risk a poor interpretation. For instance, ocean acidification was not considered as an extinction threat, though many believe it to be true, because the problem is not yet clearly defined. But Carpenter also stated that 200 coral species were identified as "vulnerable", and that if their status were to tip towards "endangered", nearly 60% of coral species would face extinction. This is a sobering thought to any scuba diver. Grow up quick my children, or you might miss the sight of these reefs altogether.

The reasons why coral reef degradation is happening all around were evident in many of the 1000 coral presentations at ICRS from reef researchers from all over the world. If I were to list the Top 5 problems facing coral reefs in order of scientific consensus, I would dare say that fishing is the number one problem, because target species are

broad, ranging from large predators like sharks and groupers to important herbivores like surgeonfish, tangs, damselfish, and wrasses. Even the corals themselves are fished for the aquarium trade. The idea of a healthy reef is changing even now. Line Islands is remote island chain naturally protected from fishermen, for example. Here, the sharks rule, and reef fish populations are depressed by predation. See National Geographic for a summary of Enric Sala's hypothesis of an "inverted pyramid" where greatest biomass is found at the top of the food chain.

The remainder of the Top 5 reef problems by consensus could be argued between nitrification and water quality degradation caused by nearshore run-off, increased severity and rates of disease and infection in invertebrates, perhaps brought on by global warming, and finally ocean acidification due to extreme concentrations of carbon dioxide in the global industrial atmosphere. I may have missed a few common insults to coral reefs here, but you can remind me in the comments.

So, is it all over for corals? Are they the canaries in the ocean's coal mine? Should we wave bye-bye to corals forever? You may know what I am going to say. What about the deep-sea corals, like the stylasterids and cup corals? What about the gorgonians? These are corals too!

Cup corals must be safe in 3000-6000 m of water, but these are not reef builders. Lophelia pertusa ranges from 300-1000 m in the Gulf of Mexico. The species is definitely an ecosystem engineer, though, and forms extensive reefs. But she's been hard hit by oil exploration and development in the GoMx, and by bottom trawlers in the North Atlantic. So, Lophelia is facing increased extinction risk. Gorgonian corals were excluded from this analysis. Yet, bamboo corals and precious corals are threatened by harvest for the jewelry trade. Primnoa spp. and bubblegum corals are regularly trawled over. So it seems almost all the foundation species are in trouble in one way or another, no matter how deep you go. Carpenter noted that the Global Marine Species Assessment will include new groups in the future, particularly the echinoderms. I'm crossing my fingers that gorgonians get their moment in the sunshine sometime soon.

Let me tell you that octocorals got a very BAD RAP at this here ICRS meeting. Apparently, Xenia spp. invaded some coral reefs in Malaysia and biologists are quite upset about it. Soft corals were trotted out more than once as a "degraded state", an "alternative stable state" or an "intermittent reef state". Frankly, the soft corals were slapped in the face like an old man in need of Viagra. So, let me be the first to say "gorgonians are not soft corals". They have a rigid axis, OK? And they can be huge, like 1 m tall and more.

Consider this especially in the context of stoloniferous modes of reproduction and the invasive species problem. Zoanthids and corallimorphs are soft corals, but I challenge any coral taxonomist to tell me that antipatharians (black corals) are soft. So let's get this straight people, gorgonians are octocorals, and antipatharians are zoantharians, but they are not soft corals. Not even the old ones.

At this writing, I move to reinstate the Order Gorgonacea, regardless of what the genes say. Its just not safe to hang with Alcyonacea anymore! If you're with me say "Aye". All aboard? OK, then. Wow. I love open access taxonomy.

At this point, you may be asking yourself, "is there any GOOD NEWS from the 11th ICRS"? The answer is "YES, there is GOOD NEWS". For example, there is a growing consensus that some coral reef fish disperse long distances. Scott Hamilton from UC Santa Barbara demonstrated these fish are generally in better condition than local recruits, so upstream reefs can be expected to help "re-seed" down stream reefs in a marine protected area network. They may also disperse around islands, but most will not disperse across 50km of open water between islands, says Dr. Steve Palumbi. On the flip side, lionfish are reef fish, but these are dispersing long enough distances along the North Atlantic coast now to be called an invasive species. Octocorals feel for you, lionfish. You just can't please everybody all of the time.

Perhaps the best news from ICRS was the discovery and documentation of large fields of Montastrea spp. growing in deep water (30-60 m) around Puerto Rico. This discovery was reported to the delight of many. It was even suggested by the session host Clive Wilkinson that these deep corals may aid in the recruitment and recovery of coral to degraded reefs. At least one instance of rapid recovery was reported over a ten year period following a disturbance on the island of Moorea, near Tahiti. Pulley Ridge is another deep reef system in the United States, located on the West Florida Shelf.

It is now safe to say that many deep reef systems are likely to occur in the Caribbean, and that these deep-reef sites may be healthier, somewhat sheltered reefs protected from surface water warming. However, this is not to say these deep-reefs are immune to fishing or disease. Nor are they likely they to exhibit the delicate diversity of warm, shallow coral reefs. The scientific consensus is that one third of shallow tropical coral species are clearly in trouble around the world. In my opinion, deep corals may be next to follow, unless we can get it together to do something now to stop bottom trawling and other destructive fishing practices.

Read more about Carpenter et al's new manuscript here at Science Express, and treat yourself to an insightful interview with interesting perspectives by top notch coral reef ecologist Dr. Richard Aronson at the SeaWeb outreach and education website. Special thanks to Dr. William Precht for the terriffic photo above of a Jamaican coral reef in recovery, from the Seaweb website.

INTER PRESS SERVICE
NEWS AGENCY
THE STORY UNDERNEATH

ENVIRONMENT: Cutting CO2 Could Save Dying Corals

By Stephen Leahy

July 12, 2008

FORT LAUDERDALE, U.S., Jul 12 (IPS) - The rapid decline of coral reefs around the world offers a potent warning that entire ecosystems can collapse due to human activities, although there is hope for reefs if immediate action is taken, coral experts agreed at the conclusion of a five-day international meeting Friday.

"Reefs are in serious trouble, but don't write them off," Terry Hughes, a marine ecologist at Australia's James Cook University told 3,000 scientists, conservationists and policy makers attending at the 11th International Coral Reef Symposium (ICRS) in Fort Lauderdale, Florida.

"We can save reefs if we take immediate action," Hughes said.

More than 20 percent of the world's reefs have died, and large areas are failing due to a combination of climate change, overfishing, pollution and sea level rise. Most of the fabulous corals that attract tourists to the Caribbean are gone and half of remaining reefs in the U.S. are in serious decline.

In 1998, a massive coral bleaching due to warm ocean temperatures linked to global warming killed 95 percent of reefs in large parts of the Indian ocean, in 2002 60 percent of the Australia's Great Barrier Reef bleached, in 2005 it was the Caribbean that suffered a 50 to 90 percent loss because water temperatures were too high for too long, reported David Souter, coordinator of the Global Coral Reef Monitoring Network located at the Australian Institute of Marine Science.

And those corals that don't die outright are often afflicted by disease in the following years, Souter told the symposium.

"Corals in American Samoa are bleaching every summer and are very close to death," says Douglas Fenner, a biologist at Marine and Wildlife Resources, American Samoa.

The reefs he is studying are in small isolated pools where the water warms 2 degrees C more than the average.

"This is our window into the future 30 to 100 years from now," Fenner told IPS.

Climate change will warm the oceans by at least 1.5 degrees C and possibly far more in the coming decades and based on Fenner's studies of these warm pools, corals will grow much more slowly, reproduce poorly and are unlikely to survive in the long term.

It gets worse when ocean acidification, another product of climate change, is factored in.

Lab experiments where seawater acidity is increased to the levels expected in 2020 and 2060 uniformly show several important species of algae that helps glue reefs together do not grow well and their death rate increased under those high acid scenarios, said Guillermo Dias- Pulido of Australia's University of Queensland.

"We may be facing ocean deserts in the future," Dias-Pulido said in an interview, adding that he has only studied a few species and there are at least 650 species on the Great Barrier Reef, and some may prove to be resilient.

Researchers have found another window into the perilous future in the form of an undersea vent that releases high levels of carbon dioxide in the Mediterranean Sea. Carbon dioxide makes seawater acidic in direct proportion -- more CO2, the more acidic. Maoz Fine of Bar-Ilan University in Ramat-Gan, Israel said he could easily see the rapid decline and then complete absence of coral near the vent as the acidity levels increased, corroborating Dias-Pulido's lab research.

Fine cautioned that the levels of acidity near the vent are higher than what is expected in the oceans, but the combination of higher water temperatures and acidity is likely to be lethal well before the end of this century, he told IPS.

Increasingly warm and sour seawater is now inevitable, but how warm and how sour the oceans become is up humanity, said Simon Donner, an ecologist and climatologist at University of British Columbia. If emissions of fossil fuels can slow and eventually reverse, there is hope for corals.

The world's fossil fuel economy is like the Titanic -- we know its going to hit an iceberg but it takes a very long time to stop a really big ship Donner told IPS. "If we can reduce other threats to reefs and keep them healthy, that's like reducing the size of the iceberg," he said.

Souter of the Global Coral Reef Monitoring Network says there is very good evidence to support Donner. Reefs that suffered bleaching but are remote and do not have other stress factors like pollution or overfishing show a good rate of recovery.

Two years ago, one-third of the 2,000-km Great Barrier Reef was closed to all fishing. In just that short time, a key species called coral trout has increased 30 to 75 percent, an example of reef's ability to bounce back when properly protected, Souter said.

Astonishingly, fishing is allowed in almost all marine protected areas, parks and sanctuaries in the world. The opposite is true for parks on land, where hunting is rarely allowed.

Reefs around remote pacific atolls where there is no fishing are doing remarkably well despite warmer sea temperatures, said Nancy Knowlton of the Smithsonian Natural History Museum in Washington.

"There are lots of huge fish, lots of corals and little signs of disease," Knowlton told IPS.

That abundance what once the normal state on all reefs, and it shows that healthy reefs can better withstand the impact of climate change. There are other places in the world where reefs are doing well, such as islands of Palau in the Pacific and Bonaire in the Caribbean, but that's because local people take pride in their reefs and protect them, she said.

While the global threat of climate change to oceans appears overwhelming, reducing CO2 levels in the atmosphere will automatically reduce ocean acidity, said Joan Kleypas of the National Centre for Atmospheric Research in Boulder Colorado.

"It's like a volume slider -- dial down the CO2 level and the volume of ocean acidity follows," Kleypas said in an interview.

Change is in the air and people, especially the younger generation, recognise the crisis we are facing and they are willing to step and do what it takes to solve these problems, she said.

That change will have to come quickly, over the next eight years, reckons Ove Hoegh-Guldberg, a scientist at the Centre for Marine Studies at the University of Queensland, Australia.

"We can't exceed 450 ppm (parts per million) of atmospheric CO2," Hoegh-Guldberg. Current CO2 levels are 384 ppm, compared to the pre- industrial norm of 280.

Reducing emissions to save corals will likely prevent the collapse of other important ecosystems which sustain life on the planet and pull humanity back from the brink, he said.

"The coral reef crisis is really a crisis of governance," Hughes concluded.

"The planet will never be like it was in the year 2000, or 1900 for that matter," he said. "We need to look forward and see where we want to go and start moving in that direction."

(END/2008)

Reef Relief: A Plan to Save Our Ecosystem

By Ludmilla Lelis, The Orlando Sentinel

July 12, 2008

We nicknamed them "baby corals," several dozen pieces of boulder coral growing in neat rows under a dock on Biscayne Bay.

Some are no bigger than a fist. A few larger pieces had broken off a reef. But someday they could grow into a huge reef and be homes for fish and marine critters.

They are the insurance against the crisis predicted by Florida reef experts.

The nursery under the dock was a key stop on a recent boat trip to the national park. The park's treasure is the expanse of 4,000 coral patch reefs, home to fish, lobsters and other marine critters.

But the reefs are losing ground across the world. Reef fisheries are dwindling. The water is too polluted and getting warmer every year. That makes the coral lose color and change into bleached skeletons, becoming more vulnerable to disease.

Scientists and reef managers focus on finding the best-surviving coral and restoring it. Those were the key ideas this week for 3,000 people at the International Coral Reef Symposium in Fort Lauderdale.

A third of the world's corals are at risk of extinction. Their loss would doom the fisheries that depend on them, and the millions who depend on those fish.

Florida's coral reefs have not hit crisis stage. But they could soon, said the park's Richard Curry.

Under the Adams Key dock, and at three other nurseries in the park, Curry is growing the reef of the future. His program -- "captive breeding," he says -- is to rescue small pieces of boulder coral that got lopped off a bigger reef.

The pieces are epoxied onto small PVC pipes and lined up under the dock. Curry said that waiting for the corals to grow is like watching paint dry. In a year, the new layer may be no thicker than an orange peel.

The baby corals will sit for 15 years. By then, they should be ready for transplanting to rebuild, or replace, the big reef. And by then, Curry figures, they will be needed.

Ludmilla Lelis can be reached at 386-253-0964 or llelis@orlandosentinel.com.

Source: The Orlando Sentinel

Medal win for Australian coral reef scientist

July 13, 2008

The International Society for Reef Studies has awarded the prestigious Darwin Medal for contributions to the biological sciences to an Australian coral reef scientist.

Medal winner Professor Terry Hughes is the director of the Centre of Excellence for Coral Reef Studies at James Cook University in Queensland.

Professor Hughes won the medal for work on understanding the impact of climate change, pollution and bleaching on coral reefs.

Speaking at the International Coral Reef Symposium underway in Florida, Professor Hughes says reefs are a vital global resource for nearly half a billion people.

"Of course reefs are important for their aesthetic value, they're incredibly beautiful, but reefs are critically important economically and socially, particularly to developing countries. About 400 million people around the world depend for their livelihood on reefs," he said.

"So the issues of things like food security, the importance of reefs for sustainable development into the future - we need to protect them for all those reasons, not just for their conservation value."

ST. LOUIS POST-DISPATCH

Corals 'most threatened animals on Earth'

By Kenneth R. Weiss, *Los Angeles Times*

July 13, 2008

FORT LAUDERDALE, Fla. — Nearly one-third of the small animals that build the most massive and elaborate structures in coral reefs face elevated risk of extinction from global warming and various local problems, an international group of scientists reported last week.

The worldwide assessment of more than 700 species of corals showed that 32.8 percent are threatened with extinction, especially those that form large mounds or intricate branches resembling antlers.

Coral reefs provide hiding places and habitat for a quarter of all marine life and are a major source of food for the poor and of tourist revenue in tropical countries.

Some of the threats are global, including elevated ocean temperatures that have stressed corals so much that they are "bleached" bone-white. A massive bleaching brought on by warmer waters in the 1998 El Nino resulted in a vast decline of the world's reefs.

Corals also face excessive and destructive fishing and polluted runoff that buries them under sediment or bathes them in nutrients that fuel out-of-control growth of algae and bacteria. Compounding the problem are various diseases that kill corals when they are under stress.

Using criteria established by the International Union for the Conservation of Nature, the team of scientists determined that loss of reefs and mounting threats have nudged them into the "critically endangered," "endangered" or "vulnerable" categories, leapfrogging over other groups of animals threatened with extinction.

"That makes corals the most threatened animals on Earth," said Greta Aeby, a coral disease expert with the Hawaii Institute of Marine Biology.

The results, released online Thursday by the journal Science, were presented at the International Coral Reef Symposium in Fort Lauderdale, where nearly 3,000 scientists and managers congregated.

ABC News

Australian researcher wins Darwin Medal

July 13, 2008

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Darwin Medal ... 'reefs are critically important economically and socially' (AFP: File photo)

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STLtoday.com

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FORT LAUDERDALE, Fla. — Nearly one-third of the small animals that build the most massive and elaborate structures in coral reefs face elevated risk of extinction from global warming and various local problems, an international group of scientists reported last week.

The worldwide assessment of more than 700 species of corals showed that 32.8 percent are threatened with extinction, especially those that form large mounds or intricate branches resembling antlers.

Coral reefs provide hiding places and habitat for a quarter of all marine life and are a major source of food for the poor and of tourist revenue in tropical countries.

Some of the threats are global, including elevated ocean temperatures that have stressed corals so much that they are "bleached" bone-white. A massive bleaching brought on by warmer waters in the 1998 El Nino resulted in a vast decline of the world's reefs.

Corals also face excessive and destructive fishing and polluted runoff that buries them under sediment or bathes them in nutrients that fuel out-of-control growth of algae and bacteria. Compounding the problem are various diseases that kill corals when they are under stress.

Using criteria established by the International Union for the Conservation of Nature, the team of scientists determined that loss of reefs and mounting threats have nudged them into the "critically endangered," "endangered" or "vulnerable" categories, leapfrogging over other groups of animals threatened with extinction.

"That makes corals the most threatened animals on Earth," said Greta Aeby, a coral disease expert with the Hawaii Institute of Marine Biology.

The results, released online Thursday by the journal Science, were presented at the International Coral Reef Symposium in Fort Lauderdale, where nearly 3,000 scientists and managers congregated.

courier-journal.com
LOUISVILLE, KENTUCKY • SOUTHERN INDIANA

Too precious to wear?

Sea lovers embrace alternatives to coral

By Samantha Critchell • Associated Press

July 13, 2008

Sea coral is blessed with wonderful colors, an intricate design and memories of the lapping ocean. It's no wonder that the worlds of fashion and home decor are in a love affair with it.

Some argue, though, that coral is too precious to wear.

"We want to discourage consumers from purchasing coral," says scientist Andrew Baker. "It's like ivory. It's a product of a living animal, and the harvest of this item is unsustainable."

It's unsustainable not because new coral won't grow, he says, but because there are no limits on the use or sale of coral, and it's being harvested at a rate that nature can't keep up with.

"Dredging deep-sea coral forests is like clear-cutting the rain forest for sparrows: You're doing so much damage for something so small," says Baker, an assistant professor at the University of Miami and the Pew Institute for Ocean Science.

Baker and a team from the Too Precious to Wear campaign, helmed by the nonprofit group SeaWeb, are lobbying to add pink and red corals to the Convention of International Trade in Endangered Species, the global group that has put limits on rhinoceros horns, tiger feet and ivory. Coral had made it to the last round of negotiations in 2007, according to Baker, but failed to make it to the final list. (SeaWeb has also worked on issues involving caviar and restaurant seafood.)

Last week, the pressures corals are facing were discussed at the International Coral Reef Symposium, attended by more than 2,500 scientists, economists, conservationists and educators. The theme of the meeting was reefs for the future.

Baker doesn't want the world to wait. SeaWeb had noticed in the past couple of years that coral -- real, faux and artistic interpretations -- was all over the fashion runways and home-decorating magazines, explains Julia Robertson, program manager for Too Precious to Wear.

Around the same time, global warming, for which coral is considered a key indicator, had become a buzz topic, so marine-science groups saw an opportunity to raise public awareness, she says.

"We wanted to tap into the recognition of coral in fashion, design, jewelry and home decor. It's easier to talk to people when they know what you're talking about," Robertson says.

The campaign was launched earlier this year with partners, including Pottery Barn, Tiffany & Co., Lela Rose, Vena Cava and Chantecaille Beauté.

Sylvie Chantecaille says her beauty company got involved about 18 months ago, largely because of her interest in the ocean.

"My whole family snorkels, dives. I grew up in the South of France diving, and I have seen a change in the ocean over the years," she explains. "When you spend so much time under the water, you realize how amazing it is. I wanted to do something to protect it."

So Chantecaille developed Protect the Paradise compacts -- one with eye shadow, another with powder -- embossed with miniature ocean scenes to raise money for marine research and conservation. The project put Chantecaille in touch with other coral fans, including Baker, who taught her to appreciate their beauty from afar.

"I love the look of coral. They're so beautiful," Chantecaille says. "I used to be completely in love with coral jewelry, so I totally understand the appeal."

But, she adds, "It's going to become like ivory. I used to wear ivory, but I'd never wear it today now that I know what it means and what it symbolizes."

Tiffany stopped selling coral jewelry in 2003 and instead uses precious stones to replicate the exotic color and shapes found in the sea. The company brought the bulk of manufacturing in house, allowing it to examine sourcing, explains Linda Buckley, Tiffany vice president of public relations. While coral was not a huge part of the assortment, it set off some bells.

"Tiffany is closely associated with the natural world -- it's where we get our inspiration and materials," Buckley says. She adds: "If you have healthy coral reefs, you have healthy oceans, healthy seabeds and healthy oysters -- and we get our pearls from healthy oysters."

"No one disputes coral as an object of beauty," says Baker, "but it is more important as a habitat."

Corals from shallow reefs, which are mostly a light color, tend to be used in interior decor, while the deep-sea corals -- known as the "precious" black, pink and red corals from the Mediterranean Sea, Indian Ocean and the Pacific near Hawaii -- are used for jewelry.

Yet, you only have to go to South Florida, where Baker is based, to find white coral being sold as a souvenir in kitschy shell shops, even though it was harvested thousands of miles away. This frustrates Baker, and he thinks it probably confuses tourists, who are getting a mixed message not to disrupt the reefs when scuba-diving even though they're allowed to buy chunks of dead coral.

"It's like going to a zoo," he says. "You learn about threatened tigers and then go to the zoo store and find a tiger pelt."

The New Nation
Bangladesh's Independent News Source

Scientists discover new reefs teeming in Brazil

July 14, 2008

Scientists announced today the discovery of reef structures they believe doubles the size of the Southern Atlantic Ocean's largest and richest reef system, the Abrolhos Bank, off the southern coast of Brazil's Bahia state. The newly discovered area is also far more abundant in marine life than the previously known Abrolhos reef system, one of the world's most unique and important reefs.

Researchers from Conservation International (CI), Federal University of Espírito Santo and Federal University of Bahia announced their discovery in a paper presented today at the International Coral Reef Symposium in Fort Lauderdale. "We had some clues from local fishermen that other reefs existed, but not at the scale of what we discovered," says Rodrigo de Moura, Conservation International Brazil marine specialist and co-author of the paper. "It is very exciting and highly unusual to discover a reef structure this large and harboring such an abundance of fish," he adds.

The Abrolhos Bank is considered one of the world's most important reefs because it harbors a high number of marine species found only in Brazil including species of soft corals, mollusks and fish found only in the Abrolhos shelf.

The Mussismilia coral genus, a relic group remnant of an ancient coral fauna dating back to the Tertiary period that went extinct long ago elsewhere in the Atlantic, is the dominant coral of the Abrolhos reef, which is structured in unique mushroom-like shapes.

Researchers mapped the new reef structures in areas ranging from nine to 124 miles (15 to 200 km) off the coast and in depths ranging from 60 to 220 feet (20 to 73 meters) using a side scan sonar which produces a three-dimensional map of the marine seabed.

"Due to their relative inaccessibility and depth, the newly discovered reefs are teeming with life, in some places harboring 30 times the density of marine life than the known, shallower reefs," says Guilherme Dutra, Conservation International's director of marine programs in Brazil. "That's the good news. The bad news is that only a small percentage of marine habitats in the Abrolhos are protected, despite mounting localized and global threats."

Localized threats include over-fishing, coastal development and large scale land conversion to agriculture, shrimp farms, pollution, oil drilling and sedimentation. Global threats include climate change and ocean acidification.

Researchers acknowledged the conservation effectiveness of the present network of Marine Protected Areas in the Abrolhos. But it is very limited and not nearly enough vis-à-vis the mounting threats, they added.

The next phase of the Abrolhos project will be to study the marine life in the new reef structures.

"These studies reveal the complexity and connectivity of the reefs in the Abrolhos region and will support conservation planning," states Guilherme Dutra.

The studies are part of the Marine Management Area Science Program coordinated by CI with the participation of research institutions around the world, and supported by the Gordon and Betty Moore Foundation and individual donors.

(Source: International Coral Reef Symposium in Ft Lauderdale: Presentation on the new reef structures entitled "Mapping marine habitats in the largest reef area of the southern Atlantic")

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Coral Reefs Dying, Experts Say Recovery Possible

By Patricia McFadden

July 14, 2008

PRESERVES & NURSERIES: Coral reefs all around the world are dying, and coral reef experts issued an alarm based on their first-ever global study. Extinction threatens one-third of all coral reefs, but preservation is possible if we reduce greenhouse gas emissions, pollution and overfishing and set aside marine reserves.

© istockphoto.com/Edwin van Wier
Half the coral reefs in the United Sates and territories are in "fair" or "poor" condition, while one-third of the world's reefs are dying. Scientists predict complete extinction by 2050, but say there's still

More than 32% of the 700 species of coral are on the verge of extinction, according to a study presented at the International Coral Reef Symposium in Fort Lauderdale, Fla., and published in last week's issue of Science. Losing coral reefs means losing global biodiversity, not to mention devastating a way of life for more than 500 million impoverished, tropical fishermen who depend on the reefs to feed their families.

Humans Threaten Coral Reefs

Corals are tiny marine animals whose exoskeletons make up the great reefs, which take millions of years to form. They grow in tropical and subtropical waters just off shorelines. Coral reefs provide food and shelter to marine life, 25% of which depends on the reefs.

Coral's plight cannot be blamed on any one factor, but all the major causes of its calamity have the same source—humans:

* **Overfishing**—Destructive fishing practices, such as the use of explosives and bottom trawling, destroy coral reefs.
* **Agricultural runoff**—Chemicals from farming make their way down rivers and into coastal coral beds, poisoning the water.
* **Tourism—**Both building and dredging along coasts for resorts pollute ocean water. Careless divers and snorkelers damage coral.
* **Global warming—**Rising water temperatures disrupt the symbiotic relationship between coral and an algae that supplies critical nutrients, without which the coral turns white. As the water temperature warms, the coral discharge the needed algae. This "bleaching event" weakens coral and makes it vulnerable to disease. (Warming sea temperatures also harm fish.)
* **Ocean Acidification**—Carbon dioxide from greenhouse gas emissions acidifies the ocean water, making it inhospitable to coral (see sidebar).

Losing the reefs could be devastating not only to marine life, but to the people who rely on them.

"They [coral reefs] are important for food and important for other types of livelihoods," said Prof. Kent Carpenter of Old Dominion University in Virginia, who led the study. "So, if we lose the ecosystems, we lose not only the biodiversity, but we also lose the capability of people to obtain income and food from coral reefs." (Voice of America, 7/11/08)

Coral Survival Depends on Marine Reserves

Last week the National Oceanic and Atmospheric Administration released a report that said half of the coral reefs in U.S. territory are in "fair" or "poor" condition, including these:

* Guam
* Palau
* Puerto Rico
* U.S. Virgin Islands

But Carpenter and the 38 other marine biologists involved in the study say we can save many of the world's reefs. How?

* preserving reefs in marine reserves
* reducing greenhouse gas emissions

* restricting fishing until certain fish populations recover
* reducing ocean pollution

To work, however, Carpenter said we need to take the above steps now. Otherwise, we can expect the coral reefs to die completely in 40 years.

"If we do not do those things, then, at the current level of how things are going, we will probably lose our coral reefs by the middle of this century," Carpenter said. "So, 2050 is the date that many people are predicting that coral reefs will cease to exist." (Voice of America, 7/11/08)

DiveNews

Corals Not Doomed - If We Do the Right Thing

July 14, 2008

The world's coral reefs are not doomed - provided governments and communities take the urgent and necessary actions to preserve them.

That's the message from eminent Australian marine scientist and recipient of this year's Darwin Medal Professor Terry Hughes in his keynote address to the 11th International Coral Reef Symposium, being held at Fort Lauderdale, Florida, USA from June 7-11...

Prof. Hughes is the Director of the Australian Research Council Centre of Excellence for Coral Reef Studies, based at James Cook University, Townsville, Australia.

"The global coral reef crisis is really a crisis of governance. Many of the measures put in place are failing, not because of biology, but because of lack of support from local people and governments," he says.

"For example many no-take marine reserves have been set up round the world by non-government organisations – but nearly all of them are proving unsuccessful because they ignore the needs of the local population and have failed to win their backing."

Professor Hughes called on coral reef researchers worldwide to work harder at the societal and economic aspects of protecting the oceans and their living resources. Good biology alone is not enough. "The reefs are not doomed if we all do the right thing," he asserts.

On land, environmental science now accepts that people are a part of the ecosystem and that sustainable solutions have to include them and their needs. At sea, he warns, the tendency is still to try to solve the problem by excluding people entirely from marine resources.

"If you take the Coral Triangle bounded by Indonesia, Borneo and Papua New Guinea, there are around 200 million people who depend on it for their livelihoods. You cannot ignore the needs of these people in devising ways to protect their marine diversity."

Prof. Hughes argues that traditional conservation is backward-looking, often seeking to restore the pristine wilderness of yesterday. It treats people and nature as separate, and wishes that the world could be static. This is incompatible with the reality of a surging human population and its demand for protein, as well as the constant evolution and

change in natural systems.

“You cannot simply remove the needs of hundreds of millions of people from the equation. You have to design your conservation measures so that they also address things like ecosystem services which the ocean provides to humans, and sustainable livelihoods for people who depend on the sea, as well as protecting biodiversity.”

He says many no-take reserves were also poorly designed because they ignored the need to also look after the surround areas where fishing was still allowed. “These areas may be less species-rich than the protected zone, but they play a vital role in connecting protected areas together, and have to be managed in concert with them.”

Professor Hughes warns that the world is entering a transitional period in which humanity can choose whether to cross, or to avoid, tipping-points from which there is no recovery – at least within human time-spans.

“We need to adopt a forward-looking approach, to actively navigate to the "place" we want to be in terms of our environment, land and sea,” he says. “This means accepting that we have changed some things permanently, and that we can choose to manage a new state – or to allow the resource to continue to decline to point from which it may not recover.”

Such a tipping point may be evident in the coral reef systems of the Caribbean which largely collapsed and have now failed to recover, mainly because the corals can no longer regenerate fast enough to cope with overfishing, hurricanes and other impacts, he says. The reefs are overgrown with weed and the coral broodstock so reduced it cannot compensate for new impact losses.

At ICRS this year Professor Hughes will receive the International Society for Reef Studies’ highest honour, the Darwin Medal, for his outstanding contribution to marine and coral science and to the growing appreciation of the importance of the resilience of natural systems, a scientific view in which he was a leading player.

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Souce: Coral Reef Studies
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http://www.divenews.com/

innovations report
Forum für Wissenschaft, Industrie und Wirtschaft

New NOAA coral bleaching prediction system calls for low level of bleaching in Caribbean this year

More severe bleaching expected in the Northwestern Hawaiian Islands

July 14, 2008

A new NOAA coral bleaching prediction system indicates that there will be some bleaching in the Caribbean later this year, but the event will probably not be severe. NOAA issued the first-ever seasonal coral bleaching outlook this week at the 11th International Coral Reef Symposium in Ft. Lauderdale, Fla.

The system also suggests that there is a risk of widespread bleaching in the Northwestern Hawaiian Islands in August, but little bleaching elsewhere during the northern hemisphere summer.

"The ability to predict coral bleaching events and provide advance warning is critically important to sustaining healthy reefs," said Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force. "When coral reef managers and reef users are alerted, they can mobilize monitoring efforts, develop response strategies, and educate reef users and the public on coral bleaching and possible effects on reef resources."

The new prediction system uses NOAA experimental sea surface temperature forecasts to develop maps of anticipated coral bleaching severity during the upcoming bleaching season (August to October). While NOAA's Coral Reef Watch Program uses satellite sea surface temperature data to alert managers and scientists around the world of the risk of coral bleaching, the new prediction system includes longer range temperature forecasts up to three-months.

Coral bleaching is associated with a variety of stresses, especially increased ocean temperatures. This causes the coral to expel symbiotic micro-algae living in their tissues – algae that provide corals with food. Losing their algae leaves coral tissues devoid of color, and thus they appear bleached. Prolonged coral bleaching of over a week can lead to coral death and the loss of coral reef habitats for a range of marine life.

A major coral bleaching event occurred in the Caribbean in 2005, resulting in significant coral death in much of the region.

"As global temperatures continue to climb, predicting coral bleaching becomes even more critical," said C. Mark Eakin, Ph.D., coordinator of NOAA's Coral Reef Watch Program. "Our goal is to issue bleaching forecasts for coral reefs worldwide."

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A third of world's coral reefs face extinction

by Henrylito Tacio

July 14, 2008

*One third of the reef-building corals around the world are facing extinction, according to the first comprehensive global assessment to determine their conservation status. Contributing editor Henrylito Tacio reports from Florida***.**

Pink soft coral on reef. Photo © Chuck Savell

This finding, revealed at the recently concluded 11th International Coral Reef Symposium by the World Conservation Union (IUCN), also found that, next to frogs, coral reefs are the most threatened species on the planet.

"The results are very disconcerting," said Dr. Kent Carpenter, who headed the study. "When corals die off, so do the other plants and animals that depend for food and shelter, and this can lead to the collapse of entire ecosystems."

The global assessment is a collaborative effort of IUCN and the Conservation International (CI). Thirty-nine experts applied the IUCN Red List Categories and Criteria to determine the status of the species in the sea.

Profound implications

Corals reefs can be found in most parts of the world. But the diversity is far greater in the Indo-Pacific, particularly around Indonesia, the Philippines, and Papua New Guinea. Many other groups of marine fauna show similar patterns, with a much greater diversity in the Indo-Pacific region.

"The loss of the corals will have profound implications for millions of people who depend on coral reefs for their livelihoods," said Roger McManus, CI's vice president for marine programmes.

Coral reefs also generate millions of dollars in tourism and employment. According to the Washington-based World Resources Institute (WRI), the total economic value of

reefs in the Philippines is estimated at US$1.1 billion annually. In Indonesia, the reefs generate an annual income of US$1.6 billion.

Caribbean dangers

The IUCN/CI assessment considered staghorn (Acroporid) corals as having the "highest risk of extinction," with 52 per cent of species listed in a threatened category. Corals from the genera Favia and Porites were found to be "the least threatened" due to their relatively higher resistance to bleaching and disease.

The Caribbean region has been identified as having the highest number of "highly threatened corals (endangered and critically endangered). The high biodiversity of the Indo-Pacific region has "the highest proportions of vulnerable and near-threatened species." The growing populations living in these areas were cited as the culprit.

Henrylito Tacio has been reporting on the Coral Reef Symposium for this website. See his other reports on the Coasts and Oceans section of this website.

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New research points way to restore coral reefs

By Henrylito Tacio

July 14, 2008

Experts attending the 11th International Coral Reef Symposium in Florida, say that the reefs can be regenerated using the same methods as are used to restore tropical forests. Our contributing editor, Henrylito Tacio, reports from the Symposium in Florida.

Reforestation is the restocking of existing forests and woodlands which have been depleted. It also refers to afforestation, the process of restoring and recreating areas of woodlands or forest that once existed but were deforested or otherwise removed or destroyed at some point in the past.

In a similar way, degraded coral reef ecosystems can also be restored, using similar technique, says Dr. Baruch Rinkevich, a senior scientist with the Israel Oceanographic and Limnological Research.

Cup corals feeding. Photo © Chuck Savall

"Many of the world's coral reefs are experiencing a severe degradation," said Dr. Rinkevich. These ecologically-fragile marine wonders can be saved by using "branching corals" as "ecosystem engineering species."

In a press conference during the Symposium, the Israeli scientist talked about the so-called "gardening coral reefs concept," a method inspired from forest restoration guidelines.

The technique involves generating and farming large stocks of new coral colonies in a floating nursery which is far from predators and other disturbances. After one year or so, they are transplanted into degraded areas.

"In past efforts, we have taken coral colonies from healthy localities and transplanted them into denuded areas," Dr. Rinkevich said. "This method resulted in low survival rates and inflicted stress on donor coral colonies."

Transplanted colonies

In their study, they selected five denuded knolls somewhere in Eilat's Reef in Red Sea. "Eilat's coral reef is the world's most northern reef," said Yael Horoszowski, who did the study. "This reef, which was classified in the past among the richest and most biodiversed reefs, has been in decline for the past forty years."

In November 2005, they transplanted 550 nursery-grown colonies of two branching coral species. Three-hundred more colonies were transplanted in May 2007.

During the first two years of monitoring, they observed that few of these transplanted corals died. "We also found out that there was an increase of marine species like fish and crabs as we literally brought new 'homes' to them," said Horoszowski.

In Indonesia, Dr. Helen Fox is doing another method of restoring degraded reefs caused by destructive fishing with explosives (dynamite or homemade bombs). The work was done in Komodo National Park. Sustained by rushing currents where the Indian and Pacific Oceans meet, the park is home to a staggering marine biodiversity. To the north, coral reefs sparkle. To the south, manta rays and filter-feeding whales glide through choppy, nutrient-rich waters.

Rock piles

"Blast fishing causes widespread and devastating damage to coral reefs," said Dr. Fox. "Despite being illegal, blast fishing continues to be a threat to reefs in the national park."

In restoring the degraded reefs, Dr. Fox and her team used rock piles as "a low-tech, locally-available reef rehabilitation method." In 2002, they installed four different configurations of rock piles at four sites.

The team observed that the rock piles were able to stabilize the rubble caused by explosives. It also attenuated the water currents, recreated "the three-dimensional structure" of an intact reef, and provided surfaces for coral recruitment and refuges for other marine species.

Although these two methods are very successful in restoring degraded reefs, Dr. Fox reiterated that it is "cheaper and more efficient to prevent the damage in the first place."

Annual loss

Living coral reefs are the foundation for many marine species, including fish, crabs, oysters, and clams. They also provide extensive recreational and tourism opportunities.

Reef-building corals grow where the water is clear, warm, and shallow. These conditions occur in tropical waters near the equator, on the eastern sides of continents, and around oceanic islands.

In the United States, half the coral reefs are in trouble. According to the the World Conservation Union (IUCN), one third of the world's coral reefs are threatened with extinction.

For the last two decades, Indo-Pacific reefs have shrunk by 1 per cent each year – a loss equivalent to nearly 600 square miles (1,553 square kilometers). That makes the rate of reef loss about twice the rate of tropical rain forest loss.

"We have to do something now before we lose our coral reefs forever," urged Dr. Rinkevich. "Restoring them using the way tropical forests are rescued is a good start."

Read more reports on the 11th International Coral Reefs Symposium in the Coasts and Oceans section of this website.

SCIENCE CENTRIC

New prediction system calls for low level of coral bleaching in Caribbean this year

July 14, 2008

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The system also suggests that there is a risk of widespread bleaching in the Northwestern Hawaiian Islands in August, but little bleaching elsewhere during the northern hemisphere summer.

'The ability to predict coral bleaching events and provide advance warning is critically important to sustaining healthy reefs,' said Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force. 'When coral reef managers and reef users are alerted, they can mobilise monitoring efforts, develop response strategies, and educate reef users and the public on coral bleaching and possible effects on reef resources.'

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A major coral bleaching event occurred in the Caribbean in 2005, resulting in significant coral death in much of the region.

'As global temperatures continue to climb, predicting coral bleaching becomes even more critical,' said C. Mark Eakin, Ph.D., coordinator of NOAA's Coral Reef Watch Program. 'Our goal is to issue bleaching forecasts for coral reefs worldwide.'

Source: NOAA

POWERBOAT-WORLD.COM

Corals deliver Acid Shock

July 14, 2008

ARC Centre of Excellence Coral Reef Studies ©

The world's oceans may be acidifying far more rapidly than scientists expected, with serious implications for the future of corals, reef algae, shell fish and some ocean food chains.

New coral evidence suggesting the oceans may have acidified by almost a third of a unit of pH as a result of human emissions of CO2 will be presented today to the International Coral Reef Symposium, at Fort Lauderdale, Florida, in a keynote paper by Australian earth scientist Professor Malcolm McCulloch of the ARC Centre of Excellence for Coral Reef Studies and Australian National University.

'We've measured an increase of almost 0.3 of a pH unit in acidity in corals – which is much higher than has been detected so far in ocean water itself,' Prof. McCullough says.

'This suggests either that the corals are somehow amplifying the effect – or else that we may have gravely underestimated the rate at which the burning of fossil fuels is turning the oceans acidic.'

Acidic oceans have two important implications, Prof. McCulloch says. First, they may cause living creatures which depend on an alkaline environment to cease forming their shells and skeletons – this applies to about a third of sea life.

Second, as the oceans become saturated with CO2 their ability to absorb carbon from the atmosphere is expected to decline, leaving more CO2 in the air to insulate and accelerate the pace at which the planet warms.

NATIONAL GEOGRAPHIC NEWS
NATIONALGEOGRAPHIC.COM/NEWS

Tainted African Dust Clouds Harm U.S., Caribbean Reefs

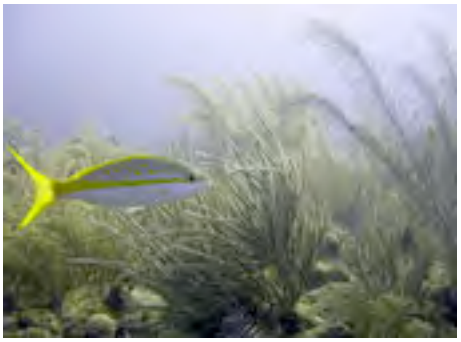
Brian Handwerk

July 14, 2008

Coral reefs in the United States and the Caribbean may be under siege—from a surprising source half a world away.

Scientists say tons of dust from Africa's arid Sahara and Sahel regions could be polluting oceans in the Caribbean and southeastern U.S.

The dusty clouds carry contaminants like metals, pesticides and microorganisms—potentially disastrous news for coral reefs and other marine animals already stressed by warming waters.



"We're trying to actually look at what is in these African dust air masses when the get over to the Caribbean," said Virginia "Ginger" Garrison, an ecologist with the U.S. Geological Survey in St. Petersburg, Florida, who studies how the dust travels.

"We're at the baby-step stages of trying to see how this dust and this stew of things may be affecting organisms—including humans—in downwind areas."

Something in the Air

Air-quality data from a network of sampling sites have revealed intriguing results, Garrison and colleagues said recently at the International Coral Reef Symposium in Fort Lauderdale, Florida.

For instance, Caribbean air samples during African dust events may hold two to three times as many microorganisms, such as bacteria and fungi, as samples taken from the same spot during other periods.

In Florida the Africa-influenced air conditions sometimes deteriorate below U.S. air-quality standards.

Air-quality testing in Mali, the U.S. Virgin Islands, and Trinidad and Tobago has also revealed traces of pesticides, including DDE—a breakdown product of DDT, which is still used as an insecticide in some African countries.

Pesticides are of particular concern to coral reefs because they can interfere with the tiny animals' reproduction, fertilization, or immune function.

(Related: " Coral Reefs Vanishing Faster Than Rain Forests" [August 7, 2007].)

These contaminants were highest in Mali and lower in the downwind areas of the Americas. Six pesticides were found at each one of the test sites, Garrison said.

"And there's been very, very little work that has been done on the concentrations of any of these pesticides or PCBs [and how] that would impair coral or coral reef organisms," she added.

Andrew Negri, of the Australian Institute of Marine Science in Townsville, co-authored one of the few previous studies on pesticides and coral.

"The pesticides associated with African dust are primarily insecticides. These can affect the coral host directly," Negri said.

"We have found that two of the identified insecticides, chlorpyrifos and endosulfan, can reduce the settlement and attachment of coral larvae to the ocean floor at very low concentrations.

"I would be particularly concerned if storms containing insecticide-contaminated dust were to occur upwind of coral reefs around spawning time," he said.

Winds of Change

Atmospheric systems such as the Africa-Americas pathway have functioned for thousands of years.

A similar system delivers Asian dust to the western United States, where it accounts for up to an estimated 40 percent of local air particles.

In recent times, however, humans have caused some significant changes.

Desertification and changing land-use patterns can put more dust into the air. Industrialization, pesticide use, waste burning, and other practices have produced air pollutants that ride with that dust to far-flung locales.

(Related: "Warming, Disease Causing Major Caribbean Reef Die-Off" [April 6, 2006].)

But the question of just where air "originates" is tricky, experts say. Traceable substances such as pollen can provide clues to where contaminants come from.

But in Garrison's view, mass mixing around the globe means that we all experience a single, large air system.

"I can watch a dust air mass [via] satellite coming out of Africa, across the Caribbean, and into the eastern U.S., and all of a sudden it peters out," she explained.

"But the air mass is still moving with some dust into the northeast[ern] U.S., where it mixes with a pollution cloud. Then it goes over the North Atlantic to Europe, picks up a bit of their pollution cloud, and then goes back to Africa. So where did this stuff come from?"

Garrison believes that while certain contaminants may be linked to specific areas, such as the African pesticides, no one region is entirely to blame for air-quality issues.

"We're all responsible," she said. "We all have to watch what we're putting into the air."

SUN STAR General Santos

World coral reefs facing extinction

By Henrylito D. Tacio

July 14, 2008

FORT LAUDERDALE, Florida -- Coral reef ecosystems are often hailed as the "rainforests of the seas." But unlike their counterparts, they have not given much importance by people since they could not be seen.

"When trees are cut and human beings are affected as a result of flashfloods, people rallied against deforestation," explained Dr. Bernhard Riegel, associate director of the National Coral Reef Institute in the United States. "But like forests, coral reefs are also suffering the same magnitude of destruction."

As a matter of fact, 20 percent of the world's coral reefs have already been destroyed, and another 24 percent may be lost within our lifetimes if human impacts on corals are not reduced.

For instance, in the Philippines, coral reefs have been slowly dying over the past 30 years. The World Atlas of Coral Reefs, compiled by the United Nations Environment Program (Unep), reported that 97 percent of reefs in the Philippines are under threat from destructive fishing techniques, including cyanide poisoning, over-fishing, or from deforestation and urbanization that result in harmful sediment spilling into the sea.

Last year, Reef Check, an international organization assessing the health of reefs in 82 countries, stated that only five percent of the country's coral reefs are in "excellent condition." These are the Tubbataha Reef Marine Park in Palawan, Apo Island in Negros Oriental, Apo Reef in Puerto Galera, Mindoro, and Verde Island Passage off Batangas.

Like tropical rainforests, coral reefs have much more to offer. Presently, coral reefs provide more than US$15 billion worth of fisheries and tourism services around the world. In Asia alone, one billion people depend on fish caught in coastal waters dominated by coral reefs.

About 80-90 per cent of the incomes of small island communities come from fisheries.

"Coral reef fish yields range from 20 to 25 metric tons per square kilometer per year for healthy reefs," said Dr. Angel C. Alcala, whose work in Apo Island, one of the world-renowned community-run fish sanctuaries in the Philippines, earned him the prestigious Ramon Magsaysay Award.

In addition, coral reefs crate a natural barrier (hence reducing erosion and protecting coastlines) against waves and storm surge. Also, within the past few decades, researches have recognized the potential for deriving medicinal compounds from organisms found on reefs.

But despite their importance, coral reefs around the world are facing extinction. "Coral reefs are under siege from many threats, but climate change is among the most serious risks to their survival," said Dr. Ellen Pikitch, executive director of the Pew Institute for Ocean Science.

Combined with over-fishing, disease, pollution, and habitat destruction, warming oceans caused by climate change have contributed to the death of corals worldwide, even on some of the world's most protected reefs.

Corals are simple animals that thrive within a narrow temperature range. They depend on partnerships with microscopic algae to help them thrive in shallow tropical seas.

These symbiotic algae live inside the corals and provide them with energy from photosynthesis, allowing corals to build their slow-growing limestone skeletons. However, rising temperatures caused by global warming disrupts this partnership, resulting in mass "bleaching" events in which coral lose their colorful algae and often die.

But there is good news. Dr. Andrew C. Baker, which has recently been awarded the prestigious 2008 Pew Fellowship in Marine Conservation, is planning to develop novel and groundbreaking techniques to enhance the thermal tolerance and help them survive dangerously warming oceans around the world.

Dr. Baker's initial breakthrough discovery that reef corals may be able to withstand climate change by switching algal partners was published in the journal Nature and hailed by Discover magazine as one of the "Top 100 Science Stories of 2001."

"We need to redouble our efforts to protect this critical resource," urged Rretired Navy Vice Admiral Conrad C. Lautenbacher Jr., administrator of the US National Oceanic and Atmospheric Administration (Noaa) during the launching of The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008.

Already, some organizations and businesses are responding to the call. Too Precious to Wear is one of them. "Corals inspire me and many others with their beauty," said Julia Louis-Dreyfuss, founding partner of the organization.

The United States, as the world's largest documented consumer, imported more than 26 million pieces from 2001 to 2006. The American market is responsible for 80 percent of the live coral taken from reefs (more than 400,000 pieces a year).

"Corals simply are too precious to wear," deplored Dawn M. Martin, president of SeaWeb. "They belong in their natural ocean habitat, where they contribute to the survival of thousands of other marine species. Consumers and the fashion industry can play an important role in the ocean's recovery by simply choosing products that do not harm the ocean."

In a press conference, Jenny Waddell, a marine biologist at NOAA, reported that marine protected areas are one of the most effective methods in conserving biodiversity and fisheries, "but they are limited in number and size, and over-fishing and the degradation of habitats by alien algae are of growing concern."

She added, however, that there is cause for hope. "We now understand how reefs are being degraded so we can take action to better protect them. There is increasing use of marine protected areas, and that is encouraging."

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The new ivory?

Sea lovers say coral too precious too wear

By Samantha Critchell, The Associated Press

July 15, 2008

NEW YORK - Sea coral is blessed with wonderful colors, an intricate design and memories of the lapping ocean. It's no wonder that the worlds of fashion and home decor are in the midst of a love affair with it.

Some argue, though, that coral is too precious to wear.

"We want to discourage consumers from purchasing coral," says scientist Andrew Baker. "It's like ivory. It's a product of a living animal and the harvest of this item is unsustainable."

It's unsustainable not because new coral won't grow, he says, but because there are no limits on the use or sale of coral and it's being harvested at a rate that nature can't keep up with.

"Dredging deep-sea coral forests is like clear-cutting the rainforest for sparrows: You're doing so much damage for something so small," says Baker, who is also an assistant professor at the at the University of Miami and the Pew Institute for Ocean Science.

Baker and a team from the Too Precious to Wear campaign, helmed by the nonprofit group SeaWeb that also took on the caviar and restaurant seafood causes, is lobbying to add pink and red corals, also known as Corallium, to the Conven-tion of Inter-national Trade in En-dangered Species, the global group that has put limits on rhinoceros horns, tiger feet and ivory. The coral had made it to the last round of negotiations in 2007, according to Baker, but failed to make it to the final list.

The pressures corals are facing were recently discussed at the International Coral Reef Symposium, which was attended by more than 2,500 scientists, economists, conservationists and educators. The theme was reefs for the future.

SeaWeb had noticed in the past couple of years that coral - real, faux and artistic interpretations - was all over the fashion runways and home-decorating magazines, explains Julia Robertson, program manager for Too Precious to Wear.

Around the same time, though, global warming, for which coral is considered a key indicator, had become a buzz topic, so marine-science groups saw an opportunity to raise public awareness, she says.

"We wanted to tap into the recognition of coral in fashion, design, jewelry and home decor. It's easier to talk to people when they know what you're talking about," Robertson says.

The campaign was launched earlier this year with partners including Pottery Barn, Tiffany & Co., Lela Rose, Vena Cava and Chantecaille Beaute.

Sylvie Chantecaille says her beauty company got involved about 18 months ago, largely because of her interest in the ocean.

"My whole family snorkels, dives. I grew up in the South of France diving and I have seen a change in the ocean over the years," she explains. "When you spend so much time under the water, you realize how amazing it is. I wanted to do something to protect it."

So Chantecaille developed Protect the Paradise compacts - one with eye shadow, another with powder - embossed with miniature ocean scenes to raise money for marine research and conservation. The project put Chantecaille in touch with other coral fans, including Baker, who taught her to appreciate their beauty from afar.

"I love the look of coral. They're so beautiful," Chantecaille says. "I used to be completely in love with coral jewelry so I totally understand the appeal."

But, she adds, "It's going to become like ivory. I used to wear ivory but I'd never wear it today now that I know what it means and what it symbolizes."

Tiffany stopped selling coral jewelry in 2003 and instead uses precious stones to replicate the exotic color and shapes found in the sea. The company brought the bulk of manufacturing in house, allowing it to examine sourcing, explains Linda Buckley, Tiffany vice president of public relations. While coral was not a huge part of the assortment, it set off some bells.

"Tiffany is closely associated with the natural world - it's where we get our inspiration and materials," Buckley says. She adds: "If you have healthy coral reefs, you have healthy oceans, healthy seabeds and healthy oysters - and we get our pearls from healthy oysters."

(Buckley notes that Tiffany has also examined their use of cultured pearls and decided it doesn't pose the same environmental risks as coral.)

"No one disputes coral as an object of beauty," says Baker, "but it is more important as a habitat."

Coral from shallow reefs, which are mostly a light color, tend to be used in interior decor, while the deep-sea corals - known as the "precious" black, pink and red corals from the Mediterranean Sea, Indian Ocean and the Pacific near Hawaii - are used for jewelry.

Yet, you only have to go to South Florida, where Baker is based, to find white coral being sold as a souvenir in kitschy shell shops, even though it was harvested thousands of miles away. This frustrates Baker and he thinks it probably confuses tourists, who are getting a mixed message not to disrupt the reefs when scuba-diving, but allowing them to buy chunks of dead coral.

"It's like going to a zoo," he says. "You learn about threatened tigers and then go to the zoo store and find a tiger pelt."

Fashion and decor surely aren't the main culprits in the destruction of the reefs, but artist Michael Aram makes the case to take them out of the equation entirely.

"One coral necklace doesn't necessarily mean the end of the world, but why, when you can still celebrate it in a form that's representational, still use it? It doesn't make sense," he says.

Aram favors casting coral sculptures in metal, then painting with enamel. Coral's natural unpredictable shape allows him a lot of flexibility, he says.

"My coral is evocative of the real thing but mine can be a fantasian coral - you can be pretty wild with coral."

ScienceDaily
Your source for the latest research news

New Coral Bleaching Prediction System Calls For Low Level Of Bleaching In Caribbean This Year

July 15, 2008

ScienceDaily (July 15, 2008) — A new NOAA coral bleaching prediction system indicates that there will be some bleaching in the Caribbean later this year, but the event will probably not be severe. NOAA issued the first-ever seasonal coral bleaching outlook this week at the 11th International Coral Reef Symposium in Ft. Lauderdale, Fla.

The system also suggests that there is a risk of widespread bleaching in the Northwestern Hawaiian Islands in August, but little bleaching elsewhere during the northern hemisphere summer.

Large colony of bleached Montastrea annularis. (Credit: NOAA)

"The ability to predict coral bleaching events and provide advance warning is critically important to sustaining healthy reefs," said Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force. "When coral reef managers and reef users are alerted, they can mobilize monitoring efforts, develop response strategies, and educate reef users and the public on coral bleaching and possible effects on reef resources."

The new prediction system uses NOAA experimental sea surface temperature forecasts to develop maps of anticipated coral bleaching severity during the upcoming bleaching season (August to October). While NOAA's Coral Reef Watch Program uses satellite sea surface temperature data to alert managers and scientists around the world of the risk of coral bleaching, the new prediction system includes longer range temperature forecasts up to three-months.

Coral bleaching is associated with a variety of stresses, especially increased ocean temperatures. This causes the coral to expel symbiotic micro-algae living in their tissues -- algae that provide corals with food. Losing their algae leaves coral tissues devoid of color, and thus they appear bleached. Prolonged coral bleaching of over a week can lead to coral death and the loss of coral reef habitats for a range of marine life.

A major coral bleaching event occurred in the Caribbean in 2005, resulting in significant coral death in much of the region.

"As global temperatures continue to climb, predicting coral bleaching becomes even more critical," said C. Mark Eakin, Ph.D., coordinator of NOAA's Coral Reef Watch Program. "Our goal is to issue bleaching forecasts for coral reefs worldwide."

The new system was developed by scientists of NOAA's Coral Reef Watch in Silver Spring, Md. and NOAA's Earth Science Research Laboratory in Boulder, Colo., with funding from the NOAA Climate Program Office's Sectoral Applications Research Program and NOAA's Coral Reef Conservation Program

African dust clouds harming U.S., Caribbean reefs

July 15, 2008

Coral reefs in the United States and the Caribbean may be under siege—from a surprising source half a world away.

Scientists say tons of dust from Africa's arid Sahara and Sahel regions could be polluting oceans in the Caribbean and southeastern U.S.

The dusty clouds carry contaminants like metals, pesticides and microorganisms—potentially disastrous news for coral reefs and other marine animals already stressed by warming waters.

"We're trying to actually look at what is in these African dust air masses when the get over to the Caribbean," said Virginia "Ginger" Garrison, an ecologist with the U.S. Geological Survey in St. Petersburg, Florida, who studies how the dust travels.

"We're at the baby-step stages of trying to see how this dust and this stew of things may be affecting organisms—including humans—in downwind areas."

Something in the Air

Air-quality data from a network of sampling sites have revealed intriguing results, Garrison said recently at the International Coral Reef Symposium in Fort Lauderdale, Florida.

For instance, Caribbean air samples during African dust events may hold two to three times as many microorganisms, such as bacteria and fungi, as samples taken from the same spot during other periods.

In Florida the Africa-influenced air conditions sometimes deteriorate below U.S. air-quality standards.

Air-quality testing in Mali, the U.S. Virgin Islands, and Trinidad and Tobago has also revealed traces of pesticides, including DDE—a breakdown product of DDT, which is still used as an insecticide in some African countries.

Pesticides are of particular concern to coral reefs because they can interfere with the tiny animals' reproduction, fertilization, or immune function.

These contaminants were highest in Mali and lower in the downwind areas of the Americas. Six pesticides were found at each one of the test sites, Garrison said.

"And there's been very, very little work that has been done on the concentrations of any of these pesticides or PCBs [and how] that would impair coral or coral reef organisms," she added.

Andrew Negri, of the Australian Institute of Marine Science in Townsville, co-authored one of the few previous studies on pesticides and coral.

"The pesticides associated with African dust are primarily insecticides. These can affect the coral host directly," Negri said.

"We have found that two of the identified insecticides, chlorpyrifos and endosulfan, can reduce the settlement and attachment of coral larvae to the ocean floor at very low concentrations; Kazinform cites National Geographic News.

"I would be particularly concerned if storms containing insecticide-contaminated dust were to occur upwind of coral reefs around spawning time," he said.

Winds of Change

Atmospheric systems such as the Africa-Americas pathway have functioned for thousands of years.

A similar system delivers Asian dust to the western United States, where it accounts for up to an estimated 40 percent of local air particles.

In recent times, however, humans have caused some significant changes.

Desertification and changing land-use patterns can put more dust into the air. Industrialization, pesticide use, waste burning, and other practices have produced air pollutants that ride with that dust to far-flung locales.

But the question of just where air "originates" is tricky, experts say. Traceable substances such as pollen can provide clues to where contaminants come from.

But in Garrison's view, mass mixing around the globe means that we all experience a single, large air system.

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"But the air mass is still moving with some dust into the northeast[ern] U.S., where it mixes with a pollution cloud. Then it goes over the North Atlantic to Europe, picks up a bit of their pollution cloud, and then goes back to Africa. So where did this stuff come from?"

Garrison believes that while certain contaminants may be linked to specific areas, such as the African pesticides, no one region is entirely to blame for air-quality issues.

"We're all responsible," she said. "We all have to watch what we're putting into the air."

Jamaica Gleaner
Established 1834

Coral catastrophe - At least 845 reef species hit red list

Janet Silvera, Senior Tourism Writer

July 15, 2008

WESTERN BUREAU:

Delegates attending the 11th International Coral Reef Symposium (ICRS) in Florida last week were jolted by the bleak revelation that one-third of all reef-building coral species face extinction.

The latest findings were released to some 2,500 international scientists, policymakers, managers, and conservationists from approximately 150 countries in attendance at the conference.

In a release to The Gleaner, the ICRS said that the 39 authors of the study assessed 845 coral-reef species against the International Union for Conservation of Nature Red List criteria. The authors analysed characteristics, such as population range and size, life history traits, susceptibility to threats and estimations of regional coral cover loss.

The authors found that the Coral Triangle of Indonesia, Malaysia and other Pacific island nations has the highest proportion of vulnerable coral species. Lead author Dr Kent Carpenter warned that it is not coral alone which is under threat.

Caribbean coral reefs have reportedly suffered an 80 per cent decline in cover over the last three decades. - photo by krishna desai

Animals die

"When coral die off, so do the other plants and animals that depend on coral reefs for food and shelter, and this can lead to the collapse of entire ecosystems," he said.

Carpenter and his team's findings were corroborated by Rich Aronson, Dauphin Island Research Lab, University of South Alabama, who said that in the next few decades, coral bleaching will occur every two to three years and maybe every year.

"This is troubling because reefs protect tropical shorelines, and without that protection, people in coastal communities are going to suffer from pounding waves, and beaches, houses and farms are going to wash away,"said Carpenter.

He noted that reefs also would not be able to keep up with rising sea levels, which are predicted to increase by seven to 19 inches in the next 100 years. As a result, reefs will drown and stop growing.

"We need to protect coral from local threats, so they can survive global issues like climate changes.

"There is a tendency to give up, and there is compassion fatigue. But reefs feed half a billion people around the world, so this is about our food security," the scientist stated.

Predictions

The report comes on the heels of predictions of marine scientists who said that by 2015, coral-reef degradation could result in annual losses of US$100 million ($7.2 billion) to $300 million ($21 billion) to the Caribbean tourist industry.

Presenting some alarming statistics at the 10th annual Sustainable Tourism Conference in May, director of the conservation programmes, Coral Reef Alliance, Rick MacPherson, said the region's reefs were at great risk, and almost two-thirds of them were under threat.

"Caribbean reefs have suffered an 80 per cent decline in cover during the past three decades, while 80 to 90 per cent of elkhorn and staghorn coral is gone," he revealed.

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Coral called 'Too Precious to Wear'

Samantha Critchell • The Associated Press

July 15, 2008

NEW YORK — Sea coral is blessed with wonderful colors, an intricate design and memories of the lapping ocean. It's no wonder that the worlds of fashion and home decor are in the midst of a love affair with it.

Some argue, though, that coral is too precious to wear.

"We want to discourage consumers from purchasing coral," says scientist Andrew Baker. "It's like ivory. It's a product of a living animal and the harvest of this item is unsustainable."

It's unsustainable not because new coral won't grow, he says, but because there are no limits on the use or sale of coral and it's being harvested at a rate that nature can't keep up with.

The Associated Press

This coral-inspired compact by was designed by Chantecaille, which is participating in a campaign promoting faux coral.

"Dredging deep-sea coral forests is like clear-cutting the rainforest for sparrows: You're doing so much damage for something so small," says Baker, who is also an assistant professor at the at the University of Miami and the Pew Institute for Ocean Science.

Baker and a team from the Too Precious to Wear campaign, helmed by the nonprofit group SeaWeb that also took on the caviar and restaurant seafood causes, is lobbying to add coral to the Convention of International Trade in Endangered Species, the global group that has put limits on rhinoceros horns, tiger feet and ivory. Coral had made it to the last round of negotiations in 2007, according to Baker, but failed to make it to the final list.

Next week, a similar case will be presented to the International Coral Reef Symposium, which will be attended by more than 2,500 scientists, economists, conservationists and educators. The theme of the meeting is reefs for the future.

Baker doesn't want the world to wait. SeaWeb had noticed in the past couple of years that coral - real, faux and artistic interpretations - was all over the fashion runways and home-decorating magazines, explains Julia Robertson, program manager for Too Precious to Wear.

Around the same time, though, global warming, for which coral is considered a key indicator, had become a buzz topic, so marine-science groups saw an opportunity to raise public awareness, she says.

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Belfast Telegraph ENVIRONMENT

Coral reefs face extinction

July 15, 2008

A third of the world's coral species are threatened with extinction, according to an international study that revealed rapid and alarming deterioration in the state of coral reefs over the past 10 years.

Many will have disappeared by the end of the century unless global warming, pollution and over-fishing are curbed, warned scientists in the most damning and definitive assessment on tropical corals yet delivered.

Coral reefs, the only living structures that can be seen from space, are often compared with tropical rainforests for the diversity and wealth of wildlife and plants that live in and around them. Their loss could also threaten the 25 per cent of marine species that need them for survival, as well as endangering the livelihoods of the estimated 200 million people who rely on them either for food or as a source of income.

An international team of scientists found that 231 of the 704 reef-building corals the study was able to assess were in such a poor state that they had fallen into the three most-threatened categories of species as defined by the International Union for the Conservation of Nature (IUCN). Its Red List of species has seven categories. As of yesterday, the 231 coral species on the Red List have been formally classified as either "vulnerable", "endangered" or "critically endangered".

The 39 scientists from 14 countries also investigated the remaining 141 reef-building coral species but could not gather enough information on them to make an accurate assessment. But they believe many of these corals are also highly likely to be threatened with extinction.

What made the study even more urgent was scientists' ability to calculate what state the corals were in before 1998, when a significant rise in sea-surface temperatures was linked with a worldwide outbreak of coral "bleaching", when corals as far apart as the Caribbean and the Indian Ocean lost their colour because of heat stress.

The scientists found that only 13 species of reef-building corals before 1998 would have fallen into the three most-endangered categories. This means there has been an almost 20-fold increase in the threat to corals in a decade.

They cited rising sea temperatures, caused by global warming, pollution from such human activities as sewage and agricultural run-off, and over-fishing as the biggest threats. But they warn that all of these may be eclipsed by the threat of rising ocean acidity caused by increases in atmospheric carbon dioxide, which could eventually dissolve the calcium carbonate skeletons of reef-building corals.

Kent Carpenter of the Old Dominion University in Norfolk, Virginia, who directed the global coral assessment for the IUCN, said the threat to the corals is probably unprecedented in modern times. “The results of this study are very disconcerting,” Dr Carpenter said. “When corals die off, so do the other plants and animals that depend on coral reefs for food and shelter, and this can lead to the collapse of entire ecosystems. If you are interested in biodiversity I would say this is one of the most alarming findings in terms of marine life.”

The threat of the extinction of corals could match the mass extinction that wiped out almost half of the corals 65 million years ago, along with the dinosaurs, in a geological event known as the Cretaceous-Tertiary boundary, he said. “We know that conditions existed on Earth that allowed huge numbers of extinctions. These extinctions that existed in geological times could be mimicked by what is happening on Earth today.

“The sort of changes that we as humans are bringing about could essentially be the same sort of catastrophic event that caused the Cretaceous-Tertiary mass extinctions. That took a while. This is probably faster.”

The study is published in the journal Science and was released yesterday at the International Coral Reef Symposium in Fort Lauderdale, Florida. The scientists said corals are now rated second only to amphibians as the most threatened group of animals on Earth. “The proportion of corals threatened with extinction has increased dramatically in recent decades and exceeds most terrestrial groups,” they added. Roger McManus, vice president of marine programmes at Conservation International, said that if sea-surface temperatures continue to rise, causing more frequent episodes of coral bleaching, it will be increasingly difficult for corals to survive further environmental insults.

“These results show that as a group, reef-building corals are more at risk of extinction than all terrestrial groups, apart from amphibians, and are the most vulnerable to the effects of climate change,” Dr McManus added. “The loss of corals will have profound implications for millions of people who depend on coral reefs for their livelihoods.”

Julia Marton-Lefevre, director general of the IUCN, said: “We either reduce CO2 emissions now or many corals will be lost forever. Improving water quality, global

education and the adequate funding of local conservation practices are also essential to protect the foundation of beautiful and valuable coral reef ecosystems."

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Coral bleaching once more centre stage

By Henrylito Tacio

July 15, 2008

During the 9th International Coral Reef Symposium (ICRS) in Bali, Indonesia, coral bleaching was one of the main topics discussed by experts. Now, eight years later, coral bleaching has again taken centre stage in the current Florida symposium – the 11th after the Okinawa symposium in 2004. Coral bleaching, like global warming, is a phenomenon that can no longer be ignored.

In 2005, the world experienced the hottest year, which exceeded the previous nine record years, including 1998. The warm water temperatures caused large-scaled coral bleaching as "a stress response."

"Bleached coral were effectively starving and susceptible to other stresses including diseases," wrote Dr. Clive Wilkinson and Dr. David Souter in their executive summary for the newly-released, Status of Caribbean Coral Reefs After Bleaching and Hurricanes in 2005. "As a result, many coral reefs died."

Bleached corals on southern Great Barrier Reef.
Photo © Ove Hoegh-Guldberg, University of Queensland

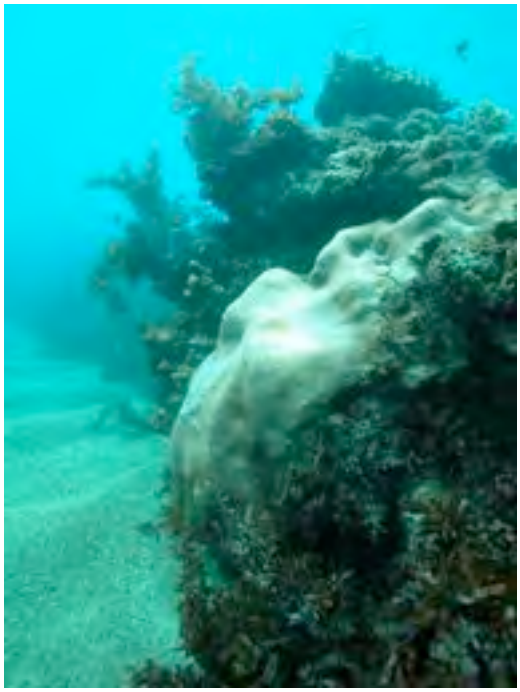
In Brazil, the first coral bleaching was reported "but it was minor." In June, bleaching reports came in from Colombia and Puerto Rico. By July, the bleaching extended to Belize, Mexico and the US Virgin Islands, where it affected "between 25 per cent to 45 per cent of coral colonies."

By August, mass coral bleaching were reported from Florida, the Cayman Islands, the northern Dutch Antiles (St. Maarten, Saba. St. Eustatius), the French West Indies (Guadeloupe, Martinique, St. Bathelemy), Barbados, Jamaica and Cuba. "Bleaching in these countries was generally severe affecting 50 per cent to 90 per cent of coral colonies," Wilkinson and Souter wrote.

Corals grow in the warm waters, but many of them are near the limits of their tolerance for high temperatures. Bleaching is a breakdown of a "complex biological system" that corals have evolved in order to survive. Each coral formation is a colony of hundreds or thousands of tiny organisms (known as polyps) that jointly build a skeleton that forms the reef. The outside layer of each coral polyp is inhabited by tiny one-celled plants scientists called zooxanthellae. It is these organisms that give the coral its bright colors, and when expelled due to warmer water or some other stress, coral appears bleached (that is, go pale or snowy-white).

Poor recovery

Without zooxanthellae, the coral cannot survive for long. "Corals tend to die in great numbers immediately following coral bleaching events, which may stretch across thousands of square kilometres of ocean," explained Dr. Ove Hoegh-Guldberg, who has studied the phenomenon of coral bleaching since the early 1980s.



This reef shows signs of erosion and bleaching. Photo © Ove Hoegh-Guldberg, University of Queensland.

Their report on the Management of Bleached and Severely Damaged Coral Reefs traced coral bleaching as far back as 1870. However, since the 1980s, bleaching events have become more frequent, widespread and severe.

In a press conference, Dr. Douglas Fenner, a professor of the Johns Hopkins University, reported of "a widespread annual summer mass coral bleaching" happening in American Samoa since 2003.

"I have observed the phenomenon every summer in the last five years," he said. "A few of the corals died and some were close to death after the bleaching." Only a fraction survived.

What alarmed him is the fact that after the global mass coral bleaching that occurred in 1998 after the El Niño phenomenon, some coral reefs were able to recuperate. But with summer bleaching, there is no time the corals could recover. "The future (for coral reefs) does not look good," he warned.

Algal partners

But there are some good news. Dr. Andrew C. Baker, who has recently been awarded the prestigious 2008 Pew Fellowship in Marine Conservation, is planning to develop novel and groundbreaking techniques to enhance the thermal tolerance and help them survive dangerously warming oceans around the world.

Dr. Baker's initial breakthrough discovery that reef corals may be able to withstand climate change by switching algal partners was published in the journal Nature and hailed by Discover magazine as one of the "Top 100 Science Stories of 2001."

All over the world, coral reefs are facing death. Before it is too late for the world to wake up one day without coral reefs, Dr. Simon Donner urged that something must be done now. He compared the international community to that riding on a big ship like Titanic heading for oblivion.

"We have to do hit the break to slow down from moving to hit the iceberg," urged Dr. Donner, a Canadian scientist based at the University of British Columbia. "We have to find something to lessen the impact of coral bleaching and other stressors from destroying the coral reefs."

Henrylito Tacio is an award-winning journalist, based in the Philippines, and a contributing editor of this website. See more of his reports from the 11th International Coral Reef Symposium in the Coasts and Oceans section.

KeysNet.com Featuring news from Florida Keys Keynoter The Reporter Sunday Key West Keynoter

International scientists want Keys coral knowledge

Group heads south to learn from locals

By Kevin Wadlow

July 16, 2008

Coral reefs may yet survive but the extinction clock is ticking, says Australian reef expert Jos Hill. "The thing to keep in mind is that we need to reduce greenhouse gases if we want to protect the coral reefs," said Hill, managing director of Reef Check Australia, one of the world's largest reef monitoring programs.

Hill and a dozen other coral scientists and researchers came to Key Largo Monday for a field trip affiliated with last week's 11th International Coral Reef Symposium in Fort Lauderdale.

A global study presented at the symposium warned that one third of the oceans' coral reefs may face extinction by 2050 -- if steps are not taken to reduce coral bleaching, among other things.

An international team of 39 reef experts participated in the study.

"If we do not do those things, then, at the current level of how things are going, we will probably lose our coral reefs by the middle of this century," says lead author Kent Carpenter of Old Dominion University.

Asked for her assessment of Florida Keys reefs, Hill winced and changed the subject to the large population of fish at French Reef off Key Largo.

"The water quality is not as good as I expected," said Yutaka Tateda of Japan's Environmental Science Research Laboratory.

The scientists came to the Keys to meet with staff of the Reef Environmental Reef Education Foundation, based in Key Largo, to learn about REEF's popular fish-survey program that relies on volunteer divers.

"A main goal is to have an educated populace that understands the reef system," said Jim Bohnsack, a biodiversity scientist with the federal Southeast Fisheries Science Center in Miami.

"Divers stop thinking of 'fish' and start recognizing individual species," said Bohnsack, a founding member of REEF and credited with pioneering REEF's "roving diver" survey technique.

Hill said Reef Check Australia relies largely on volunteers, and she was eager to pick up tips from REEF's "successful monitoring program."

"Reefs can recover, and now we have a better understanding of the problems," Hill said. "But we have to act. The situation is pretty dire if we don't."

Coral bleaching has become a worldwide concern, Tateda said. Pacific Ocean reefs "suffered a very severe bleaching event," he said. "We wanted to know what happened, and how the U.S. is responding to bleaching."

The coral-reef symposium in Fort Lauderdale concluded with experts calling for more action to reduce climate change and take active steps to reduce the increasing problem of ocean acidification.

Changes in the ocean temperature and acidic levels prevent corals from recovering from bleaching events or coral diseases, they said.

Most at risk are the branching corals, like the elkhorn and staghorn corals that once were the signature of the Keys reef.

TCPALM
FLORIDA'S TREASURE COAST AND PALM BEACHES

Letter: Wastewater regulations a key step for the area

July 16, 2008

At the International Coral Reef Symposium, Gov. Charlie Crist signed the bill that would eventually eliminate the six ocean outfall wastewater discharges along Florida's southeast coast. It's about time, thank you.

From Delray to Miami, about 394 million gallons per day are dumped from wastewater plants out to a 90-foot depth. As the Gulfstream runs north, these polluted waters are carried over coral reefs, causing major algae blooms, over-nitrification and coral bleaching.

This has also been a dramatic "waste" of our freshwater resources. These discharges will now have to go to advanced water treatment and total water reuse for irrigation and recharging our below-ground aquifers.

This was a great step toward cleaning up our coastal waters, but we have a long way to go. We also need to stop the deep-well injection of about 500 million gallons per day of wastewater down below 3,000 feet, hoping to never see it again.

Some studies have shown the migration of this wastewater up into our potable water aquifers and even laterally to the east where it comes out onto our nearshore reefs, causing major devastation.

This is another big "waste" of freshwater resources that could be cleaned up and reused and at the same time stop polluting our below-ground aquifers.

Mark D. Perry

executive director

Florida Oceanographic Society

THE INDEPENDENT | NATURE

Ocean quest: The race to save the world's coral reefs

July 17, 2008

Last week, scientists issued their latest, grim assessment of the world's coral reefs. But as Steve Connor reports from Florida, extraordinary new ocean 'reseeding' techniques mean there may still be time to halt – or even reverse – the destruction of mother nature's marine marvels

STERLING ZUMBRUNN/CONSERVATION INTERNATIONAL
A third of the world's coral reefs may face extinction

Coral reefs are often described as the tropical rainforests of the oceans. But marine biologists sometimes use another analogy: that of the canary in the coalmine. These birds were used by miners as an early warning for lethal gas; corals, too, are

extraordinarily sensitive to environmental change. For Nancy Knowlton, a scientist at the Smithsonian Natural History Museum, it's an apt description: "If that's the analogy, then the canary has passed out on the floor of the cage. Coral reefs are potentially immortal. They only have to die if we make them."

And that's just what we seem to be doing. In the 25 years that Knowlton has been studying the reefs, she has witnessed all the signs of their terminal decline. They are being degraded at a rate of 2 per cent a year. About a fifth of the world's stock has already gone, and nearly half of the remainder is in danger of disappearing within the next 20 years. And like so many other experts in her field, Knowlton is worried: a lethal combination of pollution, predators, disease, rising sea temperatures, over-fishing and the acidification of the sea have put our coral reefs on the critical list.

Its plight is bad news for all of us, but will horrify anyone who has put on flippers, mask and snorkel to experience its magnificence first-hand. Snorkelling over a reef for the first time, as I did last week off the coast of Florida, is like floating over a brilliantly coloured Garden of Eden landscaped by some maritime Capability Brown. Corals of all shapes and sizes grow in the dappled sunlight. Vast, bulbous species covered with beautifully etched crenulations look like the intricate folds on the surface of a human brain. Others resemble petrified trees, their branches sticking up like fingers, or flat pancakes woven with intricate lacework. Waving sea fans drift back and forth with the gentle pulse of the waves, a hypnotic motion that sends you into a trance-like state of awe.

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Coral reefs are the product of tiny animals called polyps, which secrete an exterior skeleton of aragonite, a mineral made of calcium carbonate. Each generation of polyp grows on the dead skeletons of its ancestors, but because they clone themselves they have achieved a kind of immortality. Some grow slower than the rate at which the continents move – fingernails grow faster. But eventually they form massive structures such as the Great Barrier Reef, which is more properly a collection of 3,000 separate reefs and 900 coral islands, divided by narrow channels. They are the only biological structures that can be seen from space.

With so much coral in the world, it is hard to see how they could be at risk of destruction. But they are. Last week, the latest warning came from scientists who warned that an estimated third of all reef-building coral species were in imminent danger of extinction.

The threat had been steadily growing, and has now become a full-blown crisis. The scientists, working on behalf of the International Union for the Conservation of Nature, found that 231 reef-building coral species, out of a total of 704 that were capable of being studied, can be classified as either vulnerable, endangered or critically endangered, as defined by the IUCN's Red List of threatened species.

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The bleaching episode of 1998 is perhaps the single biggest milestone in the timeline of coral decline. As the name implies, the vividly coloured organisms turned a ghostly white, as a result of a king of marital row between the tiny polyp – the fleshy part of the stony coral – and its brightly decorated partner, a microscopic algae that lives inside the polyp.

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Scientists predict that, as sea temperatures rise, mass bleaching will begin to occur on an annual basis within the next 30 or 50 years. But already there are signs that it is increasing in both frequency and severity on a more localised scale. Douglas Fenner, of the Marine and Wildlife Resources in American Samoa, says that bleaching is now a regular event on his small patch of the Pacific Ocean. In some of the warmer-water

coral pools he studies, bleaching has occurred every month or so for the past five or six years. "It's the thin end of the wedge, and it's not good," he says.

But bleaching is just a symptom of the many deep-seated problems. Rising sea temperatures and pollution caused by run-off from the land – along with sewage and sedimentation – are just some of the factors that can either trigger a bleaching episode or kill the coral outright. Rising sea levels are another problem, because some corals are just not able to grow as fast as the sea level is rising.

"Rising temperatures could trigger mass coral bleaching once every couple of years," says Rich Aronson, of the University of South Alabama. "And corals are going to have a pretty hard time coping with rising sea levels if they are also suffering from chronic bleaching."

A still more sinister threat, however, is increasing ocean acidity, which is also caused by rising levels of carbon dioxide. Normally, the sea is slightly alkaline, but when carbon dioxide dissolves in it, the water becomes slightly more acidic. This makes it more difficult for the polyp to build its aragonite skeleton. At its worse, an acidic ocean will actually dissolve the coral reef, in the same way that tooth enamel dissolves in a glass of Coca-Cola.

When coral scientists from around the world met last week at the International Coral Reef Symposium in Florida, ocean acidification was high on the agenda as one of the most worrying unknowns. Scientist after scientist warned that acidification was one environmental insult that really could wipe out all reef-building corals. If the oceans do become as acidic as is predicted later this century, coral – and many of the species that rely on it – could go the way of the dinosaurs. As Joan Kleypas, of the US National Centre for Atmospheric Research, says: "Ocean acidification is the evil twin of climate change. It is the osteoporosis of the oceans."

With so much doom and gloom, scientists are left wondering what else they can do to alert the wider world to the plight of the corals – some even talk about "compassion fatigue" and "paralytic nihilism". Is there any hope left within the community of coral researchers?

The answer, surprisingly, is yes. Corals may be on the verge of extinction, but scientists believe there is still a window of opportunity left open and they point to the other common analogy used to describe coral reefs – tropical rainforests.

Coral reefs are often described as the rainforests of the ocean because of the diversity of life that both support. And, like the rainforests, coral reefs are under threat. But until recently, few have thought it possible to regenerate a coral reef in the same way it is possible to regenerate a tropical rainforest. Now, however, many scientists believe it is feasible to talk about a "reforestation" programme for reefs to prevent, or at least slow down, the damage.

These researchers believe this is more than a forlorn hope, despite the widespread pessimism about the future for coral reefs in a warmer world. Indeed, if one message emerged from the International Coral Reef Symposium, it was that no matter how dire the threat to corals has become, there is still time to save them – and coral regeneration could provide a critical stop-gap that could allow at least some corals to live through the climatic rigours of the 21st century.

Rebuilding or regenerating a coral reef, even if the environment is right for it, is no simple matter, however. The first problem has to do with coral sex, a mysterious business that occurs just once a year within an hour or so of sunset, and (usually) precisely five days after a full moon. For some unknown reason, many coral species release all their sperm and eggs in one huge ejaculate, communicating their mass excitement to their partners in the coral equivalent of pillow talk.

The resulting microscopic larvae then drift away, with only some of them returning to the reef where they settle down – literally – on the rock to form baby corals. One scientist said that trying to think of a way of managing this process to help with reef regeneration is like trying to manage a herd of deer that produce millions of fawns, which then drift off into the wind like dandelion seeds.

Fortunately, there is another way to regenerate reefs, which is based on vegetative reproduction – cloning. Scientists can take fragments of coral and grow them on a movable substrate in an underwater nursery. Sometimes the fragments are taken from "corals of opportunity" formed, for instance, from the rubble left behind when a boat smashes into a reef.

On other occasions, scientists can take tiny samples of corals from existing reefs, grow them in a nursery and replant them back in the wild on a damaged or degraded reef.

"We can remove fragments as small as between one and 10 polyps, which is equivalent to the bite of a parrot fish. It does no harm," says Yael Horoszowski, of the National Institute of Oceanography in Israel, who has successfully regenerated reefs in the Red Sea using the "coral gardening" concept.

"The method involves generating and farming large stocks of new coral colonies in an in situ floating nursery prior to their installation into degraded reefs," Dr Horoszowski explains. "These nurseries liberated coral babies at the site. We intended to restore the coral reef but we ended up restoring all the creatures at the coral site."

Scientists working in such far-flung sites as Biscayne Bay off the south-east coast of Florida – which is in sight of a nuclear power plant and a landfill site known as "Mount Trashmore" – and the Komodo National Park in Indonesia, where fishermen have taken to using home-made bombs to increase their catch, are now actively engaged with different coral gardening techniques in the hope of regenerating their reefs.

But no one is under any illusion that this is the answer to the coral crisis. Any attempt at regenerating reefs with hi-tech methods of cloning corals, or low-tech methods of re-arranging the local rocks, are doomed to fail if carbon dioxide levels continue to rise.

Rising sea levels, sea temperatures and ocean acidity will not be stopped otherwise. "The thinking behind this is that it's a stop-gap measure. We've got to do other things to address CO2," says Helen Fox of the WWF, who works on reef regeneration in the Komodo National Park.

Steve Palumbi, a coral scientist at Stanford University in California, says that nothing will stop the demise of the reefs unless the world addresses its addiction to fossil fuel.

"Planting coral has been successful, but it's really expensive to do, so you can only do it over a given area. The other alternative is to allow them to do it for themselves," Palumbi says. "I doubt that we can replant all the coral reefs in the world and get them back in a century. It's a really important concept, but you just can't rely on that."

Joan Kleypas probably speaks for the scientific consensus when she says that reef regeneration is just one important – albeit expensive – component in the conservation toolbox. But she says there is no way it will work unless carbon dioxide levels are stabilised at some point this century. "We need to think of things that can buy time so that when we do emerge from the climate crisis we'll still have some coral reefs left," Kleypas says.

But would life really be so different if there were no coral reefs left in the world? Aside from the aesthetic loss of one of the most beautiful habitats on earth, corals are a vital source of food and provide a livelihood for a surprising number of the world's inhabitants – somewhere between 200 million and 500 million people.

Rich Aronson points out that if all the coral reefs collapsed, then there would be broader implications for those of us who have no contact with reefs other than perhaps an occasional diving holiday.

"Coral reefs are an example of the type of ecosystem that, if they go, will produce social consequences that will ripple back to us all," Aronson says. "If they are lost, it will make the world a more difficult place to live."

Seven wonders of the world's oceans

By Rob Sharp

1. Belize Barrier Reef

A 300km section of the Mesoamerican Barrier Reef System, which stretches from Cancun to Guatemala, this is Belize's top tourist destination, and vital to its fishing

industry. Comprising fringing, barrier- and atoll-reef types, Charles Darwin once described it as "the most remarkable reef in the West Indies".

2. Red Sea Coral Reef

Hugging the shoreline off the coast of Egypt and Saudi Arabia, the section in the Gulf of Aqaba has been the subject of intensive studies. This is some of the most northernmost reef found in the world, with 220 species of coral recorded.

3. Madagascar reefs

The south-western coast of Madagascar supports the third-largest coral reef system in the world, known as the Toliara reef system. Its range of marine habitats include barrier and fringing reefs, shallow lagoons and abyssal slopes that fall to a depth of more than a kilometre. Dive there and you might see any one of the 6,000 recorded species swimming past your eyes.

4. Maldives reefs

The Maldives themselves are a spectacular chain of 22 atolls – islands made out of coral – spanning 800km in the Indian Ocean. The population of the islands is dependent on offshore reefs for the success of their economy, a large chunk of which comes from tourism. Some fish dwelling there are taken for local consumption, but much is exported for profit.

5. Tubbataha Reef

More than 1,000 species reside in this reef in the Philippines, many of which are endangered, including manta rays, lionfish, tortoise and clownfish. Rivalling the Great Barrier in terms of biodiversity, tens of thousands of birds rest here during their migrations, and are monitored closely by the coast guard.

6. Great Barrier Reef

The world's largest, stretching for 3,000km. Fauna include 30 species of whale and six species of sea turtle. Pollution from farms threatens it, and bleaching occurred in 1998, 2002 and 2006.

7. New Caledonia Barrier Reef

Second only to the Great Barrier, this is a 1,500km-long spectacle of ecological abundance, where new species are discovered daily. Animals holed up here include rare crab, green turtle and molluscs.

Belfast Telegraph ENVIRONMENT

Ocean quest: The race to save the world's coral reefs

July 17, 2008

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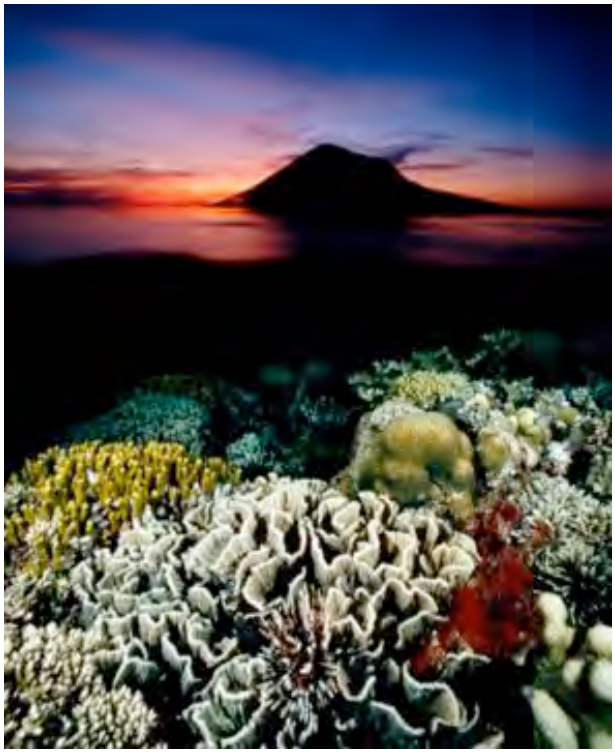

Garden of Hard Corals just beneath the water's surface at Bunaken Island, Manado Tua Marine National Park, Manado, North Sulawesi,

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With so much doom and gloom, scientists are left wondering what else they can do to alert the wider world to the plight of the corals – some even talk about "compassion fatigue" and "paralytic nihilism". Is there any hope left within the community of coral researchers?

The answer, surprisingly, is yes. Corals may be on the verge of extinction, but scientists believe there is still a window of opportunity left open and they point to the other common analogy used to describe coral reefs – tropical rainforests.

Coral reefs are often described as the rainforests of the ocean because of the diversity of life that both support. And, like the rainforests, coral reefs are under threat. But until recently, few have thought it possible to regenerate a coral reef in the same way it is possible to regenerate a tropical rainforest. Now, however, many scientists believe it is feasible to talk about a "reforestation" programme for reefs to prevent, or at least slow down, the damage.

These researchers believe this is more than a forlorn hope, despite the widespread pessimism about the future for coral reefs in a warmer world. Indeed, if one message emerged from the International Coral Reef Symposium, it was that no matter how dire the threat to corals has become, there is still time to save them – and coral regeneration could provide a critical stop-gap that could allow at least some corals to live through the climatic rigours of the 21st century.

Rebuilding or regenerating a coral reef, even if the environment is right for it, is no simple matter, however. The first problem has to do with coral sex, a mysterious business that occurs just once a year within an hour or so of sunset, and (usually) precisely five days after a full moon. For some unknown reason, many coral species release all their sperm and eggs in one huge ejaculate, communicating their mass excitement to their partners in the coral equivalent of pillow talk.

The resulting microscopic larvae then drift away, with only some of them returning to the reef where they settle down – literally – on the rock to form baby corals. One scientist

said that trying to think of a way of managing this process to help with reef regeneration is like trying to manage a herd of deer that produce millions of fawns, which then drift off into the wind like dandelion seeds.

Fortunately, there is another way to regenerate reefs, which is based on vegetative reproduction – cloning. Scientists can take fragments of coral and grow them on a movable substrate in an underwater nursery. Sometimes the fragments are taken from "corals of opportunity" formed, for instance, from the rubble left behind when a boat smashes into a reef.

On other occasions, scientists can take tiny samples of corals from existing reefs, grow them in a nursery and replant them back in the wild on a damaged or degraded reef.

"We can remove fragments as small as between one and 10 polyps, which is equivalent to the bite of a parrot fish. It does no harm," says Yael Horoszowski, of the National Institute of Oceanography in Israel, who has successfully regenerated reefs in the Red Sea using the "coral gardening" concept.

"The method involves generating and farming large stocks of new coral colonies in an in situ floating nursery prior to their installation into degraded reefs," Dr Horoszowski explains. "These nurseries liberated coral babies at the site. We intended to restore the coral reef but we ended up restoring all the creatures at the coral site."

Scientists working in such far-flung sites as Biscayne Bay off the south-east coast of Florida – which is in sight of a nuclear power plant and a landfill site known as "Mount Trashmore" – and the Komodo National Park in Indonesia, where fishermen have taken to using home-made bombs to increase their catch, are now actively engaged with different coral gardening techniques in the hope of regenerating their reefs.

But no one is under any illusion that this is the answer to the coral crisis. Any attempt at regenerating reefs with hi-tech methods of cloning corals, or low-tech methods of re-arranging the local rocks, are doomed to fail if carbon dioxide levels continue to rise.

Rising sea levels, sea temperatures and ocean acidity will not be stopped otherwise. "The thinking behind this is that it's a stop-gap measure. We've got to do other things to address CO2," says Helen Fox of the WWF, who works on reef regeneration in the Komodo National Park.

Steve Palumbi, a coral scientist at Stanford University in California, says that nothing will stop the demise of the reefs unless the world addresses its addiction to fossil fuel.

"Planting coral has been successful, but it's really expensive to do, so you can only do it over a given area. The other alternative is to allow them to do it for themselves," Palumbi says. "I doubt that we can replant all the coral reefs in the world and get them back in a century. It's a really important concept, but you just can't rely on that."

Joan Kleypas probably speaks for the scientific consensus when she says that reef regeneration is just one important – albeit expensive – component in the conservation toolbox. But she says there is no way it will work unless carbon dioxide levels are stabilised at some point this century. "We need to think of things that can buy time so that when we do emerge from the climate crisis we'll still have some coral reefs left," Kleypas says.

But would life really be so different if there were no coral reefs left in the world? Aside from the aesthetic loss of one of the most beautiful habitats on earth, corals are a vital source of food and provide a livelihood for a surprising number of the world's inhabitants – somewhere between 200 million and 500 million people.

Rich Aronson points out that if all the coral reefs collapsed, then there would be broader implications for those of us who have no contact with reefs other than perhaps an occasional diving holiday.

"Coral reefs are an example of the type of ecosystem that, if they go, will produce social consequences that will ripple back to us all," Aronson says. "If they are lost, it will make the world a more difficult place to live."

Seven wonders of the world's oceans

By Rob Sharp

1. Belize Barrier Reef

A 300km section of the Mesoamerican Barrier Reef System, which stretches from Cancun to Guatemala, this is Belize's top tourist destination, and vital to its fishing industry. Comprising fringing, barrier- and atoll-reef types, Charles Darwin once described it as "the most remarkable reef in the West Indies".

2. Red Sea Coral Reef

Hugging the shoreline off the coast of Egypt and Saudi Arabia, the section in the Gulf of Aqaba has been the subject of intensive studies. This is some of the most northernmost reef found in the world, with 220 species of coral recorded.

3. Madagascar reefs

The south-western coast of Madagascar supports the third-largest coral reef system in the world, known as the Toliara reef system. Its range of marine habitats include barrier and fringing reefs, shallow lagoons and abyssal slopes that fall to a depth of more than a kilometre. Dive there and you might see any one of the 6,000 recorded species swimming past your eyes.

4. Maldives reefs

The Maldives themselves are a spectacular chain of 22 atolls – islands made out of coral – spanning 800km in the Indian Ocean. The population of the islands is dependent on offshore reefs for the success of their economy, a large chunk of which comes from tourism. Some fish dwelling there are taken for local consumption, but much is exported for profit.

5. Tubbataha Reef

More than 1,000 species reside in this reef in the Philippines, many of which are endangered, including manta rays, lionfish, tortoise and clownfish. Rivalling the Great Barrier in terms of biodiversity, tens of thousands of birds rest here during their migrations, and are monitored closely by the coast guard.

6. Great Barrier Reef

The world's largest, stretching for 3,000km. Fauna include 30 species of whale and six species of sea turtle. Pollution from farms threatens it, and bleaching occurred in 1998, 2002 and 2006.

7. New Caledonia Barrier Reef

Second only to the Great Barrier, this is a 1,500km-long spectacle of ecological abundance, where new species are discovered daily. Animals holed up here include rare crab, green turtle and molluscs.

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Coral Reefs in Troubled Waters

A team of international scientists discover that one-third of the world's coral-building reefs face extinction

By Jaya Jiwatram

July 17, 2008

Coral Reefs in Papua New Guinea: Reefs like these are more threatened than previously believed. Photo by Mila Zinkova

Time and time again we hear news about the danger the world's coral reefs are in. Now, the first-ever comprehensive international assessment of their conservation status reveals that the fate of coral is worse even than scientists previously believed. The study, published in Science and spearheaded by 39 scientists from 14 countries, revealed that 231 of the 704 reef-building corals studied fell within the International Union for the Conservation of Nature's three most-threatened categories. The sheer number of those threatened alarmed scientists, who just a decade ago believed only 13 species of reef-building coral faced a threat. The team also found that the largest proportion of those in the high-risk categories were in the Caribbean.

Climate change, high sea surface temperatures, acidity levels and carbon dioxide levels, coastal development, sewage discharge and overfishing are all contributing factors to coral reefs' demise. The study warns that the fate of the reefs all depends on how much these external causes can be curbed as well as the ability of coral reefs to adapt to changes. But, we have more to worry about than the coral reefs alone. Coral reefs, often called the rainforests of the sea, may only cover 0.2 percent of the earth's surface but they host about two million species that live in and around them. Another 200 million people rely on the reefs for food or as a means of income. So, if the coral reefs go, they won't be alone.

Via PhysOrg

green guide > green space

Reef madness

By Kat Kerlin

July 17, 2008

More than half of U.S. coral reef ecosystems are in “poor” or “fair” condition, according to a report by the National Oceanic and Atmospheric Association released this month.

Coral reefs are like the ocean’s canary in a coal mine. When they’re in trouble, the ocean is, too. They also protect coastal communities, as seen in the 2005 tsunami in Asia. Where reefs were intact, they helped buffer the waves, reducing their impact on the coasts. Where reefs had deteriorated, nearby coasts were slammed.

The report says coral reefs are deteriorating due to both natural and man-made causes, including overfishing, sedimentation, marine debris, and recreation. The affects of climate change are also causing concerns about rising sea levels, higher sea surface temperatures, mass coral bleaching and disease epidemics. The report says, “Continued increases in CO2 may result in acidification of waters to the point that calcification by marine organisms can no longer occur, which would prevent future coral reef growth altogether.”

NOAA says vast areas of reefs in remote areas of the Pacific are still in good shape but “not immune to threats,” specifically from poaching, as the number of formerly abundant fish species are reducing their numbers, some drastically.

The 569-page document covers the U.S. Virgin Islands, Puerto Rico, Navassa Island, southeast Florida, the Florida Keys, Flower Garden Banks, the Main Hawaiian Islands, the Northwestern Hawaiian Islands, American Samoa, Pacific Remote Islands, the Republic of the Marshall Islands, Guam and the Republic of Palau. It’s available at http://ccma.nos.noaa.gov/stateofthereefs.

Thriving coral jewellery trade threatens reefs

July 18, 2008

Coral reef experts meeting in Florida last week said rising global temperatures and increases in ocean acidity are threatening to wipe out a third of the world's coral species by 2050.

But there are other threats to the survival of corals, including a thriving trade in coral jewellery, especially in Indonesia. The lobby group "Too Precious to Wear" is hoping to have coral added to the endangered species list under the Convention on the International Trade in Endangered Species, or CITES.

Presenter: Corinne Podger
Speaker: Andrew Baker, Spokesman for the campaign group "Too Precious to Wear"

Internet home of Philippine news
SUN STAR Davao

Coral bleaching takes centerstage

By Henrylito D. Tacio

July 18, 2008

FORT Lauderdale, Florida -- During the 9th International Coral Reef Symposium (ICRS) in Bali, Indonesia, coral bleaching was one of the main topics discussed by experts.

Eight years later, coral bleaching has again taken a center stage in the current ICRS -- the 11th after the Okinawa symposium in 2004 -- Here. Coral bleaching, like global warming, is a phenomenon that can no longer be ignored.

In 2005, the world experienced the hottest year, which exceeded the previous nine record years, including 1998. The warm water temperatures caused large-scaled coral bleaching as "a stress response" to the excessive temperatures.

"Bleached coral were effectively starving and susceptible to other stresses including diseases," wrote Dr. Clive Wilkinson and Dr. David Souter in their executive summary for the newly-released, Status of Caribbean Coral Reefs After Bleaching and Hurricanes in 2005. "As a result, many coral reefs died."

In Brazil, the first coral bleaching was reported "but it was minor." In June, bleaching reports came in from Colombia and Puerto Rico. By July, the bleaching extended to Belize, Mexico and the US. Virgin Islands, where it affected "between 25 percent to 45 percent of coral colonies."

By August, mass coral bleaching were reported from Florida, the Cayman Islands, the northern Dutch Antiles (St. Maarten, Saba. St. Eustatius), the French West Indies (Guadeloupe, Martinique, St. Bathelemy), Barbados, Jamaica and Cuba.

"Bleaching in these countries was generally severe affecting 50 percent to 90 percent of coral colonies," Wilkinson and Souter wrote.

Corals grow in the warm waters, but many of them are near the limits of their tolerance for high temperatures. Bleaching is a breakdown of a "complex biological system" that corals have evolved in order to survive.

Each coral formation is a colony of hundreds or thousands of tiny organisms (known as polyps) that jointly build a skeleton that forms the reef. The outside layer of each coral polyp is inhabited by tiny one-celled plants scientists called zooxanthellae.

It is these organisms that give the coral its bright colors, and when expelled due to warmer water or some other stress, coral appears bleached (that is, go pale or snowy-white).

Without zooxanthellae, the coral cannot survive for long. "Corals tend to die in great numbers immediately following coral bleaching events, which may stretch across thousands of square kilometers of ocean," explained Dr. Ove Hoegh-Guldberg, who has studied the phenomenon of coral bleaching since the early 1980s.

The Management of Bleached and Severely Damaged Coral Reefs traced coral bleaching as far back as 1870. However, since the 1980s, bleaching events have become more frequent, widespread and severe.

In a press conference, Dr. Douglas Fenner, a professor of the Johns Hopkins University, reported of "a widespread annual summer mass coral bleaching" happening in American Samoa since 2003.

"I have observed the phenomenon every summer in the last five years," he said. "A few of the corals died and some were close to death after the bleaching." Only a fraction survived.

What alarmed him is the fact that after the global mass coral bleaching that occurred in 1998 after the El Niño phenomenon, some coral reefs were able to recuperate. But with summer bleaching, there is no time the corals could recover. "The future (for coral reefs) does not look good," he warned.
But there are some good news.

Dr. Andrew C. Baker, who has recently been awarded the prestigious 2008 Pew Fellowship in Marine Conservation, is planning to develop novel and groundbreaking techniques to enhance the thermal tolerance and help them survive dangerously warming oceans around the world.

Dr. Baker's initial breakthrough discovery that reef corals may be able to withstand climate change by switching algal partners was published in the journal Nature and hailed by Discover magazine as one of the "Top 100 Science Stories of 2001."

All over the world, coral reefs are facing death. Before it is too late for the world to wake up one day without coral reefs, Dr. Simon Donner urged that something must be done now. He compared the international community to that riding on a big ship like Titanic heading for oblivion.

"We have to do hit the break to slow down from moving to hit the iceberg," urged Dr. Donner, a Canadian scientist based at the University of British Columbia. "We have to find something to lessen the impact of coral bleaching and other stressors from destroying the coral reefs."

POWERBOAT-WORLD.COM

Finding a Cure for the 'Coral Crisis'

July 18, 2008

'The GBR streaches over 1500km along the Queensland coast. Photo courtesy of The Great Barrier Reef Marine Park Authority' ARC Centre of Excellence Coral Reef Studies ©

The management of Australia's Great Barrier Reef Marine Park has been hailed as a groundbreaking international model for better managing the oceans, in a leading United States scientific publication.

In a study published in the prestigious Proceedings of the US National Academy of Science, Per Olsson and Carl Folke of the Stockholm Resilience Centre and Terry Hughes of the ARC Centre of Excellence for Coral Reef Studies in Australia have identified the keys to successful marine ecosystem-based management. Their findings were revealed today at the 11th International Coral Reef Symposium, in Fort Lauderdale, Florida, where the world's leading coral reef scientists and managers have gathered.

'The core issue is that the global 'coral crisis' is really a crisis of governance,' says Prof. Terry Hughes. 'Round the world, people are struggling with the difficulties of managing these sensitive coral ecosystems in the face of all the human and natural pressures they are subject to.'

'Many people have tried to protect marine environments but as soon as some form of governance was put in place and everyone relaxed, it was overtaken by events – either human or natural. The critical realization in the case of the Great Barrier Reef was that its management had to be flexible and adaptive, based on continual scientific monitoring of what is going on.'

'This flexibility was important in order to deal with change and to navigate the transition to an improved system of governance' Dr. Olsson says.

The paper highlights the role of leadership and consensus-building, and credits the Great Barrier Reef Marine Park Authority and its Chair, Virginia Chadwick, with having sought and gained the support of the public, industry and governments at all levels for putting the management of the world's largest coral reef system onto an ecological footing.

'Our study shows the importance of leadership and strategies for responding to signals of change before ecosystem collapse occurs', Dr. Olsson says.

A critical step in the process was to convince local communities that the reef was facing many threats, and to enlist public support for managing it more flexibly. This was accomplished through a major 'Reef Under Pressure' community consultation campaign.

'Combined with the declines in populations of dugongs, turtles, sharks and other fish, polluted runoff from the land and global warming impacts; it became clear to everyone that the original management system was becoming less and less adequate as the pressures on the reef grew.' Prof. Hughes says.

One of the most visible and controversial initiatives under the new regime was to extend the area closed to all forms of fishing from 6 to 33 per cent of the total reef area – creating the largest no-take zone in the world.

'The Barrier Reef example illustrates a shift in thinking to an integrated view of humans and nature, based on active stewardship of marine ecosystems for human well-being' Dr. Olsson says.

Backing all of this was the necessary legislation and regulatory powers and also having a sufficient flow of good science to inform the management process constantly. The study underscores the particular importance of integrating good science with good policy.

The report concludes that laws alone cannot bring about the changes necessary to protect the world's ocean ecosystems – good science and public understanding and support are also vital.

'In contrast to the GBR case, marine zoning in some countries has been severely constrained because of poverty, inflexible institutions, lack of public support, difficulties developing acceptable legislation, and failures to achieve desired results even after zoning is established. These are the critical barriers that we must urgently address and overcome' Professor Hughes said.

'Understanding successes and failures in marine governance systems is a first step in improving their adaptive capacity to secure ecosystem services in the face of uncertainty and rapid change,' Prof. Folke says.

One of the most visible and controversial initiatives under the new regime was to extend the area closed to all forms of fishing from 6 to 33 per cent of the total reef area – creating the largest no-take zone in the world. - ARC Centre of Excellence Coral Reef Studies ©

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SCIENCE • POLICY • ENGAGEMENT

New NOAA coral bleaching prediction system calls for low level of coral bleaching in Caribbean this year

July 18, 2008

More severe bleaching expected in the Northwestern Hawaiian Islands

A new NOAA coral bleaching prediction system indicates that there will be some bleaching in the Caribbean later this year, but the event will probably not be severe. NOAA issued the first-ever seasonal coral bleaching outlook this week at the 11th International Coral Reef Symposium in Ft. Lauderdale, Fla.

The system also suggests that there is a risk of widespread bleaching in the Northwestern Hawaiian Islands in August, but little bleaching elsewhere during the northern hemisphere summer.

"The ability to predict coral bleaching events and provide advance warning is critically important to sustaining healthy reefs," said Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force. "When coral reef managers and reef users are alerted, they can mobilize monitoring efforts, develop response strategies, and educate reef users and the public on coral bleaching and possible effects on reef resources."

The new prediction system uses NOAA experimental sea surface temperature forecasts to develop maps of anticipated coral bleaching severity during the upcoming bleaching season (August to October). While NOAA's Coral Reef Watch Program uses satellite sea surface temperature data to alert managers and scientists around the world of the risk of coral bleaching, the new prediction system includes longer range temperature forecasts up to three-months.

Coral bleaching is associated with a variety of stresses, especially increased ocean temperatures. This causes the coral to expel symbiotic micro-algae living in their tissues — algae that provide corals with food. Losing their algae leaves coral tissues devoid of color, and thus they appear bleached. Prolonged coral bleaching of over a week can lead to coral death and the loss of coral reef habitats for a range of marine life.

A major coral bleaching event occurred in the Caribbean in 2005, resulting in significant coral death in much of the region.

"As global temperatures continue to climb, predicting coral bleaching becomes even more critical," said C. Mark Eakin, Ph.D., coordinator of NOAA's Coral Reef Watch Program. "Our goal is to issue bleaching forecasts for coral reefs worldwide."

The new system was developed by scientists with NOAA's Coral Reef Watch in Silver Spring, MD and NOAA's Earth System Research Laboratory in Boulder, Colo., with funding from the NOAA Climate Program Office's Sectoral Applications Research Program and NOAA's Coral Reef Conservation Program.

The National Oceanic and Atmospheric Administration, an agency of the U.S. Commerce Department, is dedicated to enhancing economic security and national safety through the prediction and research of weather and climate-related events and information service delivery for transportation, and by providing environmental stewardship of our nation's coastal and marine resources. Through the emerging Global Earth Observation System of Systems (GEOSS), NOAA is working with its federal partners, more than 70 countries and the European Commission to develop a global monitoring network that is as integrated as the planet it observes, predicts and protects.

Source: NOAA

SeaWeb Launches Coral News Portal

Posted by Rick MacPherson

July 18, 2008

SeaWeb, the ocean science and conservation news and information dissemination folks, have used the International Coral Reef Symposium to launch Coral Reef News: a new web portal dedicated to coral reefs. Take a coral reef blog (like Malaria, Bedbugs, Sea Lice and Sunsets), add a discussion board (like the one we just ditched from CORAL's website since it had poor ROI), mix in a news aggregator (like the Coral Reef Alliance coral news page), and sprinkle with an image bank (like the Coral reef Alliance coral photo bank)... that's sort of the idea here.

My first take? I think it's a great idea to consolidate coral news in one place. But I hope the writing peps-up a bit. The purpose statement on the homepage states that SeaWeb aims "to bring you news of the latest developments in coral reef conservation and research in a snappy, easily accessible way." It's not there yet. It's a tad on the dry side. Especially a lot of the coverage of ICRS. When it's not coming off like an advertisement, it's bogged down in minutia (Does anyone really need verbatim transcripts of discussions?).

But it's just getting started. And like I said, I hope it flourishes.

Star Bulletin .com

Critical Condition

More help urged for isle reef systems

By Helen Altonn

July 20, 2008

COURTESY NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
The shores of Kanapou Beach, Kahoolawe, top, are strewn with marine debris.

More and larger marine conservation areas and stronger enforcement of fishing regulations are needed to protect Hawaii's endangered coral reefs and fish populations, scientists say.

The state's 11 Marine Life Conservation Districts are effective in protecting marine ecosystems, said Alan Friedlander, fisheries ecologist at the Oceanic Institute and the National Oceanic and Atmospheric Administration.

But they encompass less than 1 percent of the total reef area of the main Hawaiian islands, according to a recent report.

The number and size of marine conservation areas should be increased, said Friedlander and Eric Brown, National Park Service marine ecologist for Kalaupapa National Historical Park on Molokai.

They recommend building flexibility into the system through traditional community-based management and developing a more holistic ecosystem approach through comprehensive ocean zoning.

While Hawaii's coral reefs aren't as bad off as those in the Caribbean and some other areas, they face increasing stress from human and environmental impacts, the researchers said.

Among them, Brown cited: increased ocean temperatures and acidity, sea level rise, marine debris, water pollution, coastal development, tourism, alien marine species, overfishing and the aquarium trade.

A NOAA Biogeography and Oceanic Institute study of 55 reef species in the main Hawaiian islands, compared with the Northwestern Hawaiian Islands, shows 75 percent are in critical or depleted condition, Friedlander said, adding that 42 percent are in bad shape.

COURTESY NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
Above, sediment covers the reef at North Kohala, Big Island.

"We are at a very critical juncture and time is of the essence," he said. "We see what's happening in other places. Some of it is irreparable in our lifetime."

Added Brown: "Based on current climate (warming) projections, we have about 10 years to turn things around."

Asked for comment, Laura Thielen, state Board of Land and Natural Resources chairwoman, said opinions differ in the fishing community about whether more conservation protection is needed but she "hears consensus" that more enforcement is needed of existing regulations.

"And from the department's perspective, despite the fact that our reefs may not be as bad as the Caribbean, we need to act aggressively to make sure they don't degrade to that level," she emphasized. "Without good conservation, management and enforcement, they are likely to degrade."

Thielen said the Aquatic Resources Division has drafted rules for an herbivore protection area that will be tested on Maui to increase fish and urchin populations that eat algae on the reef. The Super Sucker (a huge vacuum) is being used to remove alien algae from the reef in Kaneohe Bay to help urchins and other animals, she said.

The Natural Areas Reserve Commission also is looking at more land and water reserves, she said.

"We need to manage more effectively and marine protected areas is only one effort," Thielen added. "We would like to make sure ocean recreation users' activities don't have negative impacts on reefs. We want to increase outreach education for people to be good stewards and increase enforcement of regulations as well."

Friedlander and Brown are among authors of a report on "The State of Coral Reef Ecosystems of the Main Hawaiian Islands." It was part of a report on the state of national and Pacific coral reef systems issued at an international coral reef symposium last week in Fort Lauderdale, Fla. The marine ecosystems are vital to the state's $800 million-a-year marine tourism industry, the new report points out. They have a direct economic value estimated at about $400 million a year, Brown said.

"More than anywhere else around, people in Hawaii rely on the reefs," Friedlander said.

The New Nation
Bangladesh's Independent News Source

Coral reefs in the Philippines 'slowly dying'

Henrylito D. Tacio

July 21, 2008

Nearly all of the ecologically-fragile coral reefs in the Philippines are under severe threat from economic development and climate change.

This is according to an update circulated by the Southeast Asian Centre of Excellence (SEA CoE) during the 11th International Coral Reef Symposium held here.

The Philippines is part of the so-called "coral triangle," which spans eastern Indonesia, parts of Malaysia, Papua New Guinea, Timor Leste and the Solomon Islands. It covers an area that is equivalent to half of the entire United States.

Although there are 1,000 marine protected areas (MPAs) within the country, only 20 percent are functioning, the update said. MPAs are carefully selected areas where human development an d exploitation of natural resources are regulated to protect species and habitats. In the Philippines, coral reefs are important economic assets, contributing more than US$1 billion annually to the economy.

"Many local, coastal communities do not understand or know what a coral reef actually is, how its ecosystem interacts with them, and why it is so important for their villages to preserve and conserve it," SEA CoE said in a statement.

Unknowingly, coral reefs - touted to be the tropical rainforest of the sea - attract a diverse array of organisms in the ocean. They provide a source of food and shelter for a large variety of species including fish, shellfish, fungi, sponges, sea anemones, sea urchins, turtles and snails.

A single reef can support as many as 3,000 species of marine life. As fishing grounds, they are thought to be 10 to 100 times as productive per unit area as the open sea. In the Philippines, an estimated 10-15 per cent of the total fisheries come from coral reefs.

Not only coral reefs serve as home to marine fish species, they also supply compounds for medicines. The Aids drug AZT is based on chemicals extracted from a reef sponge while more than half of all new cancer drug research focuses on marine organisms.

Unfortunately, these beautiful coral reefs are now at serious risk from degradation. According to scientists, 70 percent of the world's coral reefs may be lost by 2050. In the Philippines, coral reefs have been slowly dying over the past 30 years.

The World Atlas of Coral Reefs, compiled by the United Nations Environment Program (UNEP), reported that 97 percent of reefs in the Philippines are under threat from destructive fishing techniques, including cyanide poisoning, over-fishing, or from deforestation and urbanization that result in harmful sediment spilling into the sea.

Last year, Reef Check, an international organization assessing the health of reefs in 82 countries, stated that only five percent of the country's coral reefs are in "excellent condition." These are the Tubbataha Reef Marine Park in Palawan, Apo Island in Negros Oriental, Apo Reef in Puerto Galera, Mindoro, and Verde Island Passage off Batangas.

About 80-90 per cent of the incomes of small island communities come from fisheries. "Coral reef fish yields range from 20 to 25 metric tons per square kilometer per year for healthy reefs," said Angel C. Alcala, former environment secretary.

Alcala is known for his work in Apo Island, one of the world-renowned community-run fish sanctuaries in the country. It even earned him the prestigious Ramon Magsaysay Award.

Rapid population growth and the increasing human pressure on coastal resources have also resulted in the massive degradation of the coral reefs. Robert Ginsburg, a specialist on coral reefs working with the Ro senstiel School of Marine and Atmospheric Science at the University of Miami, said human beings have a lot to do with the rapid destruction of reefs. "In areas where people are using the reefs or where there is a large population, there are significant declines in coral reefs," he pointed out.

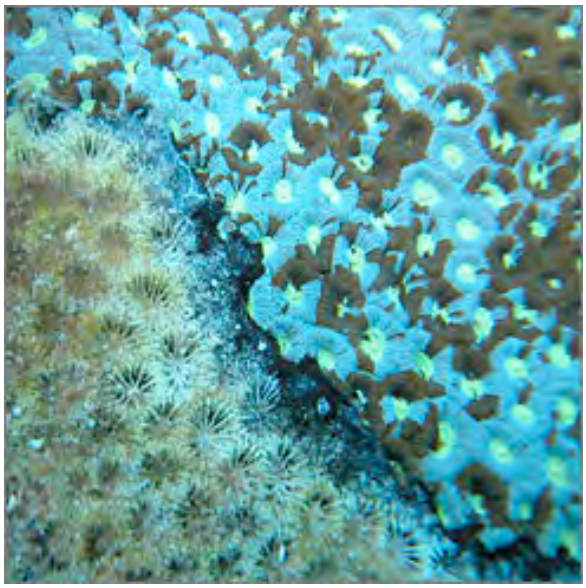
"Life in the Philippines is never far from the sea," wrote Joan Castro and Leona D'Agnes in a new report. "Every Filipino lives within 45 miles of the coast, and every day, more than 4,500 new residents are born."

Estimates show that if the present rapid population growth and declining trend in fish production continue, only 10 kilograms of fish will be available per Filipino per year by 2010, as opposed to 28.5 kilograms per year in 2003.

Rough seas: One-third of coral reef species face extinction

By Dan Vergano

July 21, 2008



Black band disease progressing across a colony of Favia speciosa at the Great Barrier Reef, Australia.

"I'd like to be

under the sea,

in an octopus's garden

in the shade."

Or so the Beatles put it back in the good ole' days, before things got really rough in Neptune's realm.

Amid a host of problems for the world's oceans, last week brought a reminder that coral reefs, the sentinel species for measuring the health of the seas, are taking a beating. One-third of all coral reef species face extinction worldwide, reports the latest study, released by Science magazine, with more species looking threatened.

GALLERY:Changes in coral reefs

"Whether corals actually go extinct this century will depend on the continued severity of climate change, the extent of other environmental disturbances, and the ability of corals to adapt," say the study authors, led by Kent Carpenter of Old Dominion University in Norfolk, Va. Coral extinctions "will threaten the geologic structure of reefs and their coastal protection function, and have huge economic effects on food security for hundreds of millions of people dependent on reef fish," concludes the study.

The news comes with the closing of the 11th International Coral Reef Symposium in Fort Lauderdale, a worldwide gathering of coral experts that takes place every four years. Not much of the news from the meeting was good:

•Coral diseases, including cancer-like growths in Hawaiian and Samoan reefs, are on the increase in the Caribbean, Pacific and Indian Oceans, according to Hawaii Institute of Marine Biology research.

•African dust linked to Caribbean coral disease contains six pesticides dangerous to humans as well as the reefs, reported U.S. Geological Survey scientists.

•Tropical islands such as Fiji, the Marianas and American Samoa have reported less than half of the fish caught from reefs since 1950, according to a University of British Columbia project.

Nearly the only bright spot was a report of a newly-discovered reef off Brazil still teeming with marine life.

The U.S. National Oceanic and Atmospheric Administration kicked off the week by reporting that one-half of all shallow-water U.S. reefs were in fair or poor condition, with more headed away from healthy status in coming years. "Certainly the situation is just as bad or worse in most of the rest of the world," said NOAA's Mark Monaco in an interview.

In the Science study, researchers assessed the 845 coral-reef building species extant, and found enough data to estimate the extinction chances of 704 species. They found threats from global warming driving up sea temperatures and increasing the acidity of ocean waters. Higher temperatures can kill the algae that feed many coral, leading to "bleaching" of reefs, which in turn kills off most species of coral. Development also threatened reefs, bringing increased sewage, over fishing and dumps of fertilizer that poisoned coral. "Our results indicate that the extinction risk of corals has increased dramatically over the past decade," says the study.

Unable to move to cooler waters, slow-growing at only inches per century and at the mercy of humankind, corals face a lot of challenges, even without the latest threat, ocean acidification. Ocean acidification occurs because higher levels of atmospheric carbon dioxide, a greenhouse gas, results in more carbonic acid in sea water. More acid waters make it harder for coral to build their calcium carbonate shells.

At the coral reef symposium, scientists debated whether a "tipping point" where corals are unable to build any shells would take place at atmospheric carbon dioxide concentrations expected by 2040 under "business as usual" prediction of greenhouse gases. Malcolm McCulloch of the ARC Centre of Excellence for Coral Reef Studies and Australian National University reported that some corals seem to "amplify" the effects of acidification.

In February, the United Nations Environment Programme (UNEP) found that between global warming, pollution and overfishing, "at least three quarters of the globe's key fishing grounds may become seriously impacted," in coming decades. The same report, entitled "In Dead Water," suggested that at least 80% of coral reefs worldwide would suffer bleaching by 2080.

A big part of the problem, experts like Monaco suggest, is simply that people don't know anything about corals besides the simple observation that they are beautiful. "Many people don't even know coral reefs are living creatures," Monaco says. "Some people walk on them or drop anchors without even realizing the damage they are doing."

Coral reefs result from the work of little polyps, creatures only a few millimeters long, budded on top of one another. Over centuries, the shells of these creatures combine to form the exotic shapes of coral reefs. Tiny differences in the anatomy of each polyp species affect the shape of their shells and produce the exotic shapes of each reef.

Besides their beauty, reefs shelter the shores from storms, an effect observed in the 2005 Indian Ocean tsunami, and shelter a wide diversity of young fish, serving as the playgrounds of the seas. "They are tremendously valuable, for tourism, fisheries and other economic benefits," says NOAA's Jenny Waddell.

THE TIMES OF INDIA

Deep Impact

July 22, 2008

Life under sea is turning out to be not so cool. Ocean waters are warming with climate change. Thanks to that, as well as increase in dumping of toxic waste, hundreds of species of sea animals face extinction, according to a study conducted by the International Union for the Conservation of Nature(IUCN) and Conservation International.

At the recently held International Coral Reef Symposium at Fort Lauderdale, US, scientists expressed concern over rising acidity in oceans that adversely impacts coral reefs and other shell-forming sea life. Coral reefs are habitats for a quarter of all marine species. At least 231 species of the atoll-building polyps could be classified as critically endangered under IUCN's red list of endangered species because of osteoporosis. Visible in bleached and weakened reefs, the degradation is due to an increase in ocean water acidity that kills off reef algae and deprives reefs of calcium.

The death of a coral reef would jeopardise the survival of marine organisms that depend on the reef for sustenance. With their food in short supply, fisheries would get affected. As rainforests of the oceans, coral reefs are pivotal to the health of under-water ecosystems; their degradation would adversely impact life under water.

And far from holding out hope as a giant carbon sink where humans can sequester dirty carbon dioxide emissions, acidic oceans saturated with CO2 might, in a few hundred years, become a net source of CO2 emissions as they might release the gas into the atmosphere much like vehicles do on land.

Coral reefs, like mangroves, act as buffers against erosion in coastal areas, protecting human habitation and livelihoods. They are a rich source of seafood. Pretty reefs are a major tourist attraction, enhancing local economic activity. The ability of the oceans to maintain their chemical equilibrium depends on the smooth orchestration of hundreds of thousands of factors. However, studies show that the major contributor to global warming, carbon dioxide emissions, is turning the waters acidic at a rate faster than the oceans' natural buffering system works to maintain its chemical balance.

Latticed steel structures are being lowered into flagging reef habitats to revive them. Nothing, however, can be more effective at saving reefs than prevention. That can be done by reducing carbon footprints, primarily by changing energy use and opting for less polluting vehicles as well as releasing less sewage and effluents into the sea.

Canada's leading independent online newsmagazine

Coral reefs collapsing in more acid oceans

by Stephen Leahy for InterPress Service

July 22, 2008

Climate change is making the ocean too warm and too acidic for most corals species to survive.

FORT LAUDERDALE, US, Jul 8 (IPS) — Coral reefs need to be put on "life support" if they are to survive climate change, but their ultimate survival is dependant on major reductions in fossil fuel emissions, say experts.

"We're going to hear lots of bad news about corals in the next few decades," Rich Aronson, president of the International Society for Reef Studies, told 3,000 scientists, conservationists and policy makers at the 11th International Coral Reef Symposium (ICRS) in Fort Lauderdale, Florida, Monday.

"This is a pivotal moment. We must act strongly and immediately if we are to have coral reefs as we know them."

Climate change is making the ocean too warm and too acidic for most corals species to survive beyond the year 2050, many marine scientists now believe.

"The situation is serious to the point of desperation," Aronson told IPS in an interview.

Past and present carbon emissions from burning fossil fuels have already altered the oceans, leading to declines in corals in many areas. This trend will continue for decades even if it were possible to eliminate all emissions today, scientists say. Current emissions are running at eight to nine gigatonnes a year and rising, resulting in dramatically altered oceans where few of the current coral species will be able to survive.

"This is a pivotal moment. We must act strongly and immediately if we are to have coral reefs as we know them," Aronson said.

The action he and others urge involves major reductions in carbon emissions, protecting reefs from over fishing, pollution and other threats and helping corals be more resilient

so they can better withstand changing conditions. The latter will act as a kind of life support system until the world community manages to sharply reduce carbon emissions. That may give corals the time they need to adapt to a changed ocean. Currently the rate of change is far too rapid for species to adapt, experts here say.

Coral reefs support about 25 to 33 percent of the oceans' living creatures. Some one billion people depend directly and indirectly on reefs for their livelihoods. Sea birds and many species of fish would be affected by the loss of reefs.

Surprisingly, most scientists pegged over fishing as the biggest threat to corals just four years ago at the last International Coral Reef Symposium, Joan Kleypas of the National Centre for Atmospheric Research in Boulder, Colorado told the symposium. In the intervening four years, a great deal of research has been completed on the impacts of climate change on the oceans, and that has now convinced nearly all experts that it is by far the biggest threat to oceans.

Most corals begin to die when ocean temperatures increase by more than 2.0 degrees C and that is likely to happen under nearly all future carbon emission scenarios before 2100. Detailed computer models show that all corals will suffer severe bleaching in one to five years. If emissions decline rapidly in the next decade and if corals are more resilient to ocean warming, then there is hope, according to recent research.

There is some evidence that some corals can survive some warming of ocean temperatures, but there is no solution for acidification, says Klepas.

The oceans naturally absorb carbon from the atmosphere but because of human emissions they are absorbing more and more. This additional carbon has altered the oceans' chemistry, making them 25 to 30 percent more acidic. Each day, the oceans absorb 30 million tonnes of CO2, gradually and inevitably increasing their acidity, and leaving less calcium carbonate in the water for corals and shell-form species like phytoplankton to grow or maintain their skeletons.

"Acidification affects all marine species, not just corals," Kleypas noted. However, little research has been done to understand specifically what those effects may be.

Kleypas admits it looks impossible to save corals, but she remains hopeful. "We need to keep CO2 levels at a reasonable rate and corals may be okay," she said.

There is enough information about how to reduce carbon emissions and even a growing realisation that such reduction may not be costly in economic terms, Aronson said. Protecting reefs from other threats like over fishing and pollution is not difficult, but will require political leadership. Saving corals needs to be an international effort spearheaded by the United Nations.

"We (scientists) have to be pragmatic and we have to be smart about politics," Aronson said. "All of us — scientists, conservationists and the public — have to rise up and fight to protect reefs."

Stephen Leahy is an environmental journalist based in Brookline, Ontario. His writing has been published in dozens of publications around the world including New Scientist, The London Sunday Times, Maclean's Magazine, The Toronto Star, Wired News, Audubon, BBC Wildlife, and Canadian Geographic.

For the past few years he has been the science and environment correspondent for Inter Press Service News Agency (IPS), a wire service headquartered in Rome that covers global issues, and its Latin American affiliate, Tierramerica, located in Mexico City.

This article previously appeared on the InterPress Service wire.

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Coral Reef Parks Featured At International Symposium

July 22, 2008

National Park Service scientists and managers converged on the eleventh International Coral Reef Symposium (ICRS) in Fort Lauderdale, Florida from July 7th to July 11th to share their experiences and knowledge of coral reef ecosystem conservation, education and management strategies with more than 3,500 national and international attendees.

The NPS Natural Resource Program Center also launched a colorful web portal, Coral Reefs in the National Parks, at the ICRS in celebration of the 2008 International Year of the Reef. And NBC Nightly News aired a story from Biscayne National Park entitled Climate Change Threatens Coral Reefs appeared on Friday, July 11th.

Links to all of these can be found below.

Threats to coral reefs have never been greater due to ever increasing fishing pressures, rising ocean temperatures, ocean acidification, coastal development and physical impacts, as reported at the ICRS.

Staff from the coral reef parks and South Florida/Caribbean and Pacific Islands inventory and monitoring networks reported on their efforts to find science-based solutions to these problems through a total of ten symposium talks and poster presentations. NPS programs benefited from evaluating and disseminating their findings with resource managers and scientists, including, among other topics:

- Catastrophic losses in coral cover in the U.S. Virgin Islands following the 2005 – 2006 bleaching and disease event;
- Development and implementation of a marine monitoring program in the National Park Service's Pacific Island Network (PACN);
- Stony coral status and trends in Dry Tortugas National Park from 1975 to 2007; and
- Natural resource damage assessment and restoration in the National Park Service: coral reef vessel grounding case studies in Biscayne National Park

Two NPS booths attracted throngs of visitors in the ICRS exhibit hall, where staff from Biscayne National Park helped to raise awareness of the value and importance of coral reefs in the parks and threats to their sustainability and to motivate people to take action to protect them.

- For more information on ICRS, go to http://www.nova.edu/ncri/11icrs/
- To reach the NPS web page on coral reefs, click on www.nature.nps.gov/water/coralreefs/
- The NBC News story on coral reefs can be seen at http://www.msnbc.msn.com/id/21134540/vp/25642862#25642862

guardian.co.uk

Coral grief

Tim Radford

July 24, 2008

Jacques Cousteau was a pioneer in the study of marine biology, but new research shows the ocean life he explored could be dead within a few years

Snorkeling on a coral reef in the Red Sea. Photograph: Getty

A climatologist who is trying to explain why even the most immediate and drastic steps to reduce carbon dioxide emissions may not save the coral reefs, has embarked on a metaphor for climate change.

"The climate is like this big ship, right? We are all on this big ship and the problem is once you hit the brakes it takes a long time for the ship to actually slow down and stop," says Simon Donner of the University of British Columbia. "In our case the ship is the Titanic and we are going to hit the iceberg. It is going to be almost impossible for us not to hit the iceberg at this point. What we need to do is everything we can to put the brakes on, to slow the ship down and – to hope for the corals to help us – move the iceberg a little bit. The time for emission reductions isn't so much now, it was 20 years ago."

Modern marine biology is roughly 50 years old and comfortable with the language of the media, perhaps because it flowered from a happy mix of adventure and show business. Before about 1950, marine biology was prosecuted by men in laboratories who studied the damaged and incomplete contents of deepwater trawls or made guesses about the migrations of pelagic fish or paddled around rock pools between the tides. Then a French naval officer called Jacques Yves-Cousteau designed the aqualung, hired a ship called the Calypso and recruited a young cinematographer called Louis Malle to help him make a 1956 documentary called The Silent World, and marine biology began looking up, in the metaphorical sense.

For the first time, ichthyologists could swim with the fishes; they could go with the flow, they could mingle with the millions of other creatures that colonise the huge high-rise submarine apartment blocks of coral reef, they could follow the tides and go with the turtles and sharks into tropical estuaries and mangrove forests, they could stay put with the crustaceans or spout with the cetaceans. The world was their oyster, and they could have a whale of a time.

Because of Cousteau and his contemporaries – among them the best-selling US writer Rachel Carson, for instance, and the television film-maker Hans Hass – ocean science underwent (to exploit another yet irresistible cliché) a sea change. For the first time ever, researchers could take a sustained look at a fraction of the intricate ecology of the blue planet.

More than 70 per cent of the surface area of the Earth is covered by saltwater. Terrestrial animals occupy only the first few metres above and below the topsoil. They may colonise forest canopies, soar in thermal currents, or burrow deep into the mud, but most, like the biologists that study them, are essentially flatlanders. Sea creatures conversely have the run of one huge open-plan living space, from the sunlit surface of the Sargasso Sea to the abyssal plains of the Atlantic or the 11,000 metre depths of the Marianas Trench in the Pacific, spanning the planet from the North Pole to the Antarctic coastline. Marine biologists had a new world to explore, new stories to tell.

Earlier this month, about 3,000 of them gathered in Fort Lauderdale, Florida for the 11th international coral reef symposium. They included Australians at ease in Perpignan, Germans at home in Queensland, Americans who knocked around eastern coasts of Africa. They were all ages, but more than half were young and many of them were women. They spoke matter-of-factly of faraway places – of Pago Pago and Palau and the Flower Garden, of the Marianas and Chagos and Key Biscayne, of the Great Barrier and Okinawa and Mozambique. They were at home in the world's oldest environment, but theirs was in effect the youngest science. And many of them understood two things very clearly: that there was no point amassing their knowledge unless they could share it, and that there was no point in having something important to say unless they said it in words that everybody could understand.

One of the great messages of the conference was that as sea temperatures warm, corals bleach. That is, the little polyps eject the algae with which they live in an intricate and mutually helpful partnership. It isn't the same as death – bleaching is a survival mechanism – but it weakens the corals. The fear is that such events will happen more and more often in future. Douglas Fenner, a biologist working at the department of marine and wildlife resources in American Samoa told the conference that the future had already arrived. For the past five years, he had been watching corals bleach every summer in the fringing reefs off Pago Pago.

"There is a little bit of a caveat: this is happening in restricted pools where the water gets hotter than the open ocean. It is not happening on the open ocean reefs. But it is happening, and it is a window into the future. And it is not a particularly good view that I see. There are corals – not all, but some of them – that every summer are very close to death. There is essentially no step between where they are at, and dying. In one section of the pool, they spend almost the entire year bleaching. There is a very short period when they recover, just before the next summer's bleaching," he says. "A very slight increase in temperature, and death will start overwhelming the growth."

One of the other great messages of the conference was that as carbon dioxide levels rose, the seas would become increasingly acidic, and under such circumstances, corals would find it harder and harder to make the skeletons that become, quite literally, the backbone of all reefs. All marine biologists can do is warn everybody, and try to persuade governments to protect reefs from other human exploitation, to give them a better chance of survival. Reefs are the habitat for around one quarter of all marine species. One third of all reef building corals could be at some risk of extinction already. Five studies had already reported a slowing in the growth rate of massive corals, said Joan Kleypas of the US National Centre for Atmospheric Research. She faces a prospect that Cousteau and Hans Hass could never have imagined: a day when the corals have died, and the fish that depend on them have gone.

She calls it a "there-goes-the-neighbourhood situation," and "osteoporosis of the reef". She is addressing her fellow scientists, but they understand the peculiar irony of this kind of research, that you can discover something astounding, fashioned over millions of years only a few metres below the enigmatic surface of the ocean, and discover at the same time that in a few decades it could all be gone; that Cousteau's silent world may indeed soon become silent forever. It's a moment for straight talking, in terse, uncompromising language, to as many people as possible.

Why Reefs Matter

Region's reefs in severe decline

July 24, 2008

A hawkfish explores branching coral. [Supplied, Chuck Savall]

The beautiful underwater landscape of a healthy coral reef is an unforgettable sight. The colourful gardens of delicate fronds, ridged boulders and broad dinner plates are home to thousands of fish, crabs and other marine life, many of them just as brilliantly coloured.

But as the earth's climate changes, the oceans are warming up and becoming more acidic. Cities and towns pump sewage and industrial pollution into the seas, and soil from land-clearing and erosion is also going into the ocean. As a result, the world's reefs are slowly dying, with huge implications for the estimated 400 million people worldwide who rely on coral reefs for their food, income, and homes.

Every four years, the latest reef research is presented at the International Coral Reef Symposium. At this year's meeting in Florida, nearly 3,000 scientists and conservationists met to look at what's happening to the world's reefs, and how they might be saved from extinction. Radio Australia's Corinne Podger was there

Why Reefs Matter

Hundreds of coral species face extinction

July 24, 2008

A landmark global survey of coral reefs released this month found a third of all coral species are at risk of extinction.

Carried out by an international team of scientists, the survey was published in the prestigious journal, Science and announced at the recent International Coral Reef Symposium in Florida.

Spotted starfish on hard pink coral. [Supplied, Chuck Savall]

As Corinne Podger reports, the findings mean that coral reefs have joined the unenviable ranks of life forms most likely to vanish permanently from the earth.

The survey took in virtually every coral reef on the planet, from Indonesia to Kenya, Hawaii to eastern Australia. It found that all over the world, coral reefs are dying off at a significant rate - the victims of a brutal combination of climate change, ocean acidification, and pollution from run-off and human activity.

One of the lead authors, Dr Greta Aeby, of the Hawaii Institute of Marine Biology in Honolulu, says the team of scientists were horrified by what they discovered.

"Using information about population sizes, geographic range and also the susceptibility of these different coral species to bleaching, disease, or predation by crown of thorns, we wanted to determine how many species were at risk of being lost, and from our study we found that approximately one third of our coral species are at risk," she said.

"This makes corals the most threatened group of animals on this earth, second only to frogs and related amphibians for risk of extinction."

Dr Aeby says the progressive loss of coral reefs also threatens the survival of the 25 percent of all marine life which relies on reefs for food and shelter.

"Corals make up the very framework of the coral reef ecosystem. If these corals are lost, then the entire ecosystem is at risk of collapse, and so we can expect not only to lose coral species, but also the fish and crabs and other little critters that depend on these corals for food and shelter," she said.

Even the most remote coral reef systems, located in the midst of oceans thousands of miles from human settlements, are being affected by human activity to some extent. However the survey found the region with the highest proportion of vulnerable species is the so-called "Coral Triangle", which covers waters off Indonesia, Malaysia, the Philippines, Papua New Guinea, the Solomon Islands and East Timor.

Conservation International, one of the agencies that commissioned the study, says it has profound implications for millions of people who derive their food and income from reef systems.

Red Gorgonian Coral [Supplied, Juan Cuetos, OCEANIA]

"We all need to do our part institutionally and individually to reduce carbon emissions but there

is a consensus now that no matter what we do, we are going to see some impacts that are simply not reversible at this point," said Roger McManus, Vice-President of Marine Programs at Conservation International.

Another researcher, Kenyan-based scientist David Obura, says that while some of the damage being done to reef systems is slow and steady, such as increasing ocean acidity due to carbon dioxide being taken up by the planet's oceans. Other factors, such as El Ninos and severe weather events, do short, sharp bursts of damage, further reducing the ability of reef systems to survive.

Dr Obura says there is evidence that coral reefs can recover from short-term events of this kind, if they don't have to contend with pollution from sewage and soil run-off. He says this information is being used to help scientists make better choices in where to locate Marine Protected Areas (MPAs) and in how these sites are managed.

"We are finding that reefs can recover quite well (from these short-term events)," he said.

"These generally tend to be in fairly remote areas, where water quality is very good, where there's low fishing impact and things like that.

"Some species are also more tolerant and resilient than others, but it depends a lot on the quality of the environment, and the quality of different places, and so we try to find the places that have high resilience and maximise the benefits there."

However Dr Obura says that when and where coral recovery does take place, some species do better than others, so the way a reef will look, and the species it can support, may be very different to its original state.

Given the importance of reef systems both to coastal communities around the world, and to science, the researchers involved in the study have urged governments to take urgent action to reduce greenhouse gas emissions.

"The results of the GMSA will help ensure that we highlight the urgency and need to improve stewardship of the ocean," said Roger McManus of Conservation International.

"We have to adjust to a new world in which we have to manage for change. We cannot manage to conserve or preserve the past or the present, we also have to be concerned about what's going to happen in the future, and how we're going manage and conserve biodiversity and productivity of the ocean in that light."

These programs were made possible thanks to a Media Fellowship from the non-profit ocean conservation group, SeaWeb. Thanks also to the scientists at the International Coral Reef Symposium 2008 who shared their research and insights.

Why Reefs Matter

Can corals adapt to global warming?

July 24, 2008

The latest research on the effects of climate change on coral reefs suggests rising temperatures and changes in ocean chemistry could kill off many of the world's reefs within 50 years.

In a series of presentations at the recent International Coral Reef Symposium in the United States, scientists from Australia and the US rejected previous reports that reef systems might adapt to the amount of carbon dioxide being absorbed by the world's oceans.

Bleached corals on the south of the Great Barrier Reef [Supplied, Ove Hoegh-Guldberg]

They say CO2 levels are rapidly approaching a critical limit, beyond which reef systems simply won't survive, as Corinne Podger reports.

Erosion and bleaching takes its toll on a reef. [Supplied, Ove Hoegh-Guldberg]

For decades, the idea that oceans might absorb some of the carbon dioxide associated with greenhouse gas emissions was seen as a bonus. But two years ago, it emerged the extra CO2 was making the world's oceans more acidic, causing corals to crumble and deteriorate, and impeding new growth.

Now, an Australian scientist believes he's identified the point of no return. Professor Ove Hoegh-Guldberg is the director of the Centre for Marine Studies at the University of Queensland. He says 500 parts per million will reached within half a century - and when that happens, most reefs will die.

"The rise of carbon dioxide in the atmosphere has two consequences for coral reefs. The first is, through its effect on the global temperature, causing essentially thermal stress, and this manifests itself through mass bleaching events," he says.

"The second problem is that CO2 going into the atmosphere also goes into the ocean in increasing amounts, and that's causing an acidification of the oceans, and the effect of that is that it drops the concentration of something called carbonate - which happens to be the crucial molecular building block for the limestone skeletons that corals put down."

At the same time as changing ocean chemistry, greenhouse gases are warming the oceans up, contributing to mass bleaching in the Indo-Pacific in 1998, and the Caribbean two years ago. While reefs can recover to some extent, these events are becoming more frequent, giving reefs little chance of fighting back, according to Mark Eakin, of Coral Reef Watch in the US.

"These are severe events that caused the bleaching of a lot of corals and more importantly the death of a lot of corals," Dr Eakin says.

"When the temperatures get too high, the relationship between the plant and animal breaks down and the corals expel the algae that live in their tissues. That results in the

coral starting to starve to death, and if it's a short event, they can recover the algae. But if the temperature stays warm for too long, then the corals are going to die."

Professor Hoegh-Guldberg says some scientists had hoped that coral reefs could adapt to the earth's changing climate, but says evolution can't keep up with rapid shifts in ocean acidity and temperature.

"What we're planning to inflict on the earth is about 100 to 1,000 times faster than the Ice Age transitions that transformed the entire planet," he says.

"Evolution takes time, and what we are seeing is a mismatch between the rate at which evolution can adapt to change, and the rate of change. Coral reefs can't keep up, and we're seeing an increased rate of coral degradation as a result."

Professor Hoegh-Guldberg says efforts to preserve coral reefs have been undermined by a lack of consensus on how much damage climate change is causing.

"I think it's very important that the scientific community puts out consensus statements, the best of which have come from the Intergovernmental Panel on Climate Change, which has released really clear statements.

"Often we see a sole voice that comes out and says 'I don't believe', and the media will pick that up and that will have as much coverage as perhaps the consensus of thousands of scientists.

"On this point, we've been seeing headlines saying coral reefs can adapt, but they've been based on almost no science - and our challenge is to come up with clear statements about where things lie."

Professor Hoegh-Guldberg says governments must act quickly to reduce greenhouse gas emissions, or even the world's best-managed coral reefs, such as Australia's Great Barrier Reef, will be irreparably damaged within a few decades. He warns that inaction will have a "disastrous" effect on the lives of around 400 million people who rely on reefs for their food and income.

"We can't take 375,000 square kilometres of the Great Barrier Reef and dust it with chemicals to somehow fix the acidity problem or somehow cool the water," he says.

"We've got to deal with the root cause of the problem, and that is emissions of CO2. Now, there is pain with this, but at the end of the day there's going to be less pain for people if we deal with it now, as opposed to not put the effort into controlling emissions and have really quite disastrous futures."

These programs were made possible thanks to a Media Fellowship from the non-profit ocean conservation group, SeaWeb. Thanks also to the scientists at the International Coral Reef Symposium 2008 who shared their research and insights.

Why Reefs Matter

Caught on film - the best approaches to saving reefs

July 24, 2008

Participants at the recent International Coral Reef Symposium agreed that a major challenge for reef conservationists is the sharing of effective techniques and practices.

If any reefs are to survive the impact of climate change, the symposium heard, they need as few other forms of stress as possible.

That means cutting back pollution from soil run-off and sewage, and for local communities to move away from destructive fishing methods like trawl nets, dynamite and poison.

Corinne Podger spoke to representatives from Pacific island NGOs, who're using video to share good ideas on reef management between countries separated by thousands of kilometres of ocean.

In addition to climate change, pollution poses a major threat to the world's reefs. [Supplied, Keoki Stender]

The Coral Reef Symposium heard many research papers showing clear links between involving local communities in reef management, and the health of coral reefs.

One organisation working to identify and share best practice is the Locally Managed Marine Area (LMMA) Network. It links communities in countries with coral reefs, including Pacific island states, and Asian countries like the Philippines.

Sharing information between these countries faces several challenges, including the vast distances between them, and poor access to facilities like the internet to research good methods being used elsewhere. The symposium also heard from many Pacific delegates, who say they have too few trained scientists and reef managers to utilise in designing marine protection programs.

The LMMA network has been working to overcome these various programs by filming local communities who've come up with novel and effective ways of looking after their coral reef, and then making DVDs which can be shown in other countries with similar challenges.

"We produced a video last year called "Lessons Learned", where we interviewed community members from several different countries who work with the network, speaking to community practitioners and leaders - to get their story in their own voice about the work they're doing at their marine sites," says Toni Parras, the LMMA spokeswoman.

"The DVD meant we could share lessons learned at one site, with the target audience for these videos being practitioners and leaders in other countries facing similar circumstances.

"They may tell us, 'well we're just fishermen, what can we possibly do to better our situation and manage our marine resources?', and then they hear these stories from people who are also 'just' fishers who were able to go through a community planning process, draw up a management plan - obviously with some outside assistance with technical elements and project planning, which is what the LMMA network provides.

"But the input is coming from the people who are carrying it out, so their experience really motivates and inspires communities in different places and countries altogether, who feel that if they can do it, we can do it."

Ms Parras says many traditional methods of looking after reefs are in danger of being lost, so LMMA is now working to produce new videos, particularly targeting Pacific youth.

"Traditionally there have been connections and practices with the sea in the Pacific, and they're losing that connection, so community leaders said they needed videos to show not only lessons learned but also traditional practices," she says.

"We're asking community leaders to relate traditional management techniques that perhaps have been revived or are coming back into play. Because youth especially are into this kind of technology, if they can see videos from on the ground showing traditional practices, maybe it will revive some of them and get them connected again."

A fishing line tangled in coral. [Supplied, Keoki Stender]

As part of activities for this year's International Year for Coral Reefs, the Secretariat for the Pacific Region Environment Program (SPREP) is also using video, with the idea of teaching children how to look after the reef systems they will inherit as adults.

"We organised a competition for the secondary schools of the region, and we asked them to select a reef and come up with an action plan to save it, including a budget and timeline," said Caroline Vieux, SPREP's coral reef management officer, who is based in Samoa.

"We had planned originally to fund the five best action plans but there were so many good ideas that we ended up funding 11 of them in various countries of the region."

"We have asked all of the winners to film the implementation of their plan, and we will put together a DVD from that and distribute it to Pacific schools, so children everywhere can see what was done by kids in New Caledonia, in Kiribati, in Solomon Islands. It's a great way of networking for the children because kids in New Caledonia do not know anything about what it looks like on other islands and what some of the other kids are doing."

Ms Vieux says she was particularly impressed by a reef management plan developed by children in Solomon Islands, which will help protect local reefs from the damaging effects of soil and sewage run-off.

"The children there are involved in planting corals and mangroves, and even putting in compost toilets, which shows they really understood the impact of land-based pollution on the ocean. At first you might not relate a compost toilet to a coral reef but sewage is a major problem, so the idea of better toilets was really impressive."

As well as using videos, SPREP gets Pacific islanders with effective ideas on reef management talking, through a system of community exchanges.

"A few months ago, the tribes of New Caledonia of the Northern Province visited the Fiji local managed marine area network, and they had a tour for 10 days, and it has been great for them, because they have gone back to New Caledonia knowing what to do, and really feeling they can do it," Ms Vieux said.

These programs were made possible thanks to a Media Fellowship from the non-profit ocean conservation group, SeaWeb. Thanks also to the scientists at the International Coral Reef Symposium 2008 who shared their research and insights.

Why Reefs Matter

Hidden overfishing threatens Pacific food security

July 24, 2008

A new study by the Canadian research organisation, The Sea Around Us, has found fish catches from Pacific island nations are vastly under-reported. The research was presented at the recent International Coral Reef Symposium in Florida, and covers half a century of fishing - from 1950 to 2004 - in 20 island nations.

The researchers say that in some cases, unreported catches by local fishing communities are nearly 20 times higher than the official statistics collected by governments and handed to the Food and Agricultural Organisation.

They say the findings have worrying implications for regional food security, as Corinne Podger reports.

[Supplied, Chuck Savall]

Small-scale fishing in the Pacific is an essential source of protein, and for that reason the FAO needs reliable annual reports on how many fish are caught in a given area, to know whether fish stocks are remaining steady or declining over time.

But these reports are expensive to prepare, and in developing countries they're often patchy. Researcher Dirk Zeller says that can lead to problems because the data sent by the FAO to to the United Nations and donor agencies regarding the state of food security in a particular country may be wrong.

"The FAO has no mandate to collect data itself. Its mandate is to accept reports from each member country, and report on that data, so the responsibility for the data's accuracy rests with member countries and the governments of member countries," Dr Zeller says.

"While most countries make a strong effort to report what they consider to be the catch by their own fisheries organisations, in most instances, this mandate is restricted to commercial fisheries and, as a result, economic activities that are not directly related to the commercial market get left out of the books."

As well as providing accurate information about the amount of fish being caught in the present, annual reports build up a reliable picture of how much fish has been caught in the past, enabling conservationists and food security experts to see if a particular species is being overfished, and to encourage that to be factored in to national policies on conservation and food supply.

Realising there were significant gaps in Pacific fish catch reports, the Canadian researchers pulled together evidence from global databases, fishing agreements and marine protected areas, to give a rough snapshot of 50 years of fishing in the Pacific.

They found vast under-reporting of catches. In the worst case of American Samoa, they found the real amount of fish and shellfish caught was 17 times higher than what had been reported.

They also found that many key species to the health of coral reefs, such as parrotfish which harvest superfluous algae which can otherwise suffocate a reef, were being overfished.

"Parrotfish, and other smaller reef fishes, are often only reported as mixed fish, or are never listed among the catch," says lead author Daniel Pauly.

"These are not what we call 'noble fish' - the fish that you report catching, which the guys usually do - but the small fish and little invertebrates caught by women and children, which is usually what goes into the cooking pot.

"Without this information, you can't have a clear appreciation of the importance that reef fish play in the rural economy of the countries of the South Pacific."

Spade fish on the reef. [Supplied, Chuck Savall]

The implications for food security become obvious, Dr Pauly says, by looking at fish conservation policies already in place in the Pacific. Many island policies emphasise conserving only those fish species for which there are reliable figures, such as tuna.

"The concentration in the South Pacific on tuna means that fisheries divisions will look only at tuna problems, and will not look at the production and the sustainability of reef fishes, which means these resources can be lost without anyone noticing," he says.

As they collected their data, the researchers identified a worrying downward fall in total fish catches across the Pacific region over the past half a century, which had not previously been recognised. Dr Pauly says the finding is of great concern.

"You can see that if reef fishes disappear and the food they represent is lost, there will be an enormous need for substitutions, in the form of imports," he says.

Dirk Zeller says Pacific governments need to allocate more of their national budgets towards getting a clearer picture of total local catches. Although it is expensive to do, it will be cheaper in the long run than being forced to import food if a key local species is fished out.

"Food security in the Pacific is already becoming an increasing problem, with climate change, rising sea levels, increasing temperatures, and more recently we've experienced a phenomenal increase in oil prices. This is impacting heavily on all imports to Pacific islands because shipping costs are going through the roof," he says.

"That's only going to increase, and so will the price of food. So being able to rely on local food sources becomes crucial for food security, and these countries need to know

their baseline of what they have and what they can utilise in order to develop sustainable management plans for the future."

These programs were made possible thanks to a Media Fellowship from the non-profit ocean conservation group, SeaWeb. My thanks also to the scientists at the International Coral Reef Symposium 2008 who shared their research and insights.

POWERBOAT-WORLD.COM

Coral decline to hit Rich and Poor

July 25, 2008

'The evidence suggests reef systems are becoming more brittle, as a result of bleaching, disease and the effects of acidifying water – and this means we are likely to see more moonscape-like areas where reefs once used to be.' ARC Centre of Excellence Coral Reef Studies ©

The gradual disintegration of the world's coral reefs under climate change will have significant impacts on food supplies, international tourism, water quality and the safety of coastal communities.

Marine researchers at the International Coral Research Symposium (ICRS) in Fort Lauderdale, Florida, this week are exploring the longer term consequences of widespread loss of corals due to global warming and ocean acidification.

Chair of the Climate Change session, Professor Ove Hoegh-Guldberg of the ARC Centre of Excellence for Coral Reef Studies and University of Queensland, says there is now convincing science coming through to indicate that reefs everywhere are in trouble.

'The evidence suggests reef systems are becoming more brittle, as a result of bleaching, disease and the effects of acidifying water – and this means we are likely to see more moonscape-like areas where reefs once used to be. This will be accompanied

by a switch from the spectacularly colourful fish that people normally associate with reefs to much fewer and plainer ones.'

The decline in reefs has importance for the 500 million humans, mainly in developing countries, who depend on coral reefs for food and/or their livelihoods, while tourism industries in both developed and developing countries are likely to suffer he said.

'The loss of reefs will also expose coastal communities, already facing rising sea levels, to a greater risk from storm surges and tsunamis – as reefs currently provide a protective barrier against these,' he says.

'This will be accompanied by murkier, less productive waters as water quality suffers.'

Professor Hoegh-Guldberg says researchers have found evidence that the rate at which coral reefs have been deteriorating and disappearing has accelerated in the last five years. 'For the past 30 years the loss has been between 1-2 per cent of the world's coral per year. The latest data suggests the rate is now around 2 per cent a year. This doesn't give us much time.'

Recent evidence that sea levels are rising at nearly twice the rate predicted by the Intergovernmental Panel on Climate Change (IPCC) also poses a risk to coral reefs.

'Healthy corals can keep up with these sorts of sea level rises – but some reefs which are damaged or weakened may be at risk of 'drowning' – being thrust into depths where they can no longer get the light they need for photosynthesis. All this aside, however, sea level on its own is not a major factor at this point.'

At the same time Prof. Hoegh-Guldberg says that emerging evidence indicates some corals have suffered a 20 per cent reduction in their growth rates, which researchers consider to be due to the rising acidification of sea water making it harder for them to build their chalky skeletons. 'This apparent drop in calcification is bound to be a real issue for discussion at the symposium,' he says.

Most disturbing of all were recent claims by some atmospheric researchers that the level of C02 has been underestimated, and may be closer to 410 parts per million, than to the 385 estimated by the IPCC.

'If we continue on the pathway that we are on right now, we get to levels where you are looking at the total loss of reef structures worldwide. Under those conditions you just don't have corals – no corals, and you also lose 50% of the fish and other species that live in and around corals,' he said.

'If we are already at 410ppm then we are facing a planetary emergency which should require urgent action to cap oil, gas and coal production worldwide immediately. We can't fool around with a situation that is rapidly spiraling out of control. We can't play with a situation that is so dangerous.'

'You might say – well, that is big. Cap oil, gas and coal? But with no other solutions in front of us, then it would be foolhardy and unethical for us not to consider these urgent actions,' he emphasized.

http://www.coralcoe.org.au/

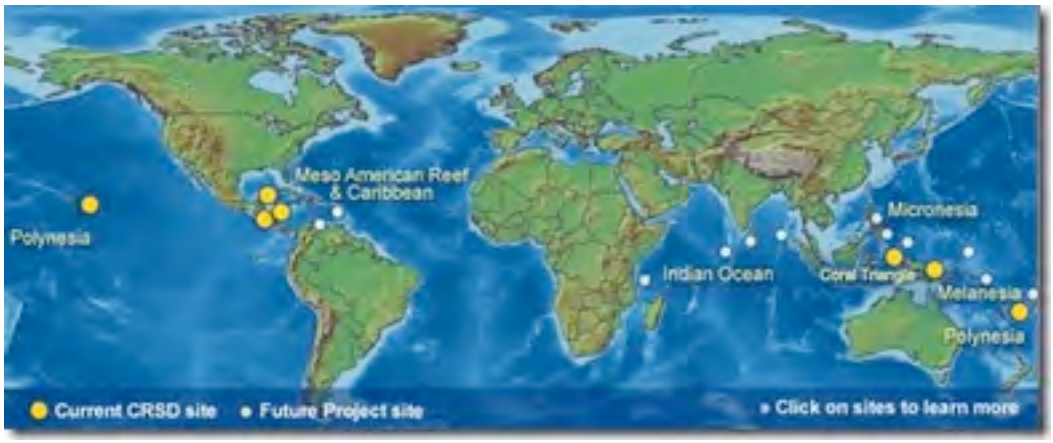
by ARC Centre of Excellence Coral Reef Studies

Asendle Trust

committed to raising funds for small, forgotten and misunderstood animals

The good and the bad news about Coral conservation

July 25, 2008



I've just returned from the 11th International Coral Reef Symposium (ICRS) in Fort Lauderdale, Florida, where nearly 3,000 scientists, conservationists, and government officials met to strategize solutions to coral reef destruction.

The bad news: Ocean acidification has joined climate change, over fishing, and coastal development as an urgent and major threat to coral reef health around the world.

The good news: CORAL's targeted method of creating effectively managed marine protected areas (MPAs) was identified as the best way to protect coral reefs.

Like taking vitamins to fortify your immune system, CORAL gives reefs a fighting chance against the major threats caused by human activities. Working within existing MPAs and identifying opportunities to create new MPAs, CORAL builds reef resilience by reducing the damage caused by such factors as marine recreation, unsustainable fishing, and lack of local capacity for conservation.

Less than one third of roughly 1,200 MPAs worldwide have the resources and knowledge to manage and enforce their protected status. Although approximately 18% of coral reefs are located in MPAs, only 2% of these MPAs have adequate conservation capacity.

While these statistics may sound daunting, they prove that our Coral Reef Sustainable Destination approach—which focuses on creating strong and effective MPA management—is the best chance we have to save coral reefs. Admittedly, the news about coral reefs is alarming, but it is by no means too late to save them if we act immediately.

CORAL's recent successes speak for themselves:

Five years ago, the biggest local threat to the Namena Marine Reserve in Fiji was anchor damage from marine recreation operators. With CORAL's help, Namena will become a completely anchor-free zone this summer.

In 2007, CORAL and its conservation partners facilitated the first voluntary standards for sustainable marine recreation along the Mesoamerican Barrier Reef in Mexico, Belize, Honduras, and Guatemala. With CORAL's help, the government of Belize is pushing to transform the standards into law.

Last week, we joined with our colleagues at ICRS to issue a worldwide call to action:

To save coral reefs, we must focus on improving the management of existing MPAs and creating new MPAs as quickly and effectively as possible.

CORAL is answering this call in the field on a daily basis. With your generous support, our strategic plan to expand our program sites from seven to seventeen in the next five years will make real and proven impacts on the health of our planet's coral reefs.

This tremendous validation of our work was a major victory for CORAL and all of its donors. Thank you for believing in us—and for helping us make people's lives better by protecting coral reefs.

Please call (US code415-834-0900) or email if you'd like to learn more about our work and ways to get involved.

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Almost half of coral reefs in poor condition: Study documented 15 ecosystems in American states, territories

July 26, 2008

FORT LAUDERDALE, Fla. (AP) -- Almost half the coral reef ecosystems in United States territory are in poor or fair condition, mostly because of rising ocean temperatures, according to a government report released recently.
Advertisement

The reefs discussed in the National Oceanic and Atmospheric Administration report serve as breeding grounds for many of the world's seafood species and act as indicators of overall ocean health.

"They are a major indicator of something that could go wrong with the environment," said Timothy Keeney, NOAA's deputy assistant secretary for oceans and atmosphere.

Keeney said 25 percent of all marine species need coral reefs to live and grow, while 40 percent of the fish caught commercially use reefs to breed.

"If we lose the reefs, you lose a very significant and important habitat," Keeney said.

The 569-page report took 18 months to complete with input from 270 federal, state and university scientists. It documented 15 ecosystems in U.S. states and territories, including the U.S. Virgin Islands, Puerto Rico, Florida, Hawaii, American Samoa and Guam. It was released at the 11th International Coral Reef Symposium in Fort Lauderdale.

The report's authors noted it was the first detailed NOAA study to go beyond anecdotal evidence and patchy science to provide conclusive data that the nation's coral reefs are in trouble.

"We can actually document these declines now," said Jenny Waddell, coeditor of the study and a NOAA marine biologist.

Guam's coral reefs are a precious asset to Guam's environment, economy and culture. The island's economic industry is driven by tourism and the coral reefs play a big role in tourist attraction.

Recently, resource economist John Dixon traveled to Guam to calculate the total economic value of the coral reefs. He estimated Guam's coral reefs are worth $127 million a year, according to the Guam Coastal Management Program.

"This is our island. We all should be proud of our island," said Evangeline Lujan, Guam Coastal Management Program administrator. "Our island has shared resources and we all share a responsibility to that."

Keeney sees corals as "a sentinel species of the planet," and calls them "the rain forests of the sea." Beyond their importance as breeding grounds for fish, reefs could hold cures for diseases.

He said there are also positive signs that people are beginning to understand "the value of coral reefs to our economy."

Kenney said the report adds another layer of scientific certainty that man-made climate change is stressing the nation's oceans and could ultimately have huge economic and social impacts if its effects are not reversed.

"There's no question that ... man-made actions are the major cause for these losses and stresses on the reefs," Keeney said.

Dave Allison, a senior campaign director for the advocacy group Oceana, said the entire world's coral reefs "border on disaster."

"All the world's coral reefs are being stressed by both short-term and long-term human impacts," Allison said. "We've known about the human impact on corals for decades. It's just that the combination of problems confronting the corals have never come together in such a perfect storm."

Pacific Daily News reporter Jennifer L. Dulla contributed to this story.

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Climate change will increase the erosion of coral reefs

Jeremy Hance

July 28, 2008

Coral reefs are particularly susceptible to climate change. Warming waters have been shown to bleach coral, killing off symbiotic algae that provide them with sustenance, and often leading to the death of the coral itself. Much attention has been placed on bleaching coral, but now scientists have discovered an additional danger to coral reefs in a warming world: erosion.

A study published in this week's issue of PNAS has shown that coral reefs in the waters off Panama and Galapagos, which live in a naturally acidic and high CO2 environment, contain dangerously low percentages of cement to hold them in place. The researchers believe that these reefs are a vision into the future of reefs worldwide, since their environment replicates the expected increased in acidity and CO2. Oceans have already absorbed about one-third of all carbon dioxide released into the atmosphere since the industrial revolution.

Heavily bioeroded coral reef framework structure from eastern tropical Pacific Ocean. Photo taken at Dog Island Reef, Secas Islands, Gulf of Chiriqui, Panama. Image courtesy of T. B. Smith.

The researchers believe that early marine cementation is key to a coral reefs "rigidity and stability". Studying early marine cementation in three test sites, one in Galapagos and two in Panama, the researchers searched interskeletal pores for evidence of cementation. They found that cementation was in 1.5 to 16.1 percent of these reef's pores. The Galapagos was the most cement-free with six samples showing no cement whatsoever. The researchers also took samples from a reef in the Bahamas. In these less acidic and less CO2-rich waters, 60 percent of coral contained

cementation: four times more than the most cement-rich coral found by scientists in the waters off Panama. Bearing out the link between less cementation and risk of erosion, the scientists note that erosion rates in the Galapagos and Panama "are among the highest measured for any reef system to date".

Coral reefs are bombarded by threats. A recent study from the IUCN showed that nearly one in three coral species in the world are endangered. Threats included human disturbance, coastal development, sedimentation from land erosion and deforestation, high nutrient run-off from agriculture causing algae blooms, over-fishing, and bleaching due to warming oceans. This new study reveals yet another vulnerability, the increasing instability of reefs in face of climate change.

"Poorly cemented coral reefs of the eastern tropical Pacific: Possible insights into reef development in a high-CO2 world," by Derek P. Manzello, Joan A. Kleypas, David A. Budd, C. Mark Eakin, Peter W. Glynn, and Chris Langdon. PNAS.

National Oceanic and Atmospheric Administration (NOAA).

1/3 of Coral Could Face Extinction

July 29, 2008

Whether you are a scuba diver, snorkeler, swimmer or someone who like to see interesting marine life you should be concerned. As reported here previously, the ocean and life in it are in trouble. Over 70% of the world is covered by water and about 95% is still unexplored, yet soon there may be not be much to explore or see.

Science Magazine is reporting the conservation status of 845 zooxanthellate reef-building coral species have been assessed using IUCN Red List Criteria. Of the 704 species that could be assigned conservation status, 32.8% are in categories with elevated risk of extinction. Declines in abundance are associated with bleaching and diseases driven by elevated sea surface temperatures, with extinction risk further exacerbated by local-scale anthropogenic disturbances. The proportion of corals threatened with extinction has increased dramatically in recent decades and exceeds most terrestrial groups. The Caribbean has the largest proportion of corals in high extinction risk categories while the Coral Triangle (western Pacific) has the highest proportion of species in all categories of elevated extinction risk. Our results emphasize the widespread plight of coral reefs and the urgent need to enact conservation measures.

It is time to get OUR act together and save our oceans and the life in and around it. Here are some organizations which you can volunteer to help in a variety of ways. We can do it.

INTER PRESS SERVICE
NEWS AGENCY
THE STORY UNDERNEATH

Q&A: "Cancún's White Sands Wouldn't Exist Without Coral"

Stephen Leahy

July 31, 2008

Interview with Marine Scientist Roberto Iglesias-Prieto *

Roberto Iglesias-Prieto

Credit:UNAM

FORT LAUDERDALE, Florida, U.S., Jul 31 (Tierramérica) - "There would be no white sands on the beaches of Cancún without the Mesoamerican reef," Professor Roberto Iglesias-Prieto, a marine ecophysiologist working at the Institute of Marine Sciences and Limnology of the National Autonomous University of Mexico, told Tierramérica.

Tourism is Mexico's third leading source of revenue, and the country needs to invest much more in protecting its valuable coral systems, says the expert. But to explain the problems that coral reefs face "it is not enough to be an ecologist; one has to be an economist and political scientist as well," he adds.

The Mesoamerican reef, which is off the Yucatán Peninsula and is shared by Mexico, Belize, Guatemala and Honduras, extends 1,100 kilometres, making it the largest in the Atlantic Ocean and the second largest in the world, after the Great Barrier Reef east of Australia.

Corals are crucial for the health of oceans and are home to 25 to 33 percent of marine life. The livelihoods of one billion people rely on coral reefs, directly or indirectly.

But the reefs are dying as a result of excessive fishing, pollution and climate change, which is heating up the water and causing acidification.

Few coral reefs will be healthy beyond 2050 if significant reductions in emissions from the burning of fossil fuels do not occur in the near term, most experts in this field agree.

Tierramérica's Stephen Leahy spoke with Iglesias-Prieto during the 11th International Coral Reef Symposium in July in Fort Lauderdale, Florida.

TIERRAMÉRICA: Are Mexico's coral reefs properly protected?

ROBERTO IGLESIAS-PRIETO: There are several protected areas, but most of these allow multiple uses such as recreation and fishing. Unfortunately there has been no real commitment or investment by the federal government in reef protection and management. Reefs like the Mesoamerican provide services worth billions of dollars such as attracting tourists, providing hurricane protection, and preventing shoreline erosion.

The beachfront in Cancún (southeastern Mexico) is incredibly valuable. The tourists are mostly going to the beaches, not the forests, yet the forests are the focus of the country's conservation policies.

TA: How are you trying to change this?

RIP: I appear before the federal and state governments and try to convince them to invest in reef protection and management. Right now a small fee that tourists pay is about all that is available. Unfortunately, governments do not see coral reef conservation as a priority, but I am trying to change that by showing the economic benefits of reefs. It's not enough to be an ecologist; you also have to be an economist and a political scientist.

TA: Your own research is on how corals use light. Can you explain?

RIP: Corals are fantastic light traps. They are far more efficient at using light energy from the sun than plants on land. Corals harvest light and spread it internally to supply their symbionts (algae) with light energy. The symbionts are what give corals their incredible colours and transform light into nutrients for the corals to live on.

TA: Corals in the Caribbean region have been dying or bleaching in recent years. Why?

RIP: Corals are very sensitive to environment changes. Climate change is warming the surface water of oceans. Raise water temperatures around corals by only 1.5 C degrees higher than the average summer temperature and that's it. Corals bleach because they lose their symbionts and they die without them.

TA: What do you mean when you say corals are "the marine canaries in the coal-mine"?

RIP: Corals are clear evidence of the impact of climate change. If we don't take action and we lose them, we will be fighting for our survival. We have to keep insisting and telling people that.

TA: Doesn't Mexico want to expand its exports of oil -- the very fossil fuel that's killing corals?

RIP: We're a developing country, we want to burn more oil, export it to make money so we can develop and live a happy life. And yet there is this nightmare where those emissions will, in a few decades, mean we will lose the "beautiful monsters" -- the corals and the amazing creatures that live in the reefs.

TA: With things as they are, what are your thoughts about the future?

RIP: I have witnessed the destruction of entire coral ecosystems in my life. And the future does not look that bright. When I talk to school children I feel like I am telling them a horror story about what is happening to coral reefs and the challenges of climate change. I tell them they have to fight. They can change this by reducing their ecological footprint and demanding a green agenda from politicians.

TA: If you could write the headline for corals and climate change, what would it be?

RIP: Corals are in deep trouble but good management and protection can buy them time until we find ways to reduce carbon emissions

(*Stephen Leahy is an IPS correspondent. Originally published by Latin American newspapers that are part of the Tierramérica network. Tierramérica is a specialised news service produced by IPS with the backing of the United Nations Development Programme, United Nations Environment Programme and the World Bank.) (END/2008)

MiamiHerald.com

Coral reefs, polar bears in warming world

August 2, 2008

By Polita Glynn

At this month's closing session of the 11th International Coral Reef Symposium, a panel of reef scientists, ocean experts and journalists took on the daunting task of crystallizing almost 2,000 scientific presentations into four-minute summaries, while also providing the rationale of why the information was important. With so much trouble in the world, as Bob Marley would sing, why should people care about the future of coral reefs? Here's how the best minds in the world might answer that question.

Coral reefs are environmentally and economically important. They provide protection for coastal communities, buffering the impact of storms, but more essentially they are home base for thousands of fish who use the coral formation as shelter and food. In terms of dollar value in South Florida, Marea Hatziolos of the World Bank Group, reflected that the "ecosystem service" -- or economic value based on industries such as tourism or fishing -- would be measured at $3 billion annually.

The other take-home message was, coral reefs are in serious trouble, but they are not doomed. Therefore, saving them should not be abandoned as a hopeless cause. Coral reefs are extremely sensitive little animals called polyps, who have an essential and symbiotic partnership with an algae called zooxanthellae, that live inside the coral. For years corals have been impacted by land-based run off of chemicals and pollutants, disease, human impact and destructive fishing practices. This has resulted in a loss of more than 30 percent of the world's corals in some locations, and those numbers are rising every day. As a way of capturing this loss, Steve Palumbi of Stanford University proposed a headline that would read, ``Thirty percent of coral in foreclosure. Thousands of species of fish and invertebrates go homeless."

But now corals face greater threats than local environmental conditions. They are fighting against an enemy that they share in common with polar bears and melting glaciers; climate change.

Corals cannot survive in ever warming sea temperatures caused by rising global temperatures. And there's a double whammy linked to increased carbon emissions. For years the ocean has taken the carbon hit for us terrestrial beings. Acting like a carbon sponge, the oceans have absorbed tons and tons of carbon, which in turn has caused

the oceans to become more acid. This higher acidity makes it harder for corals and other animals to form calcium carbonate skeletons and shells. In essence, these invertebrates are being slowly dissolved by ocean acidification, or as Joan Kleypas, a scientist at the National Center for Atmospheric Research, so aptly stated, they are suffering a kind of osteoporosis of the ocean.

Nature has an incredible ability to adapt, but it can only adapt to so much at one time and some organisms are better at it than others. Resiliency is a major topic these days in environmental issues. It speaks to the survivors, the population of a species that manages to get through a negative event. While scientists are just beginning to understand why, it is clear that, like humans, a stronger immune system, less stressors and a healthy environment give corals a better chance of surviving the attacks that weaken them.

So advice emerged in the well-stated axiom; "Think globally. Act locally." Local management and protection of coral reefs is essential. It will keep them strong through the hard times. Reducing our global carbon and greenhouse output is critical. Corals, like polar bears and humans, will not be able to survive continued higher levels of carbon emissions and rising temperatures.

Even if you don't specifically work on coral reef protection, if you work on reduction of greenhouse gases, you will be helping to save the reefs. There is a saying, "We don't inherit our natural resources from our ancestors, we borrow them from our children." The closing headline I would like to read would be, ``Parents refund robbed environmental piggy-bank, with interest."

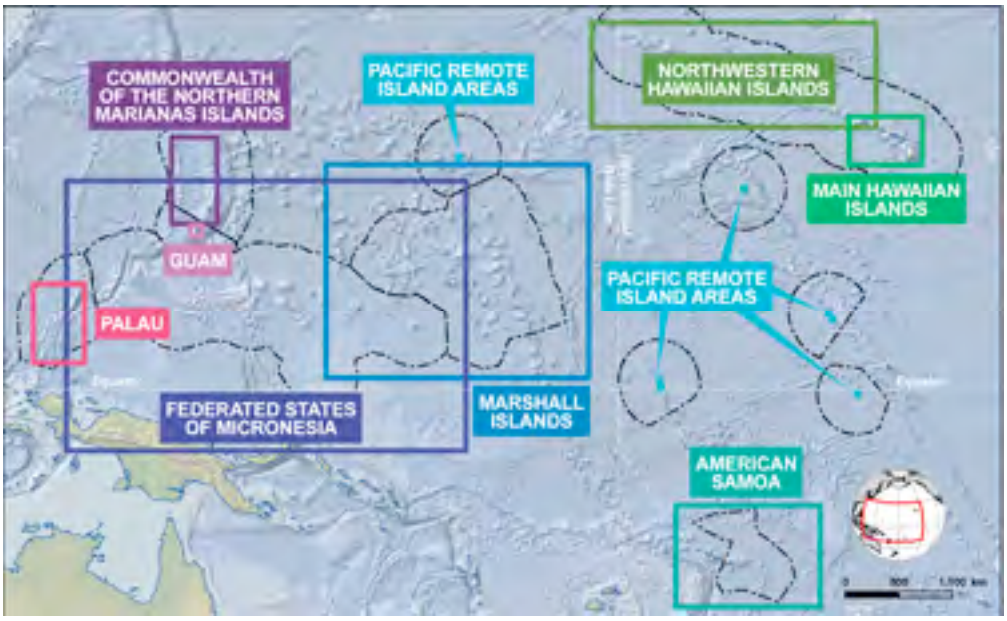
Polita Glynn is director of the Pew Fellows Program in Marine Conservation in Miami.

OceanLines
Passagemaking and Marine Science News

Coral Reef Health Worse Than Thought

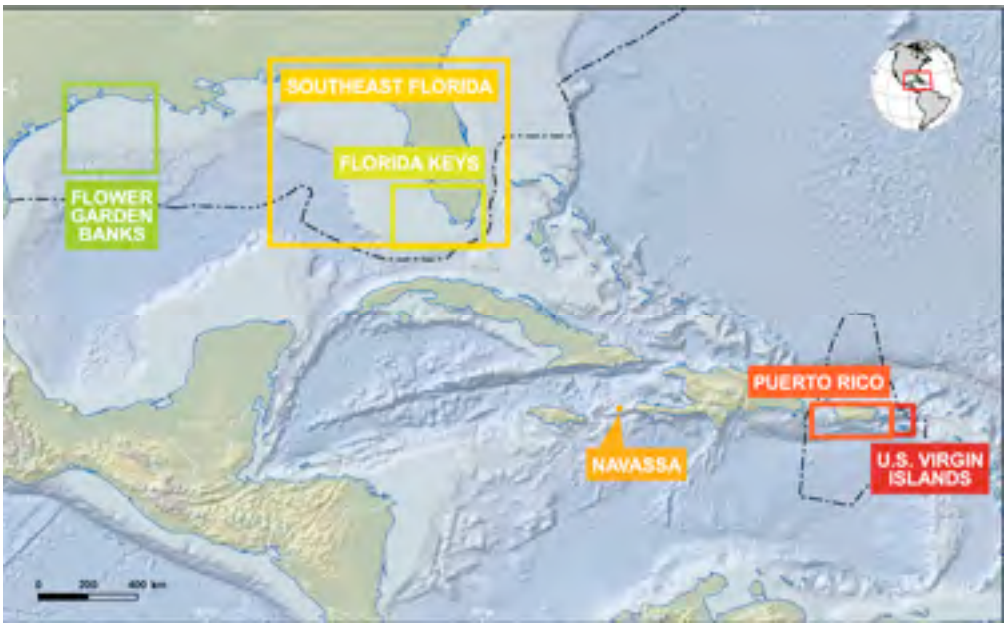
August 4, 2008

Half the coral reefs in the United States are categorized in “poor” or “fair” condition according to a new analysis published by NOAA. The report, led by NOAA’s Center for Costal Monitoring and Assessment’s Biogeography Branch and supported by NOAA’s Coral Reef Conservation Program, was released at the 11th International Coral Reef Symposium in Ft Lauderdale, FL on July 7th.



Map of Pacific Ocean

More than 270 scientists worked to write the 596 page report describing the present conditions of coral reefs. The reefs were studied in the U.S. Virgin Islands, the Republic of Palau, Puerto Rico, Guam, Navassa Island, the Commonwealth of the Northern Mariana Islands, southeast Florida, the Florida Keys, the Federated States of Micronesia, Flower Garden Banks, the Republic of the Marshall Islands, the Main Hawaiian Islands, the Northwestern Hawaiian Islands, the Pacific Remote Islands and American Samoa. They were rated on a scale of excellent, good, fair, poor, or unknown. The 2008 report is the third in a series with previous reports in 2005 and 2002. The continuation of the series is meant to strengthen efforts to track the condition of coral reef ecosystems, as called for at the National Coral Reef Action Strategy.



Map of Atlantic Ocean and Carribbean

Coastal Coral Reefs are in danger from impacts of humans including coastal development, fishing and recreational use. Tim Keeney, deputy assistant secretary of commerce for oceans and atmosphere and co-chair of the United States Coral Reef Task Force says that "while the report indicates reefs in general are healthier in the Pacific than the Atlantic, even remote reefs are subject to threats stemming from cilmate change, as well as illegal fishing and marine debris." The conditions of the coral reefs in the U.S. are declining and as a result Elkhorn and Staghorn corals have become the first corals ever to be listed as threatened under the Endangered Species Act. Navy Vice Admiral Conrad C. Lautenbacher Jr., Ph.D., under secretary of commerce for oceans and atmosphere and NOAA administrator says that "NOAA's coral program has made some significant progress since it was established 10 years ago, but we need to redouble our efforts to protect this critical resource."

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practical fishkeeping

Reef-building corals face extinction

August 5, 2008

Turbinaria mesenterina (Richard Ling, Creative Commons).

Scientists from 11 countries have conducted the first comprehensive global assessment of reef-building corals and have found that a third of them are threatened with extinction.

The results of the assessment are published in a recent issue of the journal Science by a team of 39 coral experts led by Kent Carpenter, which applied International Union for Conservation of Nature Red List Criteria and Categories to 845 coral species worldwide.

The authors found that of the 704 coral species that could be assigned conservation status, 32.8% (231 species) are in categories with elevated risk of extinction (141 species has insufficient data to complete a Red List assessment).

In the study, the main threats to corals were identified as rising sea temperatures and ocean acidification resulting from climate change and localized anthropogenic stresses resulting from increased coastal development, sedimentation resulting from poor land-use and watershed management, sewage discharges, nutrient loading and eutrophication from agro-chemicals, coral mining, and overfishing.

The Acroporidae (staghorn coral), Euphylliidae (hammer, torch, frogspawn, bubble, elegance and fox corals) and Dendrophylliidae (sun, cup and pagoda corals) were found to be the most extinction-prone, with about half the species listed in the threatened category; the Meandrinidae (maze corals) and the Oculinidae (galaxy corals) are similarly threatened with about 40% of the species listed as vulnerable.

The scientists conclude: “[o]ur analysis indicates that the extinction risk for many corals is now much greater than it was before recent massive bleaching events. Whether

corals actually go extinct this century will depend on the continued severity of climate change, the extent of other environmental disturbances, and the ability of corals to adapt.

“If bleaching events become very frequent, many species may be unable to reestablish breeding populations before subsequent bleaching causes potentially irreversible declines, perhaps mimicking conditions that led to previous coral extinctions.

“If corals cannot adapt, the cascading effects of the functional loss of reef ecosystems will threaten the geologic structure of reefs and their coastal protection function and have huge economic effects on food security for hundreds of millions of people dependent on reef fish.

“Our consensus view is that the loss of reef ecosystems would lead to large-scale loss of global biodiversity.”

For more information, see the paper: Carpenter, KE et al. (2008) One-third of reef-building corals face elevated extinction risk from climate change and local impacts. Science 321, pp. 560–563.

INTERNATIONAL CORAL REEF SYMPOSIUM (ICRS) July 7-11 in Fort Lauderdale

Weekdays Additional dates between now and Jul 11, 2008

As most of you know, the symposium is quite expensive. However, the exhibit area and Education Center are free to the public and we have a full program of speakers each day in the Coral Theater. Please plan to attend the ICRS Education Center and view the programs in the Coral Theater. Teachers who visit the ICRS Education Center will receive priority placement for the special IYOR teacher training later this year. You will also receive a free IMAX ticket for visiting the ICRS Education Center.

We've held four teacher trainings over the last two years and, thanks to your feedback, they have evolved and grown more successful each time. This special training will include reef fish, coral and marine invertebrate identification, a free copy of Reef Coral by Paul Human, a free DVD on Coral Reefs and a free snorkel trip (or glass bottom boat tour for non-snorkelers). The one-day class will be held in October, 2008. Teachers who visit the ICRS Education Center will receive priority placement for the special IYOR teacher training. To double your chances for getting in, plan to do a campus-wide or classroom-wide education project on coral reefs in celebration of the IYOR. This can range from research projects, poster contests, essay contests, school murals, etc.

FREE CORAL REEF RESOURCE CD-ROM (over 150 activities specific to k-12 students, numerous resources, PSAs and a 10-minute video). Request your free copy today by sending an email with your mailing address.

Contact:
Christopher Boykin
Awareness and Appreciation Project Coordinator
Florida Department of Environmental Protection Coral Reef Conservation Program - www.dep.state.fl.us/coastal/programs/coral
Southeast Florida Coral Reef Initiative - www.southeastfloridareefs.net
1277 NE 79th Street Causeway Miami, FL 33138 / (305) 795-1222 / Fax: (305) 795-3470

11th International Coral Reef Symposium: Call to Action

A Call to Action

2008 is a critical time for coral reefs. At the 11th International Coral Reef Symposium held in July, over 3000 experts from 75 countries assembled to face some hard truths: coral reefs are teetering on the edge of survival and it is our fault. High levels of carbon dioxide in the atmosphere have produced a lethal combination of hotter and less alkaline seawater. Pervasive overfishing, pollution, coastal development, and physical damage further undermine reef health, and consequently, that of the people and ecosystems depending upon them.

Coral reefs feed, protect, and provide livelihoods for hundreds of millions of people around the world. They create homes for billions of fish and other animals, buffer coastlines from the ravages of storms, and provide rich economic opportunities through tourism and fishing. Their value to society has been estimated at more than $300 billion/yr. Reefs are also the dynamic centers of the most concentrated biodiversity on Earth. Losing coral reefs would rob the world of one of nature's most precious gifts.

Yet despite these challenges, it is not too late to save coral reefs. The vast majority of scientists at the 11th ICRS walked away with a renewed sense of purpose and hope for the future. A consensus emerged that society has both the knowledge and the tools to bring coral reefs back from the brink. The only question is - will we act?

We have a real - but rapidly narrowing - window of opportunity in which to take decisive action. We must immediately

- **Cut CO2 emissions by lowering our carbon footprint and ask our policymakers to commit to low carbon economic growth.**

- **Eliminate open access fisheries in coral reef ecosystems.** Establish and enforce regulations on user rights, total allowable catch, individual catch quotas, non-destructive gear and other sustainable fisheries regulations.

- **Protect parrotfish and other coral reef herbivores.** Ban the harvesting of these species for sale and commercial consumption.

- **Establish and strictly enforce networks of Marine Protected Areas that include No-Take Areas.** Consult with local communities and authorities on design and benefit sharing to maximize returns and build # sustainability into the process in order to protect marine biodiversity and restore vital fish stocks.

- **Effectively manage the waters in between Marine Protected Areas.** The enforcement of coastal zoning, environmental impact assessments and "polluter pays" regulations can help control marine and land-based sources of pollution, while strategic environmental assessment can effectively manage coastal development and tourism.

- **Maintain connectivity between coral reefs and associated habitats.** Mangroves, sea grass beds and lagoons contribute to the integrity of reef ecosystems and their continued production of ecosystem services.

- **Report regularly and publicly on the health of local coral reefs.** Include assessments of the effectiveness of management and conservation measures.

- **Recognize the links between what we do on land and how it affects the ocean.** Remember that we live on a blue planet - our health depends on ocean health.

- **Bring local actors together to develop a shared vision of healthy reefs and a road map for getting there.** Engage members of industry, civil society, local government and the scientific community to set ambitious targets and performance indicators.

- **Work for change when management fails to produce desired outcomes.**

Only by taking bold and urgent steps now can we hope to ensure that reefs will survive to enrich life on earth, as they have for millions of years before us. By failing to act we risk bequeathing an impoverished ocean to our children and future generations. We urge you to sign on below to this commitment to action.

For the Outcomes Overview of the 11th ICRS, please visit:
http://www.nova.edu/ncri/11icrs/index.html

For more information about the International Year of the Reef, visit: http://www.iyor.org

For more information about the International Society of Reef Studies, visit:
http://www.fit.edu/isrs

Coral Reef Symposium 2008

The prognosis is grim, but not hopeless. So say the most optimistic of the world's coral reef researchers. The pessimistic ones are another story.

One-third of the world's coral reefs will be dead in the next 20 years, or less. Several species of sharks are on the verge of extinction due to the demand for shark fins. Turles, rays, tuna, cod, seabass, whales, manatees, billfish, grouper, red fish, there isn't a species of marine life that is doing well.

This video contains images from the symposium and audio from from a couple of exhbitors.

Video: http://bluegreennetwork.wordpress.com/2008/07/19/coral-reef-symposium-2008/

Coral Reef Alert

The environment and climate change is a hot topic, pun intended.

At the 11th International Coral Reef Symposium held recently in Fort Lauderdale, Florida, the damage of climate change on corals was underscored. Scientists from the International Union for the Conservation of Nature discovered that of 704 reef-building coral species they could study, 32% are in danger. What is shocking is that before the 1998 global coral bleaching catastrophe, that percentage was just 2%.

This and other messages painted a grim picture of the future of the world's corals. But the message at the symposium wasn't all doom and gloom. A universal positive that emerged from the symposium is that there is still hope. Scientists believe that we still have a window of opportunity to, if not reverse the damage, stem its blistering pace.

One such counter measure is “reforestation” of the coral reefs, an analogy in parallel with coral reefs being likened to rainforests for its importance and diversity. Fragments of coral are cloned on a movable substrate and mature coral can then be transplanted to where it's needed.

Artificial reefs is another way in which to create a suitable environment for coral growth. But more than coral regeneration, artificial reefs also attracts other marine life. This creates an obvious incentive and puts a fresh perspective on the benefits of building artificial reefs to support or replace reefs that once drew tourists or were sources of fish for communities.

The 11th International Coral Reef Symposium sounded loud warnings about the state of the planet's coral reefs, but all is not lost. Through initiatives, rapidly implemented and properly managed, our coral reefs might just make it to and beyond the end of this century.

Blog © Dive The World

Indigenous knowledge helps to protect reefs

August 7, 2008

Coral reef experts now recognise the importance of joining up the latest science with the ancient knowledge and traditional practices of local communities living near reef systems.

This is the case both in developing countries, where lack of government resources makes getting fishing communities on-board with reef management programs an economic necessity. But the same approach is also being taken by Australian scientists working to protect the Great Barrier Reef. They're working with around 70 indigenous groups spread along hundreds of kilometres of eastern Australia, who're helping fill in a knowledge gap spanning tens of thousands of years.

Presenter: Corinne Podger
Speaker: David Wachenfeld, Great Barrier Reef Marine Protection Authority researcher

PARADE

Can Our Oceans Survive?

By Daryl Chen

July 27, 2008

As director of The Marine Mammal Center in Sausalito, Calif., Frances Gulland sees firsthand the effects of the oceans' deteriorating state. Her patients have included cancer-stricken sea lions whose tumors are thought to be associated with PCBs, sea otters infected by a parasite linked to run-off, and fur seals sickened by toxic algae. These animals act as "an early warning system," says Gulland. "All these things could happen to us."

A recent study led by the National Center for Ecological Analysis and Synthesis in Santa Barbara, Calif., found that close to half of the oceans are "fairly degraded," and only 3.7% show little or no impact from human activity. Oceans help keep the environment healthy by absorbing carbon dioxide. But now the results of that intake are evident. The seas have risen, warmed, and acidified worldwide. Those changes, combined with overfishing, have caused 90% of our big fish to disappear, according to Leon Panetta, co-chair of the Joint Ocean Commission Initiative. "Pollution has led to almost 26,000 U.S. beaches being temporarily closed or put under advisories," he adds, " and nearly 90% of our wetlands, the nurseries for fish, have vanished due to development. The oceans are in crisis."

The U.S. government spends relatively little on the sea. Around $18,700 per square mile goes to the National Park System, while $400 per square mile goes to its ocean counterpart, the National Marine Sanctuary System. Private charities show a similar trend. "Close to 99% of conservation dollars donated go to land causes, and 1% to oceans," says Debra Erickson, executive director of the nonprofit Kerzner Marine Foundation (KMF). "But over 70% of the Earth is covered by oceans."

Lack of public attention may be due to the sea's placid appearance. "You look at the surface, and it looks fine," says Prof. Jane Lubchenco of Oregon State University in Corvallis. "Yet below the surface is a whole different story." The Blue Project—a collaboration among KMF, other nonprofits, and Kerzner's Atlantis resort in the Bahamas—is trying to educate people about what's happening underwater, specifically with coral reefs. Atlantis visitors can go scuba diving or snorkeling and see the stark difference between a healthy reef filled with colorful creatures and a degraded one that contains bleached coral and not much else. "When you see a reef that has the proper number of fish in it vs. one that doesn't, it takes your breath away," says Erickson.

Saving the Coral Reefs

Researchers Are Tracking Ways to Help Revive Reefs

By DARCY BONFILS and IMAEYEN IBANGA
Aug. 7, 2008

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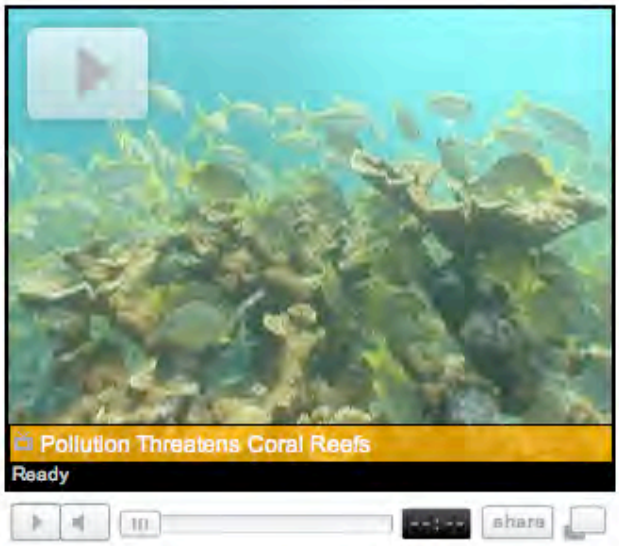
More than 4,000 species of fish and other sea creatures are in a perilous position as their home faces extinction.



Increased pollution has impacted the coral reefs and our food chain.

Coral reefs hold more than 25 percent of all ocean life and serve as one of the most critical blocks in the human food chain.

"If we were to lose reefs, you basically lose the condominium that holds all those creatures," said Ellen Prager, chief marine scientist for the Aquarius Reef Base research project in Largo, Fla.

Coal reefs have thrived for 200 million years, but dealing with extensive human impact and environmental pressures, including overfishing, water pollution and climate change, have taken a toll on the ocean's populous habitats.

"The resilience of the coral reefs ecosystem is stressed and impaired," said environmental consultant Gary Davis.

Studying the Reefs

Scientists have turned to the world's third largest coral reef, which hugs south Florida's coast and extends to the Florida Keys, to help determine just how human and the environment influence coral reefs.

Prager is among the researchers studying coral reefs off the coast of Key Largo, Fla., in the world's only underwater lab looking for how climate change effects impact the Florida reef.

"By being down here and studying coral reef, we can see how they all act in the real world," Prager said.

The Florida reef is one of the ones facing the most risk because of human impact and environmental stress, but research from the Dry Tortugas, also in Florida, offers some hope.

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The nation's most remote island chain, which has shores accessible only by boat or plane, is prime spawning area for coral. It also is a hurricane target. In fact, six storms hit the Dry Tortugas between 2004 and 2005, including Hurricane Katrina.

Each time a large storm hit, it stripped coral from the ocean floor.

"Fifty to 100 square miles of area literally denuded," said Jerald Ault, a professor at Rosenstiel School of Marine Science at the University of Miami. "It looked like your favorite parking lot."

Though Ault said the area was "decimated," it is coming back to life partly because of actions that protect the waters against fishing. The coral has bounced back from the storms and may give insight for other reefs experiencing trouble.

"So if the corals are adapted to these things, which they seem to be — and can survive — it gives us hope that they can survive our human impact," said Jim Bohnsack, of the National Oceanic and Atmospheric Administration.

Coral Reefs around the world house thousands of fish species but are facing trouble due to humans' impact on the environment.
(Getty Images)

Check out these links for more information about coral reefs.

- www.noaa.gov