



SUMMARY REPORT: *Acropora* Conservation Workshops

In response to a 2004 petition filed by the Center for Biological Diversity (CBD) the National Marine Fisheries Service (NMFS) added elkhorn (*Acropora palmata*) and staghorn (*A. cervicornis*) corals to the Endangered Species Act's list of threatened species as of May 9, 2006. As threatened species, the prohibitions in Section 9 of the ESA do not automatically apply upon listing as they would for species listed as endangered. Therefore, NMFS must determine which, if any, of the section 9 ESA prohibitions are necessary and advisable to provide for the conservation of the species. Prohibitions would be applied to the corals through a 4(d) rule. Additionally, NMFS has not more than one year from the published date of the final listing rule to designate critical habitat for both species, if prudent for the purposes of the ESA.

In May 2006, NMFS sponsored seven *Acropora* Conservation Workshops in the following locations to gather information for a possible 4(d) rule and designation of critical habitat:

- Dania Beach, Florida
- Key Largo, Florida
- Marathon, Florida
- Key West, Florida
- Kingshill, St. Croix, U.S. Virgin Islands
- Charlotte Amalie, St. Thomas, U.S. Virgin Islands
- San Juan, Puerto Rico

For potential workshop participants unable to attend one of the workshops, provisions were made for the submission of comments, relevant to the development of a 4(d) rule and designation of critical habitat, via mail, fax, or email until June 2, 2006. Additionally, the workshop presentation, informational handouts, and other relevant materials were made available online prior to the workshops (see <http://sero.nmfs.noaa.gov/pr/protres.htm#acropora>). Hard copies of the presentation, informational handouts, and other relevant materials were distributed to workshop participants at each location.

The workshops were structured into a format conducive to focused and productive discussions, as these were intended to be constructive brainstorming and information collecting sessions. Thus, following a brief overview presentation by NMFS SERO staff that covered the progression of events leading up to the workshops and the implications of a threatened listing, the workshop participants broke out into three working groups. The working groups were organized into the following interest groups:

- Fishing, Diving, and Recreational Activities

- Coastal and Nearshore Construction and Related Activities
- Research and Recovery

Examples of possible discussion topics within each grouping were provided to help participants organize themselves into one of the three groups (see [workshop presentation](#)). The discussion was guided by several focus questions (see the [workshop presentation](#) for specific questions). The facilitator for each group recorded the issues discussed on a flip chart. The notes taken on these flip charts were transcribed into an MS Excel spreadsheet, which also includes the comments received from mail, fax, and email submissions. The contents of these spreadsheets are included in this summary document.

Following the discussions of each of the three working groups, participants were brought back together. The working group leader (i.e., one of the NMFS SERO staff members) verbally summarized the outcomes of each of the three discussions for all of the workshop participants. After these summaries were completed, the NMFS SERO staff opened the floor to comments and general questions from the participants about the workshop, the working group discussions, and the next steps for both elkhorn and staghorn corals. The comments and questions discussed at the end of all seven of the workshops as well as the comments received from mail, fax, and email submissions are included in this summary document.

DISCLAIMER: NOAA Fisheries Service will consider the input received that is relevant to the determinations required for the 4(d) and critical habitat rulemakings.

Working Groups Notes - Activities & Programs

Activity or Program	Possible Impacts	Possible Modifications to Activity or Program	Other Comments
"borrow" material			
"chum water"			
"health" - bacteria, mucous			
"robin net"			
2 Tier CZM System	not comprehensive		
2-3 cm			
absence of symbionts (e.g., diadema)			
Acropora populations in PR	strategic location for possible repopulation of species	need for population-specific management strategies	
Adopt-A-Reef		allow	
African dust			
African dust	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	
agricultural practices			
agricultural run-off	pesticides in run-off, nutrients and other pollutants in run-off, destruction of corals	development of BMPs to eliminate run-off	
agricultural run-off		treatment of run-off to remove pesticides and nutrients prior to release; purchase of areas most directly linked w/pollutant discharges; eliminate sugar subsidies;	
agricultural run-off (CERP)	pesticides in run-off, nutrients and other pollutants in run-off, destruction of corals	prevent run-off; clean water for corals	
agricultural waste (e.g., pesticides, fertilizers)	damaging reefs	greatly reduce this activity	
agricultural wastes			
agriculture			
agriculture run-off	pesticides	land acquisition, wetlands restoration, enforcement of existing regs, treat run-off b/4 it reaches FL Bay, eliminate tax subsidies for sugar production	
Air and Sea show		no anchoring during period	
airplanes	emissions, fuel run-off		
algal blooms	smother and kill coral; reduction of larval settlement; degraded water quality	regular performance of nutrient water quality monitoring; identify point and non-point sources; institution of appropriate remedial measures	
algal competition	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	

Working Groups Notes - Activities & Programs

algal overgrowth	affects substratum; impact to habitat		
amateur divers	stand on corals	rentals, info on planes, TV hotel, dive shops; airlines agree to show conservation clips to passengers; info passed out by USVI DFW	snorkelers outnumber divers
anchor dragging		better boater education (start at young age); permit anchoring only in sand areas (particularly during large events like 4th July)	
anchor retrieval		buoy to sliding ring on shank on anchor; re-bar anchor for hard bottom	
anchoring	physical damage		
anchoring	not enough scope	target sand, appropriate chain length, no anchors on rentals, grapple?, education ("white" or mooring buoy)	
anchoring		education (marinas, gas stations, piers, bait shops, PSAs), target sand, consequences, mooring buoys, grapple vs. damforth (damforth bad), chains should be less than 1 yard	
anchoring	damage to corals	specific anchoring points for supertankers, cruise ships, military vessels, private yachts, and recreational fisherment to localize damage	
anchoring	damage from anchor; damage from drag; damage from swinging	avoid anchoring in hard bottom habitats; use proper anchor for depth and sea conditions; have enough scope; do not have too much chain; grapnel anchor in deeper, hard bottom	
anchoring	impact to coral colonies		
anchoring of commercial vessels		construction of moorings	
anchoring of recreational boats (x2 anchors/boat)		target sand, designate safe anchorage areas, damfort anchor (line + chain), SFA requirement for anchors to all + operators, mooring buoys (legislation mooring buoys trust)	
anchoring on corals	not permitted	result of lack of education or vessel mechanical problems; misdirected - sand, mooring buoys, no designated anchorages for commercial vessels, no suitable areas for designated anchorages	
anchors		monitor	
application of chemicals (pesticides)			
approved stormwater/waste effluent treatment plan (Nutrient Reduction Program)		enforcement and compliance (\$, staff)	
aquaculture		lab rat-line (sale?), fragments of opportunity	
aquaculture		none, but can assist in conservation of elkhorn/staghorn	
aquaculture		genetic culture bank, fragments of [spp.], closed/open/field systems, coral health committee, outreach	
aquaculture	no permits granted		
aquaculture - live rock	voluntary colonization by coral	exempt live rock aquaculture from take prohibitions; recognize potential for listed corals to appear on cultured rock	

Working Groups Notes - Activities & Programs

aquaculture - live rock		given limited control over what happens to colonies, how they are used, and how compensated for use of colonies growing at facility; continue propagation by fragmentation; use in restoration, research, and as lab rats; expand work to Ap; funding to expand	
aquaculture/Nursery		genetics = "zones" geographic for reintroduction, permit to relocate	
aquarists			
aquarium collecting/marine	octocorals (< 1"), chisels, hand nets		
aquarium collecting/marine			
aquarium collecting/marine		state permit	
archaeological	illegal, legal - mailboxes	stewardship, education, enforcement, permits, protocols, contain turbidity	
artificial reef construction and placement (stability, decomposition)		none, but can assist in conservation of elkhorn/staghorn	
assist in conservation of the species		navigational aids (GPS, Coast Pilot, charts); increased monitoring (reef, water quality, sampling resolution - temporal/spatial, sand waves); establishing a baseline (historical), expand wetlands and mangroves	
atmospheric mercury and lead (deposition from burning fossil fuels)			
ballyhoo fishing using floating drift nets/cast nets	tangle on coral	awareness of sensitive areas; buffer zone around identified populations	
barges			
barges			
battery recycling	assist in conservation		
beach renourishment	direct burial, indirect effects, cumulative impacts, equilibration	ban or improve beach renourishment; acoustic doppler current profile (real-time data capture to stop beach renourishment and other turbidity causing activities); evaluate slope of beach; deny beach renourishment during severe hurricane activity	
beach renourishment			
beach renourishment		enforcement of existing regs	
beach renourishment	suspended solids		
beach renourishment		grain size (large enough)	
beach sand projects	damaging reefs; turbidity	do not exempt these projects from protection plan for these species of corals	
big sugar			
black plastic garbage bags thrown overboard from cruise ships	massive damage to Ap; kills coral (suffocation and shading)	law requiring garbage to be compacted and returned to the beach - effective for all commercial vessels	
blasting			
boat grounding			
boat groundings		monitor	
boating	impact to coral colonies		

Working Groups Notes - Activities & Programs

boats for hire	anchoring, groundings	require a license, target sand, appropriate chain length, no anchors on rentals, grapple?, education ("white" or mooring buoy), SeaTow call enforcement when moving boats? - required by law to report groundings	
bone fishing	no take issues		
Bruckner - monitoring/surveys/Fort [..?..]			
cable and gas pipeline installations	destruction of Acropora	make all cable and pipeline installations go through natural gaps in offshore reef; tunnel from beach out past the Third reef (e.g. proposed for AES pipeline into Dania Bch, FL & EL Paso pipeline in WPBch); take pipeline low and beyond normal depth of coral	
cable layer ships			
cables/pipelines			
Caledonia quarry (NW part of island)			
cargo carriers		mooring system; target sand/ designated anchorages; trip line (SFA); require mooring for commercial vessels (charters - dive, snorkel, sail)	
cargo carriers	marine debris		
cargo ships			
carrying capacity		insurance rates, water quality/supply, evacuation time/routes, limit building permits, limit population growth within watershed	
cast nets for bait fishing	hand held from boat		
cattle			
CCMP biomarker A?			
CCRI monitoring			
CERP	are there impacts?		
channelization of rivers & canals	sedimentation, dredging		
charter boating			
charter catamarans		require "code of conduct", training, education, video; Dept. of Tourism "endorsement" (require conservation training in order to receive it)	
charter dive	tank, pressure gauge, standing, fins, cameras, holding, touching, laying on coral	education, orientation on way out not to touch, info at tank fills, laminated info with vessel registration (anchoring tips, corals), consequences (criminal and civil), repair shops, collect FL numbers into database, SeaTow call enforcement when moving boats? - required by law to report groundings, dive responsibility in dive class (buoyancy, fins, weight, tanks, not touching corals), early ID (bleaching, water sampling, EWS w/Mote)	
charter dive	fins, sitting, standing, buoyancy, weights, grabbing corals	education, mass media, workshops, Channel 5, Comcast, hotels, cruise ships, radio PSAs, billboards, funding for educational materials, boat ramps, gas stations, FL toll booth info, FL boating license, visual check by divers	
charter dive			
charter diving, under hire			
charter fish			

Working Groups Notes - Activities & Programs

charter fish - cast net			
charter fish - chumming	fishing litter (chum boxes, plastic, boxes, Publix bags)	biodegradable "label", only paper bags at tackle shops	
charter fish - hook/line	reels with monofilament, sinkers	restrict fishing in certain areas with buffer zones	
charter fishing			
charter fishing	pose no immediate danger	continue with minimal modifications	
charter fishing, under hire			
cinderblocks on grass beds			
CITES permit			
clean boating/marina program	assist in conservation		
Clean Water Act		enforcement of existing regulations	
climate variability	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	
coastal construction		contractor awareness; implement BMPs and enforce; avoid construction during spawning; curtail activity during high-stress periods (e.g., bleaching); increase buffers; stricter geological reviews; enforce permit conditions	
coastal construction (commercial)			
coastal construction (development)			
coastal construction (residential)			
coastal development	diminished water quality; injury, adverse impacts, or prevent/hinder recovery		
Coastal Management Plan		enforcement and compliance (\$, staff)	
coastal tourism	60% of Rincon workforce reliant on tourism for income; generates 40% of area's income; increased rate of coastal use and urbanization; threatens quality of nearshore environments		
coastal urbanization			
coastal zone management program (coastal non-point)		enforcement	
collections [?]			

Working Groups Notes - Activities & Programs

commercial - conch by hand	snorkel or SCUBA; 3 months; 150 shells/license/day; shells to shore [?], 9" 3" thickness; shells with [ramps?]		
commercial - lobster by hand	with snares; snorkel or SCUBA; experienced so physical damage [?]; no closed season; chemicals on octopus	chemicals prohibited, but sometimes used	
commercial bottom fishing			
commercial bottom fishing	no take issues		
commercial bottom longline			
commercial fish collection	physical damage from gear, holding, standing	education: charts, tank filling stations, boat ramps, bait shops, marinas, with fishing licenses, radio channel for info on coral; diver awareness education: fin length, buoyancy, gear storage (cameras); "When you touch me, I die." criminal/civil penalties, "What is Acropora?"; hand-held, coral growing on live rock, slup guns/chemicals - few use, but not banned	
commercial fish collection			
commercial fishing	nets dragged over reefs; gear entangled on reef	greatly limit this activity near coral reefs; leave reef areas as areas not used by humans	
commercial fishing	pose no immediate danger	continue with minimal modifications; set up a buffer area around known populations of these corals	
commercial fishing - ballyhoo	monofilament, prop wash, anchor, lost gear	restrict fishing in certain areas with buffer zones	
commercial fishing - bottom longlines			
commercial fishing - conch	lead weights, lost gear		
commercial fishing - finfish	monofilament, prop wash, anchor, lost gear	restrict fishing in certain areas with buffer zones	
commercial fishing - fish traps			

Working Groups Notes - Activities & Programs

commercial fishing - gillnet	set/retrieved by SCUBA on hard bottom; weighted for bottom; non-tended (legally required to be tended?); can move onto reef and become tangled	Federal ban in effect; Territorial ban proposed; hard to enforce; nets registered	
commercial fishing - lobster (by hand)	lost gear		
commercial fishing - lobster traps	buoys, traps, prop wash, anchor, lost gear		
commercial fishing - lobster traps			
commercial fishing - seine net (Ballyhoo)	on grass beds		
commercial fishing - seine net (Jacks)	becomes an underwater purse seine; 80' deep x 2-3000 ft. long; set by divers; hard bottoms and grass beds; divers scoop fish out into a boat - may "hold" fish		
commercial fishing - spearfishing	lost gear		
commercial fishing - stone crab traps	buoys, traps, prop wash, anchor, lost gear		
commercial fishing - trammel [?]	set/retrieved by SCUBA on hard bottom; weighted for bottom; non-tended (legally required to be tended?); can move onto reef and become tangled	Federal ban in effect; Territorial ban proposed	
commercial fishing - umbrella net			
commercial fishing - vertical set	deep water		

Working Groups Notes - Activities & Programs

commercial fishing activities targeting coral associated fish/inverts		clearly identify and address ecosystem impacts; consider both direct and indirect impacts; practice activity in ways that do not further jeopardize species; immediate end to overfishing; immediate determination of status of all coral-associate fish/inverts included in FMPs (stop fishing until status known); increase use of no-take MPAs in coral areas to cover at least 20% level identified in US CRAP; require certification that fisheries will not further the decline of Acropora or prevent/hamper recovery (modify management to assure this)	positive impacts of no-take marine reserves
commercial fishing vessels	groundings, Sea Tow/salvage, prop damage	boater education, avoid shallows, protocol/permit, replace markers after storms, more markers at reefs ("Danger Shoals")	
commercial fishing vessels	gear loss (monofilament, nylon, netting)		
commercial handline			
commercial hook/line			
commercial hook/line			
commercial lobster - by hand			
commercial lobster - trap	physical on coral, buoy line on coral, trap retrieval pre- and post-storms, leads on lines (sinks line), buoys cut-off/break-off, traps moving, singles & tralls	move traps off reef and areas nearby reefs, geographic region per individual w/allowable artificial (?) habitat, during hurricane season move traps North of US1, move traps to mud, timely retrieval after [...], FWC allows retrieval after storm, target sand, avoid areas, plastic throats/funnels (do not biodegrade)	
commercial lobster diving			
commercial lobster diving	takes place in channels or on Gulf side; little interaction b/wn knowledgeable fisher and corals		
commercial marine life collectors	not in elkhorn/staghorn zones		
commercial marine life collectors	corals not preferential habitat for desired species	marine collectors are a good source of info on locations of healthy populations; collectors may be willing to rehabilitate species	
commercial photography	tank, pressure gauge, standing, fins, cameras, holding, touching, laying on coral		
commercial photography			

Working Groups Notes - Activities & Programs

commercial shipping	siltations; prop wash; groundings (shallow channel, navigation error); discharge (pollutants, ballast, bilge, sewage, marine debris, [d..?..]); maintenance activities (painting, scraping)	designate anchorages	
commercial shrimp trawler	"hangs" by shrimpers		
commercial shrimping			
commercial spearfishing			
commercial spearfishing			
commercial spearfishing	direct by spear, fish going into corals; physical damage		
commercial spearfishing	no take issues		
commercial sponging	no take issues		
commercial trapping - lobster	storms, misplaced	target spots, buoy scope, trap retrieval, after season dischar[...?]	
commercial trapping - stone [f...]	storms, misplaced	target spots, buoy scope, trap retrieval, after season dischar[...?]	
commercial tropical fish collection			
commercial vessels	groundings		
comprehensive land/water use plan	decrease sedimentation; decrease erosion; implementation of filtration		
concession permit (6-pack license)	assist in conservation	conservation education; Dept. of Tourism "endorsement" (require conservation training in order to receive it)	
conservation easements & buffers		streamline process for conservation easements	
consumptive			
contaminants	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	
contruction of coal-burning plants	further destruction of coral reefs	stop plans to build coal-burning plants	
coral [sp...???] viewing	temporal/spatial		
Coral Conservation Law			
coral nursery - Broward, Miami-Dade, Keys, expand TNC project; field and lab			

Working Groups Notes - Activities & Programs

coral reef initiative	LAS (4); addresses land-based pollution sources		
Coral Reef Law 147	regs are pending		
crawfish trapping		set up a buffer area around known populations of these corals	
CRES monitoring, disease genetics of vectors			
cruise ship anchoring		mooring sites for large vessels	
cruise ships	anchoring, prop wash turbidity (harbor, reef), discharge (ballast, gray water, sewage)	fewer cruise ships, smaller propellers, deeper channels	
cruise ships	sewage	do not know what is coming out the ships; no regulations from Port Authority for discharges	
cruise ships	anchoring -drag through reefs - in channel, sediments	mooring system; target sandl designated anchorages; trip line (SFA); require mooring for commerical vessels (charters - dive, snorkel, sail); using local charter industry; using company charter	
cruise ships			
cruise ships		clean up	
cruise ships	plastic bags from [dunnage of?]; marine debris		
cruise ships	dumping, more algae, less fish, local Diadema recovery		
cruise ships	damage from waste discharged	do not permit cruise ships in areas where reefs are in danger	
cruise/naval ship traffic	bilge, introduced species/parasites		
Culebra - pre-bleaching, monitoring	70-90% Ac mortality		
culturing Ac in Culebra in situ	concrete bases, 10% size of colony, bleaching did OK, out planting (consecutive approach, same region)		
cumulative regional environmental impacts			
current state and federal regulations and FMPs		enforcement	
cush [?] net - on a pole; on a hoop	sometimes lost, fishers retrieve		
CWA	assist in conservation		

Working Groups Notes - Activities & Programs

CWA 404 Program		enforcement	
CWA Waivers		enforcement	
cyanobacteria removal			
CZM Commission	briefed on listing		
damforth anchor		OK for SPAW/in sand, moving balls (more people), chains	
damsel fishes	live coral loss and population decline		
deep water port facilities			
deep well injection	percolation		
DEP			
Department of Public Works		tie Federal funding for Territorial programs to specific milestones for reducing sediment and sewage input	
Dept. of Planning and Natural Resources		tie Federal funding for Territorial programs to specific milestones for reducing sediment and sewage input	
designation of managed areas - management plan		enforcement, education	
development		ban if within several miles of habitat	
development	sedimentation;	implementation and enforcement of sediment control plans (issuance of Notice-of-Violation and Cease and Desist Orders); increased protections when constructing during hurricane season; increased protection during construction pauses	STFA land-based pollution survey
development and construction (in general)		responsible development (how to do it vs. \$ to do it)	
development and construction (in general)		enforcement of existing regs, education & outreach (supporting and cooperating with grassroots efforts, developer awareness, contractor awareness, knowing the difference b/wn septic and sewer), encourage compliance, additional funding, provide infrastructure before additional development (Federal funding of infrastructure, state revolving loan fund increased), coordination of existing regs, add value to coral protection, implement recycling, clean marinas program	
development control by CZM			
development in coastal zone	increased erosion and sedimentation; water quality	protection of functional wetlands and vegetated watersheds to reduce run-off of sediments; land areas adjacent to coastal stands of Acropora should be protected and re-forested with native vegetation	
development in natural guts (existing and future construction)	run-off; sedimentation		
development on Hank Lollik	plans to destroy Acropora coral in Coconut Bay; ferry boat docking	prevent such activities	
different levels [for permitting?] - research, import/export, collection		database to check against - database of all researchers and them available to public	
direct and indirect sewage discharges			
discharge (cruise ships)		no gray water dumping	
discharge of water treatment effluent	detrimental to water quality	all wastewater treatment plants in the vicinity of Acropora corals be upgraded to at a minimum to full secondary treatment and no longer waived from the CWA through 301(h) waivers	

Working Groups Notes - Activities & Programs

disease		enforcement of existing regs	
disease outbreak	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	
disease research			
disease susceptibility			
diseases - prevalence, incidence			
disposal activities	increased sedimentation		
diving	anchoring, standing, holding, gear	drift diving, clarify FL statute 253 (criminal activity clarification), anchor breakaway, mooring buoys, no anchor zones, preserve/sanctuary, education: charts, tank filling stations, boat ramps, bait shops, marinas, with fishing licenses, radio channel for info on coral; diver awareness education: fin length, buoyancy, gear storage (cameras); "When you touch me, I die." criminal/civil penalties, "What is Acropora?"	
diving	buoyancy, fins, grab on corals, tank	discourage use of gloves, weight, B/C, educate at dive shops (gear, air, rental), education at certification, buoyancy, coral care, fin type, billboards, radio PSAs, educational signs at boat docks/ramps, tents at hotels/restaurants	
diving	more or less destructive than snorkelers?; on bottom (tanks, weight belts, fins, inexperience); shore entry; few privates diving (relative to Keys); 7 dive shops on one island : 50 mooring buoys; sunscreen impacts on reef?; contact with hand	target sand for shore entry; all operators give conservation talk; add video?; hand outs for air fills; selection [?]	
diving		conservation education; Dept. of Tourism "endorsement" (require conservation training in order to receive it)	
diving		education (via pre-dive briefings, certifying agencies, postings and distributions of educational material); vessel operating protocols (e.g., use moorings, proper anchoring techniques, encourage proper seamanship and boat handling); participate in monitoring programs/reef cleanups; remove debris during course of everyday operation; interact with law enforcement officers;	
diving		no activity zones; visit coral nurseries instead; give up full access to reefs	
Division of F&W - Endangered Species Division	permit		

Working Groups Notes - Activities & Programs

DNER	coral regulation prohibits take of any hard coral	changes to new reg on permit process	
DNER inventory of Ap islandwide			
dock regulation	material types, protection of marine resources	enforcement and compliance (\$, staff)	
docks			
docks (marinas, single-family)			
dolphin watching			
DPNR - GIS - land/sea interface (land use, topography, sediments, nutrients, watershed)			
DPNR (CZM, FW, DEP, Enforcement)		communication	
dredge & fill		enforcement of existing regs	
dredge & fill	deposit areas, suspended solids		
dredging		increase standards for fill material	
dredging		ban if within several miles of habitat	
dredging			
dredging		enforcement of operating procedures (e.g., silt curtains)	
dredging	increased sedimentation		
dredging	affects substratum; impact to habitat		
dredging and other activities	impede larval recruitment/settlement; mortality of recruits; affect environmental quality (e.g., turbidity, sedimentation)	suspension of these activities during periods of spawning (include sediment/turbidity impact caveat in final rule)	
dredging for port/maritime/navigation activities			
dumping of Lake Okeechobee water		reduce dumping of Lake O. water	
dumping, discharging, or disposing of materials into coral reef ecosystems	enter/injure species	prohibit waivers/exemptions and ensure compliance with respect to point-source discharges under CWA; prohibit dumping, discharging, or disposing of materials that may cause damage/prevent recovery or where they might enter/injure species; require certification that any dumping, etc. will not further decline the species or prevent/hampers recover (modify management to ensure)	
earth change activities - clearing of earth/upland clearing			
earth change activities - drainage modifications, maintenance, and management (flood control, stormwater disposal)			
earth crust extraction and earth movement		enforcement	

Working Groups Notes - Activities & Programs

education (NGOs, TV, radion, conferences)	assist in conservation		
effluent	pathogens from human sources, increased nutrients	water quality standards, waste management/treatment, sewer hook-up	
EIS		disqualify EISs with a conflict of interest; include cumulative impacts in assessment	
elevated CO2 levels	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	
elevated CO2 levels	mortality of corals		
elevated SST	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	
elevated SST	mortality of corals		
elkhorn mapping	rapid assessment; GIS -disease		
Emergency Restoration and Comp Res			
emerging diseases			
emissions (cars, smokestacks) - GGH			
endless study of reef decline w/out action			
enforcement		education, ID species, enforcement, regulation, consequences, inform judges	
enforcement of existing regs		community reporting of violations made easier; better/quicker communication with enforcement; central call-in for reporting; simplify reporting procedure (check boxes, better technology: GPS, internet access, cameras, access to water w/fully equipped boats); training extends beyond task force; coordination of agencies (maritime/terrestrial units); agency head contracted based on performance (not appointed)	
environmental groups			
EPA permit for discharge			
EPA Stormwater Phase 2 requirements		enforcement	
EQB erosion & sedimentation control plan		enforcement	
ESA	fee schedule for take; little enforcement; don't have structure to allocate funds; attorney [?]		
ESA research permits	virtually impossible to receive permits to conduct research; inability to obtain permits may direct research elsewhere		scientists do not really know what is causing the demise of these corals; microbes associated with African soil dust or ballast water [are] a possible cause [for the die-off of corals and Diadema]; in geologic history, there are periods of absence for both <i>A. palmata</i> and <i>A. cervicornis</i> , which were not caused by humans
eutrophication	water quality; impact to habitat		

Working Groups Notes - Activities & Programs

Everglades run-off		water management	
Everglades run-off			
excessive nutrients	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	
existing regulations		enforcement and compliance, funding, staffing, cooperation and coordination between Fed/State agencies (FWC, NOAA, DEP), State inclusion and definition of "resource" in enforcement plan (e.g., boating accidents), education (active/constructive knowledge), documentation of management changes, monitoring, designate areas (signage)?	
existing regulations		perform a regulatory audit; avoid duplicative regulations; utilize existing framework	
exotics?			
explanting	disease, diversity, health	would need permit from FWS & NMS (FWC genetics policy, health certification), require license	
explanting - structure - "emergency"		subcontract	
explanting - structure - "historical"			
farming in agricultural area			
Federal/State fisheries regs		enforcement of existing regulations	
fertilizer		establish protocol to prevent overfertilization (phosphate tax?) - residential and commercial	
fertilizer			
fill issues			
fireworm predation			
fish & lobster traps (pleastic, wood, metal frames (re-bar), wire mesh, stick, weighted with metal (wood ones)); STX singles (up to 3/trap)/STT string (one on each)	some traps without buoy ("pop-ups");		
fish collectors (hand, nets, slup gun)	physical damage to corals		
fishing		no activity zones	
fishing		do not solely penalize fishermen; smallest variable in demise of reefs	
fishing - hook/line	anchoring, garbage, line	clarify FL statute 253 (criminal activity clarification), anchor breakaway, mooring buoys, no anchor zones, preserve/sanctuary, education: charts, tank filling stations, boat ramps, bait shops, marinas, with fishing licenses, radio channel for info on coral; reef clean-ups; garbage enforcement	
fishing - traps	not on reefs		
fishing only on St. John Eastern End			
FKNMS - work [?.] permitting			
FKNMS closed fishing areas	buffer between trap fishery and corals		work with Monroe County Commercial Fishermen (MCCF) to develop a realistic management plan for trap fisheries is NMFS locates additional, factual information that suggest/indicate that trap fishing restrictions are needed
FKNMS Management Plan		enforcement of existing regulations	
FKNMS Management Plan	protect all corals		

Working Groups Notes - Activities & Programs

FL Bay water - wet year, lots of fresh water			
FL Park Service	carrying capacity, monitoring for disturbances, no [...?..]		
flood control	sedimentation, dredging		
fossil fuel use	global warming; coral bleaching and disease	implementation of an energy policy that abandons our dependency on fossil fuels	
fragments of [spp.]			
Fredriksted Pier anchorage areas		change anchoring zones; mooring sites for large vessels	
fuel, oil, hazardous waste spills			
Gamete collection	collecting spawn, plate settlement, various ecological parameters		Weil & Szmant
gametes, bundles			
gasoline boat for ESSO (Flat Key)	anchor	mooring buoys	
genetic diversity (genotyping)	2-3 polyps (Ac and Ap); collecting from various countries; physical parameters; Mona, Culebra, [...?..]		
genetic sampling - swab?			
genetic sampling - tip			
genetic tagging?			
genetics			
georeference			
GGH emissions			
GHG emissions	global warming, elevated SST, coral bleaching, coral mortality		
ghost traps	surge; physical damage from displaced or missing targets; retrieval (drag across reef, grapple or SCUBA of non-buoyed traps)	re-buoy traps via divers of ghost trap; yellow-tag on traps with GPS (VIDPNR); low compliance - increase enforcement	
global and regional activities			
global climate change	bleaching, warming and CO2, acidification		

Working Groups Notes - Activities & Programs

global climate change	kill/harm/cause decline; coral disease catalyst; hurricane intensity; coral bleaching	create take prohibitions that will prevent large emitters of GHGs from harming corals	
global climate change	increased water temperatures	an energy policy that abandons dependence on fossil fuels and adopts reef-friendly alternatives such as solar	
global climate change	sea temperature change	encourage renewable energy use: promote solar energy, prevent construction of coal-burning plants, encourage use of ethanol (incentives for distribution system), encourage energy conservation, encourage use of energy efficient boat engines	
global climate change			
global warming	increased temperatures		
global warming	warming sea temperatures	solar power, prevention of more coal plant construction, alternative fuels, encourage energy efficiency (cars, boats, vehicles), wind power, limit on emissions/fossil fuel use (relate these limits to take)	
global warming		decrease dependence on fossil fuels, decrease emissions, stop global warming	
global warming		activities should be subject to section 9 take prohibitions; address systematic threats	
global warming and change?			
golf balls			
grandfathered operations			
grapple anchors w/ [braha....]		OK for SPAW/in sand, moving balls (more people), chains	
grounding	physical damage		
grounding response SEFCRI - SOP (some volunteer groups)			
groundings		dredging to 50 ft.	
groundings	impact to coral colonies		
groundings by rec. boaters, illegal immigrants, border control	port restrictions not followed	enforcement, education	
groundwater seeps	nitrogen source for algal blooms; nutrient enrichment	collection of data to add to the understanding of nutrient dynamic and identification of sources	
growth/disease - nail reference, zip-tie (damage or over-growth)			
guide fishery - ling (spin [..?..]) or fly	marlin, wahoo, dolphin, bone-fishing		Erin Adams at MOTE, John [...?] grad student
hand lines	physical breakage (hand, fins, tank), spear strike	education	
hand lines	outside 15m; boats are small		

Working Groups Notes - Activities & Programs

harvesting activities (e.g. fishing)			
hay bales	plastic bags; marine debris		
hazardous materials handling and management	damage from spills (e.g. oil)		
heavy use of resources		enforcement of existing regs	
histology	2 cm2		
hook/lines	monofilament, sinkers	reef clean-up	
hook/lines	entanglement of monofilament; breakage of corals; leads; planers; lures	commercial fishers overregulated; options to livelihood; regulate more than just fishers	
hook/lines	little, if any, impact;outside 15m lower limit of staghorn	do not consider for regulation	
human activities	direct physical damage; spreading, increasing, or increasing damage from disease		
human behavior		behavior modification (education, fines, enforcement)	
hurricanes			
hurricanes	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	
identification of causes (diving, observations, upland development = bad condition) - led by Dave Olsen			
impervious surfaces	physically unstable streams; erosion; sedimentation; reduced aquatic life; declines in ecosystem function	maintain watersheds that are <10% impervious in an undeveloped state; impervious surfaces within watershed adjacent to the Tres Palmas Marine Reserve be kept <10%; designate a Special Planning Area in watershed adjacent to reserve; use similar approach in areas with populations of Acropora	
improper anchoring	may constitute take		
improving water quality			
increased temperature	"take" of corals		
industry discharges			
inlet dredging	damage to reefs	relocate existing Acropora	
insect spray			
internet trade		state documentation of harvest	
introduces species (bacteria/GMOs for sewage treatment; ballast water)			

Working Groups Notes - Activities & Programs

in-water construction activities	ancillary impacts (fueling, spills)		
Jack nets (beach seine nets)	shallow areas; snorkelers in snag		
jet ski		banned by refuge	
jet ski	groundings		
jet ski			
jet ski	regs - slow near shore (300 ft. from shore/reef)	may not know where reefs are; operator education; enforcement of current rules	
kayaking	groundings		
Keys Area of State Critical Concern		enforcement of existing regulations	
kiteboarding	groundings		
lack of comprehensive land/water use plan		comprehensive land/water use plan (revise documentation and process, \$\$, single tier plan)	
lack of pump out stations		more enforcement	
land and coastal modifications/disruption of flow			
land and water use			
Land conservation and acquisition		enforcement and compliance (\$, staff)	
land development	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	
land development	increased sedimentation		
land use	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	
land-based pollution			
land-based vs. in-water construction (COE)			
land-based/surface run-off	nitrogen source for algal blooms; nutrient enrichment	collection of data to add to the understanding of nutrient dynamic and identification of sources	
landfill seepage			
landfills			
landfills (location, make, and operation)		enforcement	
large container ships	groundings, head discharge, ballast (invasive species)		
large scale aquaculture cages proposed in 20 hectare area 3 nm from shores of Punta Higuera in Rincon	unverified, but could include: increase nutrients, physical damage from cage detachment/collision, reduced larvae supply due to larval collection at AC site; introduction of disease	postpone aquaculture operations until full impact of operation on Acropora can be assessed completely	

Working Groups Notes - Activities & Programs

large vessel anchorages	designated by coast guard; no regs or process for desig.		
large vessel anchorages		modify footprints	
large vessel groundings	localized impacts		
large vessels - cruise and navy ships	discharge, port activity		
Law 241 for critical wildlife		enforcement	
limits on maritime zone (how close you can build to coastline)	ambiguous	need redefinition, effective enforcement	
live aboards	sewage		
live rock aquaculture			
lobster	physical breakage (hand, fins, tank), spear strike	education, education during mini-season	
lobster and conch by hand	physical damage by collection		
lobster by hand	snorkel or SCUBA		
lobster traps	buoy line	target sandy areas, remove prior to storms, singles, abandon/rescue, require buoy (enforcement), tag number - no ghost trap, encourage retrieval, clean up; biodegradable trap construction	
lobster traps	negligible impacts on seagrasses and corals in the FL Keys	only time there is potential impact is during hurricanes; areas occupied by Acropora are typically avoided;	number of lobster traps has been reduced by 60% in last 13 years
lobster traps	very small on corals	target sand around and between reefs; identify stands by buoying these coral stands; fine fishers for fishing on bottom identified; educate users of areas where corals are and of how important it is to protect them; have a program for new trapper on all facets of the industry, including corals; self-enforcement	
lobstering?		stop sportman's season	
Local Action Strategy Report		go back to LAS: endorse	get this from Lee
local agencies		need funding	
local VI Water Pollution Control Act	assist in conservation		
locals boating			
loss of genetic diversity	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	
loss of mangroves		expand mangroves	
loss of mangroves			
loss of wetlands		enforce "no regional net loss of wetlands"; expand wetlands	
mangrove restoration			
map and assess health of Ac and Ap		TNC and NOAA funding; photo & GPS; disease/health; to CZM through EE Advisory Committee	

Working Groups Notes - Activities & Programs

Mapping Ap Culebra	water quality, depth, % cover, snails, etc.		
mariculture			
marina development	"gentrification", plumbing	"no discharge" zone	
Marina/Mooring Field Siting Plan		enforcement and compliance (\$, staff)	
marinas	concentrations of bottom paint		
marine debris			
marine debris	breakage; live tissue abrasion; shading	marine debris removal projects	
marine debris	impact to coral colonies		
marine discharge			
marine industry maintenance activities (anti-fouling)	illegal materials (e.g. TBT)		
Marine Researve at St. Thomas	no fishing; line fishing w/permits; bait fish w/cast net		
marine reserves	prohibit extractive activities; help recover fishery resources; protct biodiversity; protct Acropora from fishery gear impacts; minimal success in preventing impacts from degraded water quality	patchy enforcement; more information needed on location and status of species populations within PR MPAs; funding for development of the Tres Palmas Marine Reserve management plan; funding for MPAs in PR with significant Acropora populations; provide local assistance in the design, implementation, operation, enforcement and evaluation of management plans (specifically in activities designed to conserve Acropora)	
marine transportation		enforcement of existing regs	
maritime construction	loss of equipment	contractor awareness; implement BMPs and enforce; avoid construction during spawning; curtail activity during high-stress periods (e.g., bleaching); increase buffers; stricter geological reviews	
maritime construction			
maritime development			
mass tourism		encourage eco-tourism	
Medical Science College	effects of septic tanks, status of Ap, mucous extraction		
megayachts		mooring system; target sandl designated anchorages; trip line (SFA); require mooring for commerical vessels (charters - dive, snorkel, sail)	
military vessels			

Working Groups Notes - Activities & Programs

mitigation projects		enforcement	
monitoring		improve monitoring for development of white papers - data transfer/data center/clearinghouse	
monitoring - video, quad.			
monitoring DPNR - VICRMP	5+ years; all sps - video, quadrats; driving research into mechanisms; 3 projects funded		
Monroe County Planning			
moorings		monitor	
Mosquito control of pond by insecticide	insecticide into Megan's Bay when rains; illegal pesticide into Bay; heavy rains lead to run-off into Bay; no more grass beds		
MPAs	assist in conservation		
nationwide and general permits		enforcement	
natural abrasion	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	
natural breakage	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	
Navy vessels	anchor	mooring buoys	
NCRS programs	incentives for vegetation, filter strips		
nearshore construction		enforcement of existing regs	
need CZM permit for restoration		work with CZM to get exclusion for restoration	Commissioner Dean Plaskett
no net fishing on south of St. Thomas (North only)			
No Net Wetlands Loss Program/Plan		enforcement and compliance (\$, staff)	
non-point source discharges			
non-point source program		funding, but no staff	
non-point source run-off (residential, etc.)			
notification process		clearinghouse	
novel chemicals as defense mechanisms	repel algae, chemical within algae to harm coral (parites?), stress molecules		
NPDES point and non-point		enforcement	
NPS			
NPS and DFW	require monitoring, collection, manipulation		

Working Groups Notes - Activities & Programs

nursery (NPS)	no live elkhorn/staghorn		
nutrient levels		increased water quality and habitat monitoring; designate Broward Ac thickets as CH; investigation of tolerance thresholds for Ac	
nutrients			
ocean pollution			
offshore drilling			
offshore oil development	further destruction of coral reefs	stop offshore oil development	
oil & gas exploration off coast			
oil recycling	assist in conservation		
oil refinery ships			
oil tanker anchoring		mooring sites for large vessels	
operators for hire		education, laminated charts of areas	
Orinoco River Plume			
other disturbances (similar to development or dredging)		ban if within several miles of habitat	
outplantings	no genetic distinction on regional scale; not a major genetic problem		
Outstanding FL Waters		enforcement of existing regulations	
pCO2, nutrients	branch tips 5cm in length		
permit fishing	no take issues		
permits - DPNR & NPS			
permitted nursery sites			
permitting		monitoring permit conditions; appropriate fines and consequences	
permitting		enforce permit conditions; engage independent scientists in the permitting process (need funding); deny contracts to contractors with previous violations and to localities without dune vegetation, sand by-pass, and land-based erosion sources; expand pool of contractors to include foreign-owned firms (Congress); Jones Act	
personal tank fish collection			
phosphate mining	algal blooms, red tides		
phosphate mining			
photography	standing, holding, gear	education: charts, tank filling stations, boat ramps, bait shops, marinas, with fishing licenses, radio channel for info on coral; diver awareness education: fin length, buoyancy, gear storage (cameras); "When you touch me, I die." criminal/civil penalties, "What is Acropora?"	

Working Groups Notes - Activities & Programs

photography	tank, pressure gauge, standing, fins, cameras, holding, touching, laying on coral	education, orientation on way out not to touch, info at tank fills, laminated info with vessel registration (anchoring tips, corals), consequences (criminal and civil), repair shops, collect FL numbers into database, SeaTow call enforcement when moving boats? - required by law to report groundings	
photography	fins, buoyancy	discourage use of gloves, weight, B/C, educate at dive shops (gear, air, rental), education at certification, buoyancy, coral care, fin type, billboards, radio PSAs, educational signs at boat docks/ramps, tents at hotels/restaurants	
photography			
physical destruction			
pinfish bait trap	storms, misplaced	target spots, buoy scope, trap retrieval, after season dischar[...?]	
pipelines/cables		contractor awareness; implement BMPs and enforce; avoid construction during spawning; curtail activity during high-stress periods (e.g., bleaching); increase buffers; stricter geological reviews	
point source discharges			
point source run-off			
political will against single tier		everything within island is in the CZM	
pollution		giant protein and carbon skimmers out top of Keys	
pollution	water quality; impact to habitat		
pollution		increased water quality and habitat monitoring; designate Broward Ac thickets as CH; investigation of tolerance thresholds for Ac	
poor navigation by commercial/recreational boats	groundings	signage; charts; mark reefs; education to know about impacts	
population density		establish carrying capacity for areas and resources (recreational)	
population density		establish South FL carrying capacity (human) standards (population limits, baseline, cumulative impacts); update coastal FL study	
port anchorage	vessel groundings and misplaced anchors	designate Broward County Ac thickets as CH	
port deepening		contractor awareness; implement BMPs and enforce; avoid construction during spawning; curtail activity during high-stress periods (e.g., bleaching); increase buffers; stricter geological reviews	
port deepening			
possession			
power boating	groundings	require a license, SeaTow call enforcement when moving boats? - required by law to report groundings	
power boating	groundings, Sea Tow/salvage, prop damage	boater education, avoid shallows, protocol/permit, replace markers after storms, more markers at reefs ("Danger Shoals")	
power boating	groundings & sin[...?]	education for best removal, TV, radio, billboard, buy fishing license, boat registration, safe boating, coral conservation, info at last toll booth, visitors centers	

Working Groups Notes - Activities & Programs

PR Land Trust	land acquisition for conservation	streamline process for land acquisition (for conservation)	
PR Law 147 (Protection, Conservation, and Management of Coral Reefs)	mandates conservation and management of coral reefs to protect functions and values	implementation regulation is currently under review (i.e., regulations currently being drafted by DNER); assist DNER in the full implementation of Law 147; give regulatory authority to DNER along with ACOE (and PR Planning Board, ARPE, EQB) to prevent development directly threatening	
predation	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	
predation by snails	live coral loss and population decline	establishment of a snail removal program (e.g. volunteer groups a la Adopt-A-Highway)	
predation observation			
Private citizen [...] - individual, group		allow	
private dive	tank, pressure gauge, standing, fins, cameras, holding, touching, laying on coral		
private dive operators	standing, touching, running into coral	better education of clients about underwater conduct (e.g. avoid contact; proper buoyancy control)	
private fish - chumming	fishing litter (chum boxes, plastic, boxes, Publix bags)	biodegradable "label", only paper bags at tackle shops	
private fish - hook/line	reels with monofilament, sinkers	restrict fishing in certain areas with buffer zones	
private fish - lobster		do away with mini season	
private fish - netting			
private fish - spearing			
private fish - traps (stone crab)	storms, weight/scope, line on bottom	target sand, retrieve prior to storms, ID sites with buffer zones for gear (zoned areas), string "trawls" in buffer zone (1 trap/1 buoy), regs to allow trap move when on reef	
private fishing boats	anchoring directly on coral formations	enforcement; enforcement; review of applicable regs and current enforcement practices; adoption of anchoring rules specific to areas of Acropora habitat	
private marine life collectors	not in elkhorn/staghorn zones		
private vessels	maintenance activities (painting, scraping)		
private/recreational vessels		mooring system; target sand/ designated anchorages; trip line (SFA); require mooring for commercial vessels (charters - dive, snorkel, sail)	
professional photography			

Working Groups Notes - Activities & Programs

prop wash	increased sediments (Hawks Cannel)	restrict weight, tug/pushboat activity	
pulse events		more regulation and chronic	
purse seine net in water to release juveniles [in wanted fish?]			
rampant beachfront construction		contractor awareness; implement BMPs and enforce; avoid construction during spawning; curtail activity during high-stress periods (e.g., bleaching); increase buffers; stricter geological reviews	
reattachment - manipulation			
recreational - fishing	anchoring, line	clarify FL statute 253 (criminal activity clarification), anchor breakaway, mooring buoys, no anchor zones, preserve/sanctuary, education: charts, tank filling stations, boat ramps, bait shops, marinas, with fishing licenses, radio channel for info on coral; reef clean-ups	
recreational activities	impact to coral colonies		
recreational boaters		info packet with [..?..]	60k vessels registered USCG; DNER register
recreational boaters	navigation issues; impact to corals; violation of rules/regs	mandatory boating license required to operate a vessel in the FKNMS; require some sort of minimal educational materials with fishing licenses; educational materials at boat ramps, dive shops, marines, bait and tackle stores, with licenses/registration	
recreational boating	groundings	public outreach & education; do not unduly restrict access and enjoyment of coral communities	
recreational boats	marine debris		
recreational conch fishing	snorkel or SCUBA		
recreational divers		educational materials at boat ramps, dive shops, marines, bait and tackle stores, with licenses	
recreational fishers		educational materials at boat ramps, dive shops, marines, bait and tackle stores, with licenses	
recreational fishing	anchor; hook/line (not a lot); spearguns; losts of [s...?] fishing	few restrictions; moorings	
recreational fishing - castnet	grass beds (for bait)		
recreational fishing - hook/line	entanglement of monofilament; breakage of corals; leads; planers; lures		

Working Groups Notes - Activities & Programs

recreational fishing activities targeting coral associated fish/inverts		clearly identify and address ecosystem impacts; consider both direct and indirect impacts; practice activity in ways that do not further jeopardize species; immediate end to overfishing; immediate determination of status of all coral-associate fish/inverts included in FMPs (stop fishing until status known); increase use of no-take MPAs in coral areas to cover at least 20% level identified in US CRAP; require certification that fisheries will not further the decline of Acropora or prevent/hamper recovery (modify management to assure this)	positive impacts of no-take marine reserves
recreational fly fishing			
recreational hook/line			
recreational hookah diving	fins, sitting, standing, buoyancy, weights, grabbing corals	education, mass media, workshops, Channel 5, Comcast, hotels, cruise ships, radio PSAs, billboards, funding for educational materials, boat ramps, gas stations, FL toll booth info, FL boating license, visual check by divers	
recreational lobster - by hand			
recreational photography			
recreational powerboating	anchoring, groundings in shallows, discharge from heads	clarify FL statute 253 (criminal activity clarification), anchor breakaway, mooring buoys, no anchor zones, preserve/sanctuary, education: charts, tank filling stations, boat ramps, bait shops, marinas, with fishing licenses, radio channel for info on coral; benefits of not dumping bilge; pass test via boat license (include coral awareness); bottom finders	
recreational sailboating	anchoring, groundings in shallows, discharge from heads	clarify FL statute 253 (criminal activity clarification), anchor breakaway, mooring buoys, no anchor zones, preserve/sanctuary, education: charts, tank filling stations, boat ramps, bait shops, marinas, with fishing licenses, radio channel for info on coral; benefits of not dumping bilge; pass test via boat license (include coral awareness); bottom finders	
recreational spearfishing			
recreational spearfishing	direct by spear, fish going into corals; physical damage		
recreational spearfishing	shoot & miss; shoots fish into crevice - physical damage; hands break corals		
recreational tank diving	fins, sitting, standing, buoyancy, weights, grabbing corals	education, mass media, workshops, Channel 5, Comcast, hotels, cruise ships, radio PSAs, billboards, funding for educational materials, boat ramps, gas stations, FL toll booth info, FL boating license, visual check by divers	
recreational tropical fish collection			
recreation-based stressors	abrasion; breakage		

Working Groups Notes - Activities & Programs

recruitment process			
reduction of sedimentation		milestones	
regulations/policy - CZM program			
regulatory agencies	assist in conservation		
reintroduction potential problems			
relocation - transplants			
reproduction	~100 bundles		
research		increase funding - nutrient sources, landbased and offshore sources	
research on reproductive ecology	collection of gametes as they are released by colonies in the wild; collection of small tissue samples	include research exemptions in 4(d) rule; allow collection of spawn by recognized scientists for the culture of larvae for research and restoration	
research vessels	groundings, Sea Tow/salvage, prop damage	boater education, avoid shallows, protocol/permit, replace markers after storms, more markers at reefs ("Danger Shoals")	
researchers			
restoration		funding, "restoration team" volunteer, SEFCRI emergency response/guidelines to groundings, license for boating,	
restoration		buffer?	
restoration - artificial reefs			
restoration - MPAs			
resuspension of sediments	reduction of light; turbidity; interrupt physical/chemical processes; water quality		
revised TPDES regulations (apply to development of > 1 acre)	assist in conservation		
Rig removal: A recently published Minerals Management funded study identified 7 species of Caribbean corals on rigs off Louisiana; "when a			The [listing] will create an additional and expensive layer of bureaucracy; the [listing] will lead to increased litigation and loss of scientific credibility
river discharge			
Rivers & Harbors Act Corps Permit			
roller frame bait shrimping	done in shallow grassbeds in FL Bay	no trawling of any kind on oceanside of Keys/S. FL	
run-off	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	
run-off	increased sedimentation		
run-off resulting from development	indirect impacts		
run-off sediments from construction		hold construction sites accountable	

Working Groups Notes - Activities & Programs

sail boating	groundings, Sea Tow/salvage, prop damage	boater education, avoid shallows, protocol/permit, replace markers after storms, more markers at reefs ("Danger Shoals")	
sailboating	groundings, drag w/heel, [?.] w/wind	SeaTow call enforcement when moving boats? - required by law to report groundings	
sailboating	groundings & sin[.?.]	education for best removal, TV, radio, billboard, buy fishing license, boat registration, safe boating, coral conservation, info at last toll booth, visitors centers	
sailboating			
sailboats	pollution from liveaboards at Water Island; raw sewage; 80-90% use anchors	enforcement of rules (anchoring in areas not permitted); ID areas; 30 days then move liveaboards	
sailing		conservation education; Dept. of Tourism "endorsement" (require conservation training in order to receive it)	
sails		depth of water	
salvage			
salvage dives			
salvage ships			
sampling techniques	non-destructive; removal of small tissue samples; collection of colonies; translocation; aquaculture; stablization; sampling of gamete bundles	allow under 4(d)	
sand mining (on coast/dunes, etc.)		enforcement	
Sea Tow			
sediment accumulation	affects substratum; impact to habitat		
sediment control		more enforcement; construction contractor education and awareness	
sediment shading	coral degradation	do not translate this stressor into unduly brudensom regs over far less significant, yet more manageable stressors	
sediment, [?.], lab	5 cm branch tips		
sedimentation	water quality; impact to habitat		

Working Groups Notes - Activities & Programs

seine net fishing	little, if any, impact; small boats; no more than 6 full time operations; mostly targets areas with gravel bottom; avoid areas with Elkhorn and Staghorn	do not consider for regulation; utilize local knowledge of these fishermen - let them tell you how and where coral abundance has changed	
seine nets	less than 18' [?]; no regs to keep away from coral; set by free diving; always tended; avoid coral		
septic tanks			
septic tanks	leeching		
septic tanks	leaching		
sewage		nutrient stripping standards, Federal funding, stop permitting direct discharge/outfalls or deep-well injection with only secondary treatment, enforcement of existing regs (Keys No-Discharge Zone, FKNMS regs), expand Keys NDZ to NMS Fed. waters, funding, encourage compliance, education & outreach (knowing the difference b/wn septic and sewer)	
sewage	direct outflow; primary treatment	move to secondary or tertiary treatment	
sewage	nitrogen source for algal blooms; nutrient enrichment	collection of data to add to the understanding of nutrient dynamic and identification of sources	
sewage		Federal funding for advanced nutrient removal in Keys, Broward, Dade, Palm Beach; require tertiary nutrient-stripping treatment in all comprehensive land-use plans for areas near coral reefs; enforce regs already in place; stop permitting deep injection of secondarily-treated waste; prohibit direct ocean discharge; expand Key NDZ to Fed Sanct. waters	
sewage	direct discharge into sea; declining coral health; deterioration of water quality	end Consent Order with EPA allowing input of primary sewage by government plants; better siting of public works plants (out of sensitive mangrove environments); monitoring of plants in private developments; controlling drainage from septic tanks piped directly into natural guts; controlling sewage from live aboard yachts	STFA members mapping sewage inputs around the island
sewage - deep-injection wells			
sewage - illegal dumping (commercial/personal vessels)		eliminate; require AWT for cruise ships	
sewage - sewer outfall pipes		close down ocean outfalls; extend outfalls; guarantee improvement of treatment	

Working Groups Notes - Activities & Programs

sewage (partially to completely untreated)	pumped into ocean; damages reeds	stop such activity all-together	
sewage discharges			
sewage outfalls		more enforcement	
sewage run-off		hold sewer discharge accountable; police activity	
sewer outfalls	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	
sewer system implementation		need funding	
Shallow injection wells regs		enforcement of existing regulations	
sheet pile wall pier	resuspension of sediments		
shelling			
shelling	not in elkhorn/staghorn zones		
ship paint	impacts on Ac		
ships and boats	anchoring	discourage anchoring near coral reefs	
Shoreline Priority Plan	existing sites have priority	enforcement and compliance (\$, staff)	
slop-tank use		scrutinize use	
small power boats	anchoring, groundings in shallows	clarify FL statute 253 (criminal activity clarification), anchor breakaway, mooring buoys, no anchor zones, preserve/sanctuary, education: charts, tank filling stations, boat ramps, bait shops, marinas, with fishing licenses, radio channel for info on coral; pass test via boat license (include coral awareness); bottom finders	
snail predation			
snail removal			
snorkeling	anchoring, standing, holding, gear	drift diving, clarify FL statute 253 (criminal activity clarification), anchor breakaway, mooring buoys, no anchor zones, preserve/sanctuary, education: charts, tank filling stations, boat ramps, bait shops, marinas, with fishing licenses, radio channel for info on coral; diver awareness education: fin length, buoyancy, gear storage (cameras); "When you touch me, I die." criminal/civil penalties, "What is Acropora?"	
snorkeling	standing, fins, cameras, holding, touching, laying on coral	education, orientation on way out not to touch, info at tank fills, laminated info with vessel registration (anchoring tips, corals), consequences (criminal and civil), repair shops, collect FL numbers into database, SeaTow call enforcement when moving boats? - required by law to report groundings	
snorkeling	fins, buoyancy, walking on corals, standing, grabbing corals	discourage use of gloves, weight, educate at dive shops (gear, air, rental), buoyancy, coral care, fin type, billboards, radio PSAs, educational signs at boat docks/ramps, tents at hotels/restaurants	

Working Groups Notes - Activities & Programs

snorkeling	on surface (fins, walking, standing); 7 dive shops on one island : 50 mooring buoys; sunscreen impacts on reef?; contact with hand	target sand for shore entry; all operators give conservation talk; add video?; selection [?]	
snorkeling		conservation education; vests or "hoodles" for non-swimmers; Dept. of Tourism "endorsement" (require conservation training in order to receive it)	
snorkeling	fins, sitting, standing, buoyancy, weights, grabbing corals	education, mass media, workshops, Channel 5, Comcast, hotels, cruise ships, radio PSAs, billboards, funding for educational materials, boat ramps, gas stations, FL toll booth info, FL boating license, visual check by divers	
Society for Marine Env	NEW response, emergency permit		
spatial modeling Ap and future Ac	potential habitat, W + E wastes		
spawn collection		outreach	
spearfishing	spear strike	education	
spearfishing	physical damage by collection		
sponge boring	coral degradation	do not translate this stressor into unduly burdensome regs over far less significant, yet more manageable stressors	
sponging	not in elkhorn/staghorn zones		
State fishing regulations		include consequences and anchoring	
STJ & STT - ocean model, ocean currents, spawning, connectivity			
stone [..?] traps	storms, misplaced	target spots, buoy scope, trap retrieval, after season dischar[..?]	
stonecrab traps	negligible impacts on seagrasses and corals in the FL Keys; offshore traps have no impact (do not get pushed up on reef during storms)	only time there is potential impact is during hurricanes; areas occupied by Acropora are typically avoided; do not consider in 4(d) because all activity occurs on Gulf side of Keys	undergoing similar reduction to lobster trap fishery in Keys
stonecrabbing	Gulf side where no known populations of these corals; done in sandy/grassy bottom	include these areas in any buffer zone concept	
storm damage		enforcement of existing regs	

Working Groups Notes - Activities & Programs

stormwater discharge	nitrogen source for algal blooms; nutrient enrichment	collection of data to add to the understanding of nutrient dynamic and identification of sources	
stormwater run-off		injection wells, enforcement of existing regs	
stormwater run-off	pesticides in run-off, nutrients and other pollutants in run-off, destruction of corals	prevent run-off; clean water for corals	
stormwater run-off	pesticides in run-off, nutrients and other pollutants in run-off, destruction of corals	development of BMPs to eliminate run-off	
stormwater run-off		do not permit new development in areas near coral reefs that do not contain/treat stormwater run-off	
stormwater run-off			
stormwater run-off (urban areas, clearing of habitat, impervious areas)		stormwater management plans	
stream "cleaning" - hurricane and floods			
stringent water quality standards	assist in conservation		
sundry discharges (bleachings and various chemicals)		police activity	
Superfund site?			
swinging on anchor			
take		management of take at what level (acreage vs. colony)?	
take		apply take prohibitions in ESA Section 9 to both species; avoid blanket exemptions for broad human activities	
tankers	\$, anchorage	anchoring zones (move them close A or move...use "B" [??])	
tankers	anchor	mooring buoys	
tankers (< 150 m)			
tankers/freighters	groundings, Sea Tow/salvage, prop damage	boater education, avoid shallows, protocol/permit, replace markers after storms, more markers at reefs ("Danger Shoals")	
tarpon fishing	no take issues		
Terrestrial Endangered and Indigenous Species Act	requires permit from Div. Of F&W; transport permit	researchers need education and outreach	
terrestrial source pollution			
Tier 1 Zone - COE			
tire recycling	assist in conservation		
tourism	use of resource		
tourists			

Working Groups Notes - Activities & Programs

tourists boating		laminated chart on console; operators, dive shops, service providers (hotels, cruise ships, video on cruise ship prior to landing, airports, shuttle/busses - dock to boat video about 5-8 min.)	
tourists snorkeling	hand damage; St. John Underwater Trail closed due to tourist damage	rentals, info on planes, TV hotel, dive shops; airlines agree to show conservation clips to passengers; info passed out by USVI DFW	
training in methods			
transient population (~ 2 million)			
transplanting from other nations in Caribbean			
trap fishing	little, if any, impact; outside 15m lower limit of staghorn	do not consider for regulation	
traps	greater than 70'; avoid reefs		St. Thomas and St. John; St. Croix is shallower; bycatch studies indicate no traps <70'
treasure excavation			
trolling			
tropical fish collection		allowed by permit only;	
tugboat cable dragging	chainsaw effect on reefs	use floating line; tow alongside only	
turbidity	sedimentation		
turbidity		increased water quality and habitat monitoring; designate Broward Ac thickets as CH; investigation of tolerance thresholds for Ac	
UM coral nursery			
unburned fuels			
untreated sewage			
upwelling	excess nutrients		
upwelling			
USFWS - [?] also nursery project			
USGS - monitor incl. Colonies w/in NPS (disease, physical damage, predation, bleaching, size class, swab)	4 years		
UVI - genetics (genotyping)	Ap		
UVI - monitor bleaching and disease	Ap		
VI Port Authority		tie Federal funding for Territorial programs to specific milestones for reducing sediment and sewage input	
Vieques (NCRI) - historical change of Ap			Raquel Hernandez, USF PhD
volcanic ash			
warm water discharges			
waste management - commercial		composting?, dry sludge, centralize chemical balance, capacity	
waste management - cruise ships		composting?, dry sludge, centralize chemical balance, capacity	
waste management - recreational (boating)		composting?, dry sludge, centralize chemical balance, capacity, salt-water system	

Working Groups Notes - Activities & Programs

waste management - residential		composting?, dry sludge, centralize chemical balance, capacity	
wastewater	increased nutrients (nutrient-enriched offshore environment)	water quality standards, waste management/treatment, sewer hook-up	
wastewater		advanced wastewater treatment (tertiary treatment, storm runoff, land-based, UIC wells)	
wastewater	pollution, reef decline	Federal funding for upgrading treatment to advanced, nutrient-stripping capacity	
wastewater		allocated Federal funds for wastewater treatment upgrades in the FL Keys	
wastewater		FUNDING for adequate facilities	
water quality	harmful algal blooms, loss of habitat, low coral recruitment and survival	regular performance of nutrient water quality monitoring; identify point and non-point sources; institution of appropriate remedial measures	
water quality		Dissolved Inorganic N < 1.0mM/l; Dissolved inorganic and organic P < 0.01 mM/l; chlorophyll a < 50 ppb; temp. < 1 degree C above historic max. monthly avg.; turbidity < 10 NTU; monitoring; enforcement	
water quality	disease	stress connection between local level activities and declining water quality in educational materials; address issues from Mississippi/Gulf of Mexico; address South Florida water management issues (Lake Okeechobee, the Everglades, river, creeks, canales, etc.)	
water quality			
water quality certification process EQB		enforcement	
Water Quality Improvement Plan			
water, sediment, and nutrient discharges	potential influence on coral reefs in PR		
wetlands loss		wetlands mitigation and restoration	
windsurfing	groundings		
wire leaders		during fishing and if line [..?..]	
		address SST	
	stresses on larvae, settlement, juveniles, spawning adults		
		enforcement and funds for enforcement	
		updating of charts	
		exempt all in compliance with existing FWC, NMS, & NPS permitting	
		add PRD staff to review team	
		prohibit collection in Acroporid reef rec + commercial	
		HCP assoc. w/substrate harvest, w/octopus and [???], etc. (research OK)	

Working Groups Notes - Activities & Programs

		delegate in Federal waters to DNER	
		notification to NOAA Fisheries Service	
		hard copies [??]	
		webpage notification	
			Megans to Hall Bay - cobblely holes good for fishing
		performance-based permitting and funding	
		increased staffing for enforcement	
		clearinghouse	
	ownership?		
		notification of collectors (newsletters, licenses)	
		education & outreach & enforcement	
		watershed management vs. political boundaries	
		reduce political influence	
		comprehensive land/water use plan (islandwide and municipalities)	
			vifishandwildlife.com. - summarize rules and regs
		sufficient fines - current system effective for homeowners but not for major developers (political will); fairness of compliance	
		partner with researchers and fishers to locate colonies	
		enforcement - need staff to follow up on permits issues; need funding for more officers/staff	
		Tier 2 more stringent - change Tier System so it follows coastal zone boundary	
		increased money for research	
		education and outreach - targeted (environmental lobbyist); stronger marine science program in schools	
		Agency coordination - no coordination at the regional level (NPS, NOAA, EPA, USGS)	
		strengthen APCS	
		broad recycling program	
	cumulative/synergistic impacts		
			West End of STT - University
		enforcement - who?	
		education - public schools, charter industry, hotel "tents"	
		harmonize laws for development and land-use: potential for better enforcement; Federal assistance to coordinate (via EPA and NOAA) --> All Federally funded and permitted construction projects should be subject to strict guidelines for erosion or BMPs	
		education and outreach - technical role models; environmental sciences at all levels; changing programs to tie in actual experience (e.g. internships)	
		standards/place burden of proof on construction near corals - show damage not caused - mandatory condition for offshore presence	
		implement retreat regulations	
		implement sand by-pass around all inlets	
		implement dune vegetation on coast	

Working Groups Notes - Activities & Programs

		reporting online - duplicate other reporting, streamline	
		streamline permitting	
		incidental take - monitoring, fragments of opportunity	
		online form?	
		notification	
		use FL as model for USVI and PR	
		fact sheet for locator database (e.g., sawfish)	
		increased navigational aids and markers, mark reefs [???	
		"American Idol Coral" - competition among aquarists to fund and develop an aquarium nursery	
		education - local public schools/universities (local and domestic); aquarium or traveling tanks to schools	
		Culebra & La Puerag [?] - signs to inform at coastal areas; contact local schools pre-field trip at school board meeting	
		posters at marinas, gas stations, restaurants, marine stores	
		banning of or alternatives to silt fences	
		education of all enforcement officers (police, DNER) to enforce all laws	
		funding for enforcement	
		watershed impervious surface limitations	
		licensing/certification process - violate permit conditions, revoke license	
		regulate use of heavy machinery	
		seasonal permitting (issue permits in dry vs. wet season)	
		congressional representation (need voting member)	
		electoral college representation	
		sustained economy for USVI residents	
		> ability to interact across international boundaries (BVI, Africa (dust), Venezuela, Aruba (sulfur dioxide), PR)	
		Fed. Money for solid water treatment	
		Fed. \$\$ for earth (none specifically allocated)	
		prosecuting attorney in AGs office for environmental issues	
		political will	
			SCUBA vs. snorkeling interaction
			imm. early life history
			environmental thresholds
		good science identifying culprits/causes (linking impacts to causes/sources)	
		establish a linked network of MPAs	
		management plan of local reefs	
		adherence to Reef Manager's Guide to Bleaching	
			force researchers to protocol with satellite images
			baseline map for now
			anthropogenic impact areas - USGS (PR specific)
		zone of activities - mooring buoys, fishing permitted	
		incorporate global influence (increased irradiance, SST, turbidity)	
		better training for agency personnel	
	high SST		

Working Groups Notes - Activities & Programs

		sanitation	
			no regs. Against commercial fisherment - STFA - [...] local government [con...?] impacts for: [s..?], sediments, dredging
		increase enforcement	
			priorities: anchoring, outflows (nutrients, freshwater), beach renourishment, fishing line, increased SST, land-based non-point source run-off, garbage
			FL boat license - divers, anchoring, marker/shallow ID
			increase enforcement
			new regulations come with money (implementation, enforcement)
		adopt a strong habitat conservation plan	
			extend all available protections
			establish blanket regulations to automatically extend all section 9 take prohibitions to threatened species (a la USFW)
		promote implementation of Specially Protected Areas	
		establish research and monitoring programs to identify factors responsible for Acropora recovery, persistence, or decline	

Physical & Biological Features	Geographic Areas
"special" resilience at 52 ft.	
[discharge?] free?	
Acropora out to 80' deep	
algae-free substrate for recruitment	
clean water under 15 [ntus?]	
clean, clear water	
clear water	
colonies occur in dense patches; healthy coral stand	land or sea (or both?) areas adjacent to Tres Palmas Marine Reserve
colonization potential	
consider natural events: fireworms, predatory snails, damselfish	
currents for food	
dead skeletons	areas of abundance prior to regional decline
dead stands	
density of population	
depth	
depth = anchoring and groundings (Broward: staghorn 15-20 ft; Palm Beach: staghorn 45-40 ft.; elkhorn 1-15 ft)	
depth appropriate under 50 ft.	
depth range	
elkhorn	Horseshoe Reef
existing populations (remnant populations)	
few sediments	
freshwater intrusion	
genetic diversity	
genetic diversity	Ac thickets off Broward County
genetic tolerance of thickets to stressful environmental conditions (e.g., turbidity, cooler water temperatures, more resistant to disease)	Ac thickets off Broward County
genotypes and connectivity?	
hard bottom	
hard substrate	

hard, sediment-free, macroalgal-free substrate (actual number or <?%)	
high currents	
high energy system	
high energy system	
high water quality	
high wave energy (Ap)	
largest healthy stands of staghorn populations (genetic resevoirs)	entire reef system of Central and Northern Broward (Port Everglades to Hillboro Inlet)
larvae transport routes/currents	
larval recruitment and survival	
little inflow/influence of FL Bay water (increased nutrients), best water quality	Carysfort
long-term regional connectivity	consider areas outside of US jurisdiction (assess areas of identified living colonies)
look for Southern source site [f...]	
spawning	
lots of flushing	
low nutrient level	
low nutrients	
low nutrients (nutrient load)	
low sedimentation	
lower water temp, more stable, cold water upwelling	Broward County - North of Port Everglades to Community Pier, Hillsboro Inlet
lower water temperature	reef tracts of Palm Beach County
lower water temperature	Broward County reefs north of Port Everglades
nutrients	
nutrients (no universal standard)	
optimal temperature	
pH	
pH	
population density	
proper water temperature range	
recruitment problem	
remaining thickets and largest known population in US	Ac thickets off Broward County (environmental refuge from WBD conditions)
resilient populations?	
salinity	

sediment-free water	
settling site	Lauderdale-By-The-Sea Community Pier
sexual reproduction (adult and recruit densities)	Ac thickets off Broward County
shallow water	
shallow, nearshore, hard bottom	
special favorable conditions (persistence)	areas where sizeable numbers of colonies have persisted
stable SST	
stagnant - cooler temps and further north	
substrate	
substrate	
substrate	
substrate	
suitable substrate	
sunlight	
temperature	
temperature	
transparency	
transparency	
turbid	Key West Channel
turbidity	
turbidity	
water depth	
water depth	
water depth	
water depth	
water flow	
water motion	
water quality	
water quality	
water quality	
water quality	
water quality	
water quality	
water quality	
water quality	
water quality	
water quality - high energy	

water quality - nutrients	
water quality - turbidity	
water quality (synergistic)	
water quality (transparency, nutrient-free)	
water temperature	
water temperature	
water temperature	
	MPAs [are] critical habitat or exempt
	SPA = critical habitat
	Broward
	Palm Beach
	USVI
	PR
	Dry Tortugas
	Dade
	potential areas of population (shift of range northward)
	historical distribution (areas that once supported PCEs) - restoration of those areas
	Broward (northern fringe/[bu..?])
	link EFH to CH?
	entire FL reef tract
	Lower Matcumbe (elkhorn)
	N. N Dry Rocks/Horseshoe (elkhorn)
	Mid-Channel Patch Reefs (staghorn)
	historic distribution - potential habitat (recovery)
	"scrub zone" area of transition
	northern extent (deeper than some, evolutionary trait)
	historic northern extent
	Gulf Stream reef
	Key Largo - Pennecamp
	recruits south of Hillsborough Inlet area
	successful recruitment areas
	entire FL reef tract
	Tortugas to Martin County
	USVI
	Puerto Rico
	Broward (Port Everglades/Dania Beach to Hillsboro Inlet)
	unoccupied habitat

	historical habitat
	Fredriksted Reef System
	historical distribution
	waters in Atlantic vs. Caribbean?
	all of Culebra
	reserves
	all MPAs
	Mona
	inventory historic (CFMC atlas of deep water corals --> GIS)
	ecosystem approach - associated to fish species/life histories (need EFH, HAPC)
	historic areas with good habitat (areas where they are being replanted in Culebra, Guanica)
	Tres Palmas (marine reserve)
	all PR MPAs (that contain PCEs)
	existing stands
	Northeast Corridor of PR
	Punta Boqueron
	areas where corals have shown resistance to persistent threats
	areas where corals have been lost
	Monroe, Miami-Dade, Broward, Palm Beach Counties; PR and USVI
	"Shacks" Beach on NW corner of PR
	FL Keys, Broward, PB County, PR, USVI, Navassa
	Mona Island Natural Reserve
	Desecheo Marine Reserve
	areas north of Lauderdale-by-the-Sea pier
	Pompano Beach
	Acropora populations in PR (area of genetic mixing between eastern and western Caribbean)
	include protection of functional wetlands and vegetated watersheds

Acropora sp. Conservation Workshops: General Questions and Comments

QUESTION	ANSWER	COMMENT
<p>What is the immediate impact of the final listing of elkhorn and staghorn corals as threatened?</p>	<p>Once the threatened listing for elkhorn and staghorn corals became effective on June 9, 2006, the immediate impact is only on actions carried out, funded or authorized by any federal agency. Take of either species is not prohibited as a result of the listing because the prohibitions listed in section 9 of the ESA are not automatically extended to threatened species as they are when a species is listed as endangered. Thus, the listing determination for elkhorn and staghorn corals means only that the federal agency responsible for any actions affecting either of the two species must undergo consultation with NOAA Fisheries Service (as mandated by section 7 of the ESA). NOAA Fisheries Service will determine whether the federal action jeopardizes the continued existence of the affected coral species.</p>	
		<p>NOAA Fisheries Service should, in their efforts to conserve elkhorn and staghorn corals, consult and coordinate with the Southeast Florida Coral Reef Initiative (SEFCRI), other Local Action Strategy (LAS) efforts, and international coral organizations.</p>
<p>Did the NOAA Fisheries Service Protected Resources Division conduct a review of several different federal construction projects, including the proposed pipeline to the Bahamas for natural gas?</p>	<p>The NOAA Fisheries Service Protected Resources Division staff at the <i>Acropora</i> sp. Conservation Workshops are not familiar with the proposed pipeline projects for the east coast of Florida, as they have not reviewed any of the project documents.</p>	

<p>What about recovery planning for the two species?</p>	<p>NOAA Fisheries Service is required to develop and implement a recovery plan after a species is added to the Endangered Species List. Recovery is the methods and procedures necessary to restore species to the point that protections under the ESA are no longer needed. Although recovery actions can, and should, start immediately upon listing a species as endangered or threatened under the ESA, prompt development and implementation of a recovery plan will ensure that recovery efforts target limited resources effectively and efficiently into the future. The recovery plan serves as a road map for species recovery – it lays out where we need to go and how best to get there. NOAA Fisheries Service expects to convene a recovery team to develop the recovery plan for the two species.</p>	
		<p>The scheduled time for the <i>Acropora</i> sp. Conservation Workshops (6 – 8 pm) is a difficult time for attendance in the Ft. Lauderdale area because of traffic.</p>
<p>Now that elkhorn and staghorn corals are listed as threatened, are there increased penalties?</p>	<p>Currently, no prohibitions on take under the provisions of the ESA apply to elkhorn and staghorn corals. If NOAA Fisheries Service publishes a proposed 4(d) rule for the two threatened corals, it may extend some or all of the prohibitions listed in section 9 of the ESA. Should the proposed 4(d) rule become final, then violations could result in civil or criminal penalties, as outlined in section 11 of the ESA. Civil penalties include fines of up to \$25,000 for <i>each violation</i>. Additionally, criminal penalties include fines of up to \$50,000 and/or imprisonment (for up to one year).</p>	

By what date will NOAA Fisheries Service draft a proposed 4(d) rule?	NOAA Fisheries Service hopes to complete its analysis to determine if any 4(d) rules are necessary and advisable for the conservation of these corals by the end of the year. Once a proposed 4(d) rule is published in the Federal Register, a formal public comment period will open and a series of public comment hearings may be held in the region.	
Is it possible that areas where corals grow best may depend on where disease(s) is (are) absent?	NOAA Fisheries Service concurs that this is possible.	
		The proposed 4(d) rule should address existing fisheries management regulations and mandate a review of trap fisheries management.
		NOAA Fisheries Service should coordinate with existing education and outreach efforts.
What about the sale of dead specimens of elkhorn and staghorn corals in Florida? Importing the two species should be prohibited.	Florida has legislation in place that makes it illegal to collect, harvest, or sell stony corals (including elkhorn and staghorn corals).	
		The Glenn Patton website has a statement on the sale of dead corals.
		Exemptions for the possession of dead coral species for educational facilities should be considered.
		Artificial casts of coral species should be used instead of dead specimens.
		Confiscated specimens of coral should be used.
What about coral farms?	If a 4(d) rule extends take prohibitions to corals, it may be possible for NOAA Fisheries Service to exempt certain activities from some or all of ESA section 9 through the 4(d) rule; however, specific conditions may be applied.	
		The Florida Keys composes 98% of the import market for dead corals.
		The funds generated by licensing fees should be used to fund elkhorn and staghorn conservation efforts.

		There needs to be a governmental mechanism at the territorial or local level to address direct grounding impacts (i.e., a mechanism to investigate groundings, authority to assess fines and penalties, process for non-groundings (e.g., barge landings), selective process, and reclamation funds).
Will NOAA Fisheries Service be cataloguing critical habitat? What efforts are there to identify those areas?	NOAA Fisheries Service is gathering information to determine the extent to which designation of critical habitat for elkhorn and staghorn corals is appropriate through several different processes. The first effort to gather information pertaining to areas of critical habitat occurred during the comment period for proposed rule to list elkhorn and staghorn corals. The second effort consists of soliciting specific information during these <i>Acropora</i> sp. Conservation Workshops. Last, NOAA Fisheries Service is actively seeking Geographic Information Systems (GIS) data on known locations of <i>Acropora</i> sp. populations. All of these methods of information gathering will inform NOAA Fisheries Service designation of critical habitat for elkhorn and staghorn corals. Any areas designated as critical habitat will be catalogued in the Code of Federal Regulations.	
		Consider obtaining a list of data sources for critical habitat information. Perhaps NOAA Fisheries Service should contact Bill Fisher in EPA's Gulf Breeze Lab.
		NOAA Fisheries Service should notify the public of the public comment hearings for the proposed 4(d) rule and designation of critical habitat using television and radio
		Emails of those on mailing list
		There should be a NOAA Fisheries Service Virgin Islands coordination office. NOAA Fisheries Service could work out of the EPA Virgin Islands coordination office.

		NOAA Fisheries Service should formulate a communications strategy by working with Alissa Barron of the Coral Reef Conservation Program.
		Consider that areas in which the population density of elkhorn and staghorn corals increased are areas in which critical habitat has increased.
		There is a natural cycle of coral death, as illustrated by the existence of coral white sand beaches in the U.S. Virgin Islands.
		There is agency confusion.
		For mooring, there should be GPS locations where ships may anchor.
		Place the burden on the homeowner (i.e., have them demonstrate that activities are not affecting elkhorn and staghorn corals).
		The listing of elkhorn and staghorn corals has political ramifications that can have a huge negative impact on commerce. Additionally, the listing is not about science, but about politics (specifically, global warming politics).
		A map of A. cervicornis in Palm Beach County was provided to NOAA Fisheries Service.
		The names, addresses, and specific comments from the peer reviewers of the Atlantic Acropora Biological Status Review was requested.
What about the owners of sovereign submerged lands south of Long Key, FL? How are they affected by the listing of elkhorn and staghorn corals as threatened?	The provisions of the ESA apply to any person subject to the jurisdiction of the United States (i.e., all United States citizens).	
		NOAA Fisheries Service should receive input from members of the St. Croix fishing community in order to maintain an unbiased comment period.
		The causes of many coral diseases have been discovered and are entirely avoidable through good management of coral reefs.

		There are many ways to manage disease and elevated sea surface temperatures.
		<i>Reef Crowns</i> are a subsequent improvement to the design of their predecessor, <i>Rosettes</i> .
		<i>Coral 2000 Volume 1 and 2</i> document the Coral Nursery Project and the ongoing Reef Relief Coral Photo Monitoring Survey and were presented to NOAA representatives and members of the FKNMS Sanctuary Advisory Board.
		Reef Relief submitted two video transects of Rock Key Reef and information on the coral nursery at Western Sambo, with the recommendation that all corals in the <i>Acropora</i> genus found in the Caribbean basin be further protected, in response to the Federal Register notice dated 01/15/1999.
		The Atlantic <i>Acropora</i> Biological Status Review did not mention Reef Relief's efforts or recommendations, including mention of the extensive ongoing public awareness and outreach activities designed and implemented by Reef Relief.