

**Workshop Report**  
**2<sup>nd</sup> Annual Reef Resilience Conference, Fort Lauderdale**  
**Learning Exchange 2011**

**“Planning for Resilience”**



**Journalists from the Society of Environmental Journalists interview a panel of coral reef experts on reef resilience-related topics, including Chris Bergh (on right), TNC Florida Director of Coastal and Marine Resilience.**

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**The Nature Conservancy**  
**October 17-21 2011**



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## **Background**

The mission of the U.S. Coral Reef Task Force is to lead, coordinate, and strengthen U.S. government actions to better preserve and protect coral reef ecosystems. The Task Force is co-chaired by the Department of Commerce and the Department of the Interior, and includes leaders of 12 federal agencies, seven U.S. states and territories, and three freely associated states. The USCRTF meets twice per year, alternating between Washington, DC and Pacific or Atlantic/Caribbean coral reef jurisdictions. In October 2011, the Caribbean USCRTF meeting was also co-hosted by The Nature Conservancy (TNC) and organized the 2nd Reef Resilience Conference to coincide with this meeting.

The Reef Resilience Conference is coordinated by the Florida Reef Resilience Program, which is a consortium of local and state agencies and partners, chaired by The Nature Conservancy. The first Reef Resilience Conference was held in April 2008 in Key Largo, Florida with the objectives of understanding reef user perspectives, strategy development and ranking of resilience characteristics. The 2<sup>nd</sup> Conference has a theme of “Planning for Resilience” and will incorporate new focuses on coastal and marine spatial planning.

The Conservancy facilitated the exchange, which included speeches and presentations from regional and global experts on coral reef science and management, including Dr. Peter Mumby (University of Queensland), Chantal Collier (Florida Department of Environmental Protection), Chris Bergh (The Nature Conservancy), Dr. David Wachenfeld (Great Barrier Reef Marine Park Authority), Dr. Rob van Woesik (Florida Institute of Technology), Dr. Diego Lirman (University of Miami Rosentiel School), and Billy Causey (NOAA National Marine Sanctuary Program).

## **Objectives of the Learning Exchange**

1. To foster strong ongoing communication and collaboration between coral reef management agencies from all over the world.
2. To provide a venue for different reef resilience interests to come together, including reef users, scientists, and resource managers, to discuss resilience science and applications.
3. To learn about coastal and marine spatial planning and its applications, to better understand reef user perspectives and human dimensions science, to increase discussions on tools and strategy development.

## **Expected Results of the Learning Exchange**

Participants were expected to leave the workshop with a clear understanding of:

- A better understanding of why CMSP is useful and makes sense for coral reef areas, and what information needs exist for CMSP of coral reef areas
- Past applications of CMSP that has been successful at both regional and local scales, including in St Kitts and Nevis, with the Port Everglades Anchorage Area (Florida reef tract), and Florida National Parks and Marine Sanctuaries
- Increased knowledge of Florida coral reef tract and an understanding of the various management tools, strategies, and programs in place to address a wide range of coral reef needs, including FRRP, the FL Coral Bleaching Response Plan, and the FL Climate Action Plan

- Exposure to science recently published or being tested on resilience factors on the FL reef tract, including CREMP study locations and findings, cold water snap findings from Diego Lirman that addressed the cold water event of January 2010
- Increased knowledge and understanding of current coral restoration programs being done in Florida and now in USVI and beginning in many other Caribbean locations
- Increased understanding of how science and management organizations (NGOs, government agencies, academic institutions) are (in FL) and must work together to ultimately protect coral reefs, seen as an example in Florida since it is one of the most heavily populated coastlines in the US
- Increased understanding of Reef Resilience Planning and using reef resilience principles in MPA and MPA network development, with a successful implementation example from the Australian GBRMPA
- Exposure to reef user perspectives of CMSP zoning regulations from industry representatives including commercial dive industries, commercial fishing industries (international as well), recreational fishing industries,

## **Methodology**

The Reef Resilience Conference agenda was designed to present a suite of information from a broad and international range of locations and interests in a short period of time. It was designed to present information to participants that could be incorporated into their work and promote action discussion through break out sessions.

### **Day 1:**

The Conference began with a keynote speech given by Dr. Peter Mumby from the University of Queensland on planning for resilience of coral reefs under climate change impacts. He addressed the definition and context of reef resilience, methods on measuring resilience in coral reefs, and how modeling approaches can be used for resilience planning.

Following this, there were three presentations given on the background of the Florida reef tract, by Chantal Collier, the Florida Reef Resilience Program (FRRP), by Chris Bergh, and the 2010-2015 Florida Climate Change Action Plan (Alex Score, EcoAdapt).

Next, there were nine short “Pecha Kucha”-style presentations given to bring everyone up to speed on Reef Resilience Science Updates. Science update topics included: disturbance response monitoring (Rob van Woesik), Florida Coral Reef Monitoring and Evaluation (Rob Ruzicka), the 2010 cold water event (Diego Lirman), Florida’s coral bleaching response plan (Meaghan Johnson), economic value of Florida’s reefs (Grace Johns), stakeholder views and management alternatives (Manoj Shivilani), new global high-resolution bleaching tools and satellite data (Mark Eakin), high-resolution satellite tools for warm water bleaching and cold water events (Gerardo Toro-Farmer), and stimulating coral restoration (Caitlin Lusic).

Afternoon sessions began with Dr. David Wachenfeld, who gave a speech on reef resilience planning as it relates to management actions of the Great Barrier Reef Marine Park during a changing climate. After giving a background of natural history and threats associated with the GBR, he explained the actions that lead to the GBR Climate Change Action Plan in 2007. He spoke about ways in which management protocols and adaptive management has been applied to reef conservation through increased resilience by protecting biodiversity,

improving water quality, increasing sustainable fisheries and tourism, as well as educating the general public. He also explained the zoning plan of the GBR marine park, which involves a comprehensive network of no take areas, each with 70 bioregions, creating an overall network 20% of the GBR designated as no take areas.

For the remainder of the afternoon, participants were split up into one of ten breakout groups. Breakout groups were asked to use a map with different reefs located within a coastal environment, and discuss reef resilience planning. Groups were then asked to address what was needed for reef resilience planning, including stakeholder engagement or data collections.

The first day of the conference ended with a one-hour media session followed by a reception. The media panel included journalists from the Society of Environmental Journalists, such as Jeff Burnside (NBC Miami), Catalina Arevalo (EFE Spain), Curtis Morgan (Miami Herald), Angela Posada-Swofford (Muy Interesant Magazine), Joe Treaster (University of Miami School of Communication), who asked reef resilience-related questions to coral experts, including Billy Causey, David Wachenfeld, Chris Bergh, Rob van Woesik, Peter Mumby, Eileen Sobek, Paige Rothenberger, and Jim Bohnsack.

## **Day 2:**

Day two began with speeches that introduced the theme of Coastal and Marine Spatial Planning (CMSP) for coral reef ecosystems. Presentations were given on why CMSP should be used for coral reefs, from Charlie Wahle (NOAA), followed by several presentations giving examples of how CMSP has been used at regional and local scales. Examples were given on how CMSP has been used in St. Kitts and Nevis by Graeme Browne (St. Kitts and Nevis government), in US National Parks in the Florida Keys by Billy Causey, and in south Florida's Port Everglades anchorage area by Chantal Collier.

The following session was devoted to reef user perspectives, called "Voices of the Reef". Several representations of reef and marine associated industries spoke on the perspectives of their industry groups concerning CMSP and their thoughts on the future with CMSP regulations in place. These speakers represented the recreational fishing industry (Tom Twyford, West Palm Beach Fishing Club), the diving industry (Mike Beach, Diving Adventures, Inc), and the commercial fishing industry (Neil Green, Queensland Seafood Industry Association).

The morning's activities ended with breakout sessions that focused on identifying key information needs and gaps associated with designing CMSP for coral reefs. Participants were randomly broken down into ten small groups and asked to fill out a questionnaire on coral reef ecological aspects they saw as most important in their own reef location and most in need of more information, for use in CMSP. Results of information needs were shared to the general participant audience and will be used by the NOAA CMSP Program.

Afternoon sessions were made up of invitation-only meetings as well as general audience information sessions. The Benthic Working Group met to discuss recent scientific findings and the Florida Reef Resilience Program's Disturbance Response Plan. Meanwhile, the International Reef Resilience Practitioners Workshop included two sessions: Reef Resilience Approaches around the Caribbean and Beyond and an "Ask the Experts" Panel. During the first session, reef managers (and many former TNC Reef Resilience Training of Trainers participants) presented on how they are applying resilience principles in their own

locations from knowledge gained through workshops, learning exchanges, and trainings. The Ask the Experts panel included coral reef experts who gave presentations on their topics, including adaptive management to climate change, climate change action planning, coral restoration, and remote sensing.

Day 3:

The third day was comprised of numerous fieldtrips in which participants were able to see on-the-ground resilience principles and marine conservation issues and management actions throughout southern Florida. Fieldtrips ranged from CMSP in Biscayne National Park, to coral restoration programs in Fort Lauderdale, to coral reef management and protection at the John Pennekamp Coral Reef State Park.

The Reef Resilience Conference ended with a closing ceremony and reception at the unveiling of the National Coral Reef Institute of Nova Southeastern University.

### **How Reef Resilience Is Being Used Globally**

Kemit Amon-Lewis, US Virgin Islands: The TNC USVI field office is using a holistic approach to conserving degraded coral reefs in their work using resilience principles. The USVI has threats including major hurricanes increasing in severity and number, overfishing and destructive fishing practices, and pollution. In the past and currently, scientists and conservationists have struggled with concept of resilience in USVI and wonder if there is such a thing in this location. This office has been working to develop a USVI Reef Resilience Plan based on lessons learned by Kemit through his participation in the Caribbean Training of Trainers Workshop and the bleaching plan developed during the workshop. They have worked to identify resilient coral reefs and anthropogenic stresses, and are also working to actively protect coral reefs through restoration projects. They are using community and scientific information, monitoring data, and the Reef Resilience Toolkit principles to determine which reefs are most resilient. They are incorporating lessons on resilience management from TNC as a driving force between community and conservation links in order to increase community buy-in and support for restoration. They are also educating and engaging the general community in order to increase empowerment and change their behavior. The USVI program is working on a sustainable seafood campaign to create a list of better choices for food fishes and invertebrates for only in season catches.

Tim Austin, Cayman Islands: This area has a long history of marine area management with 25 years of marine protected areas. This anniversary prompted a need for a review of the MPA system. In an effort to review their MPAs and sign up to the Caribbean Challenge, they're goal is to increase marine reserve areas to a minimum 30% of marine habitats protected. Using resilience principles learned by Croy McCoy in a Reef Resilience Training for Trainers Workshop, they are monitoring and surveying habitats and habitat uses and are collecting data to prove that their marine parks are actually working in order to gain community support. They are also examining the role of reef fish as this facet is an important part of resilience principles and has not yet been determined in the Caymans. In fact, through community interviews and surveys of local fishing practices, they discovered that fishing pressure is very high in Caymans. They have finished risk assessment mapping on all islands and in the last two months they have been doing extensive public outreach with public and face-to-face stakeholders meetings to incorporate public opinion in their projected programs and MPA designations.

Steven Johnson, CNMI: During his training this past June at the Reef Resilience Training of Trainers Workshop, a Bleaching Response plan was developed with components of an early warning system, management intervention, and implementation protocols. They are in the process of developing of communications strategy for their bleaching response plan using resilience principles. They have also completed a workshop training in Saipan in an effort to increase community engagement and create an early warning system to monitor coral bleaching using volunteer community support. Through his position with the CNMI government, he has applied four principles of resilience, including representation and replication in order to manage for uncertainty and the protection of refugia sites. In the marine reserves already in place, they are currently determining whether these locations have the resilient characteristic of recruitment connectivity. Their strongest approach with effective management concerns influencing and mitigating the threat of stressors. In the future they will develop a draft bleaching response and resilience plan, baseline studies for future resilience assessments to compliment and fill in gaps from 11-year monitoring data, and develop more bleaching watch trainings to increase community involvement.

Ramon de Leon, Bonaire: Resilience principles are being used to compliment methods of determining the success of Bonaire's marine park. The marine park was developed with a holistic approach in 1979 and now Bonaire is left with applying effective management strategies. Are faced with threats like water quality, fishing, tourist impacts and coastal development. They have increased management effectiveness by looking at coral reef management at an ecosystem-level and have developed a temporary sewage treatment system to combat stressors. They have engaged fishermen with area designation and have gotten their support as surveys showed fish population growth in protected areas and outside it. Because the fishing and diving industries supply the country with a lot of revenue through tourism, they have proposed two fish protected areas. They are currently working with government agencies to develop coastal development guidelines as coastal development and real estate are a booming economy and increasing threat. In order to address climate change, they are working with stakeholders in a variety of unique ways to create tax exemptions and economic incentives to green building and public systems management. They have been using resilience principles and lessons learned from workshops in a variety of ways in order to manage old marine parks where coral cover is continuing to decline.

Lourene Jones-Smith, Jamaica: She is using resilience principles through her employment with the Jamaican government agency responsible for regulating all ecosystem management actions. Several programs were implemented before her experience with the Training of Trainers Workshop, and she is further enhancing this work by helping develop coastal and beach erosion programs and institutionalized annual reef assessments. They are producing an ecological map of coral and bleaching to better understand and protect more resilient reefs and plan to update several MPA management plans by revamping and reassessing MPAs to include connectivity. They are creating restoration programs with coral nurseries to enhance resilience work and have created a Jamaica coral reef monitoring network, which is a loose aggregation of volunteers geared towards management based activities. They have developed a climate change adaptation project to reduce land based sources of pollution and watershed run-off while simultaneously enhancing public awareness. They have just recently launched a Reef Watch program to create better bleaching response plan from community. This will incorporate five workshops of various stakeholder groups. major challenge envisioned is not enough resources to go monitoring during bleaching events.

Ruben Torres, Dominican Republic: He is working on a conservation initiative in the La Caleta Marine Park that in 2005 showed low densities of reef species and 15% or less of coral cover left on reefs. The La Caleta Marine Park was mostly made of “paper” parks where management and enforcement was not conferring the protection of these resources. In order to prove that MPAs can benefit nature and humans and increase community support, he is doing basic monitoring with volunteer divers who monitor the MPA each month. After identifying major threats, mooring buoys were installed to stop anchoring. Through communication and awareness and through other Caribbean countries, they started convincing fishermen of the importance of marine parks. They have selected a small area in park with no-fishing regulations. They started providing financial support through government institutions to fishermen who have been using this location for decades and provided education on tourism and the private sector to provide alternative livelihoods to fishermen. They’ve involved divers and community members in a reef check program and coral nursery projects. Furthermore, they are promoting this area as a diving destination to increase support for marine conservation and protection, which is a unique way of continuing conserving coral reefs. They are seeing results as fish are coming back to La Caleta, coral coverage is improving, and the biomass of macroalgae going down while coral going up. They hope that restoration and resilience practices with a strong community involvement component will enhance the recuperation of these coral reefs.

## **Results, Conclusions, Recommendations and Lessons Learned**

Conference participants were extremely interested in the Voices of the Reef presentations and really connected with the presenters, especially Neil Green, as a non-scientist giving his emotional and honest story. For the rest of the day’s sessions, people constantly referred to the need for involving stakeholders in each step of the process and including stakeholder and community knowledge and insight as a valuable contribution to CMSP and MPAs.

The International Reef Resilience session was a great demonstration to all participants from many geographic locations and many environmental backgrounds that many reef resilience trainees (from workshops, learning exchanges, and courses) are actively and robustly applying resilience principles in much of their work. This is happening at a broad and global scale through all types of agency workers and reef users.

Participants seemed to be particularly interested in coral restoration programs and wanted to know about the protocols used in restoration. They also wanted to know about potential restoration projects for other types of corals besides acroporids. Overall, coral restoration was a huge hit and many people who manage these projects presented their work in conference sessions numerous times. James Byrne commented that reef practitioners, governments, and community members get excited about restoration and it is growing in popularity throughout all of the Caribbean because it is a hands-on and active project where you can see direct results. Many questions were asked concerning the uses of genetics testing in coral restoration program, out-planting methodology, and restoration for other coral species.

## Testimonials by Participants of Reef Resilience Programs

- “I think we are also realized from this conference that resilience is the way to go if we are going to conserve coral reefs”- Kemit Amon-lewis
- “In my opinion in terms of coral resilience it has advanced a lot in last decade, but we have been studying sick coral for too long, and need to focus on healthy coral to figure out how they work in order to understand and discover that there are some silver bullets that can be used to revert the process.” - Ramon de Leon
- “I’m hopeful about coral reef conservation because we are in an environmental century where more people are more aware of environmental impacts on the planet. If you want to look at an ecosystem, which have been the most detrimentally impacted by climate change, coral reefs are the perfect example of that. Even though the outlook doesn’t look good, we can make a case that we need to protect coral reefs. If we are going to do something, this is the time to act.” – Andrew Baker
- “The Reef Resilience Program has given us a new and fresh perspective and a fresh opportunity to engage with people, the reef users, who make their livings on the reef and who derive recreational satisfaction from the reefs, and government agencies and organizations.” – Chris Bergh, FRRP
- “ TNC has a lot of expertise that a lot of people look for to get from them for conservation and management. We have engaged with James and Steven Schill and its interesting to see data come together for common purpose of conservation. Conservation in the Caribbean needs to be regional and cannot concentrate in one area, and TNC does this work regionally for all. We have always looked for outside expertise to answer our answers, having TNC with us it carries a lot of weight with political buy-in to accept that what we are doing is at the international standard, TNC brings behind us a big push to make it all work.” – Croy McCoy
- “I’m optimistic because I do know hundreds of millions of people around the world value their coral reefs and I don’t think those people are going to let them go easily. I know many people around the world are working to increase local resilience in their reefs to they can better withstand climate change.” – David Wachenfeld
- “On the GBR we have many examples of resilience working in our reef systems. This idea of resilience is not just a theory but coral reefs demonstrate it to us all the time.” – David Wachenfeld
- “One of the biggest benefits of the Reef Resilience Program and the FL Reef Resilience Program is that it brings every one together to look at coral reefs as a coral reef system that goes across all political and jurisdictional boundaries. Being able to get scientists from all different organizations to do the same methodology at the same time for bleaching response monitoring is really a big success that is unprecedented anywhere else... It contributes to the whole which is much greater than what they can do on their own.” –James Byrne
- “We can’t just restore reefs and we can’t just minimize impacts, there needs to be a marriage of the two and a lot of people are strongly for one or the other, so this is

one of the challenges of getting people to embrace both strategies.” – Kemit Amon-Lewis

### **Evaluation by Participants**

Generally, participants noted that the exchange provided a good setting for different geographies to learn successes and challenges from others as they discussed uses of reef resilience principles in their locales and learned about examples of successful CMSP in south Florida and in the Caribbean. Geographical coverage was noted as an important feature of the exchange, where participants especially appreciated that the exchange included participants from outside a local region. Participants were impressed with the different approaches to dealing with issues and challenges – they felt that it was beneficial to learn about alternative approaches to coral reef conservation including CMSP and coral restoration.

Several participants noted instances in which an added value from Reef Resilience Programs could assist them in their work. Ruben Torres of the Dominican Republic expressed a need for collaboration with scientists who were interested in studying marine protected area success, as the Lacaleta MPA that he works with is in the beginning stages of coral recovery. Collaborations between reef practitioners and scientists throughout the region could be increased and connections further utilized to work towards common goals. Additionally, several reef practitioners from the Caribbean in the USVI and Jamaica both noted challenges they face in attempting to reach so many stakeholder groups with proposed coral reef conservation projects. Further discussion with or amongst past reef resilience trainees could continue to provide expertise in areas of management.

### **Annexes**

Annex A – Agenda

Annex B – List of Participants

Annex A – Agenda

**The Florida Reef Resilience Program (FRRP) presents  
2<sup>nd</sup> Reef Resilience Conference  
“Planning for Resilience”  
October 18-19, 2011, Fort Lauderdale, Florida**

**DAY 1 TUESDAY OCTOBER 18, 2011**

<b>8.00am-9.00am</b>	<b>REGISTRATION</b>
<b>9.00-9.10am</b>	<b>Welcome, Workshop Objectives, Introductions, and Review of Agenda</b> James Byrne, <i>The Nature Conservancy</i>
<b>9.10-9.30am</b>	<b>Keynote speaker on Planning for Resilience.</b> Dr. Peter Mumby, <i>University of Queensland</i> ,
<b>9.30-10.10am</b>	<b>Overviews of Florida Reef System, Florida Reef Resilience Program(FRRP), Climate Change Action Plan</b> <ul style="list-style-type: none"> <li>• Brief introduction to Florida Reef System eco, socio, and management : Chantal Collier, <i>Florida DEP Coral Reef Conservation Program</i></li> <li>• Introduction to FRRP, review 1<sup>st</sup> Reef Resilience Conference: Chris Bergh, <i>The Nature Conservancy</i></li> <li>• Overview of Climate Change Action Plan for Florida Coral Reef System: 2010-2015 : Alex Score, <i>EcoAdapt</i></li> </ul>
<b>10.10-10.30am</b>	<b>BREAK</b>
<b>10.30am 12.30pm</b>	<b>Florida Reef Resilience Science Updates</b> <ul style="list-style-type: none"> <li>• Disturbance Response Monitoring in South Florida: Rob Van Woesik, <i>Florida Institute of Technology</i></li> <li>• Florida Coral Reef Evaluation and Monitoring Projects: Rob Ruzicka, <i>Florida Fish &amp; Wildlife Research Institute</i></li> <li>• Severe 2010 Cold-Water Event Caused Unprecedented Mortality to Corals of the Florida Reef Tract: Diego Lirman, <i>University of Miami</i></li> <li>• The Florida Reef System’s Coral Bleaching Response Plan: Meaghan Johnson, <i>The Nature Conservancy</i></li> <li>• Uses and Economic Value of Reefs in South Florida: Grace Johns, <i>Hazen and Sawyer</i></li> <li>• Stakeholder Views and Preferred Management Alternatives Concerning the Southeast Florida Coral Reef Ecosystem: Manoj Shivlani, <i>Marine and Coastal Research, Corp.</i></li> <li>• Developing new Global High-Resolution Coral Bleaching Tools from Satellite Data: Mark Eakin, <i>NOAA Coral Reef Watch</i></li> <li>• High-Resolution Satellite Tools for Florida: Warm Water Bleaching and Cold Stress Indices: Gerardo Toro-Farmer, <i>University of South Florida</i></li> <li>• Stimulating Coral Restoration: Active Management In Florida and the USVI: Caitlin Lustic, <i>The Nature Conservancy</i></li> </ul>
<b>12.30-2.00pm</b>	<b>Lunch on own at hotel or surrounding restaurants</b>

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<b>2.00-2.10pm</b>	<b>Introduction to Reef Resilience Planning workshop</b> James Byrne, <i>The Nature Conservancy</i>
<b>2.10-2.30pm</b>	<b>Reef Resilience Planning example</b> Managing the Great Barrier Reef Marine Park in a Changing Climate: Dr. David Wachenfeld, <i>Great Barrier Reef Marine Park Authority</i>
<b>2.30-2.40pm</b>	<b>Introduction to Exercise/Breakout groups</b>
<b>2.40-3.00pm</b>	<b>BREAK</b>
<b>3.00-4.30pm</b>	<b>Breakout Session</b> Focused on general needs for Reef Resilience Planning, for example, data types, mapping, stakeholder engagement approaches.
<b>4.30-5.00pm</b>	<b>Report out from Breakout Session &amp; Closing Day’s Remarks</b>
<b>5.00-6.00pm</b>	<b>BREAK</b>
<b>6.00-7.00pm</b>	<b>Media Panel with Coral Reef Experts</b>  Journalists from the Society of Environmental Journalists interview a panel of coral reef experts on reef resilience-related topics.  Facilitated by Jeff Burnside, <i>NBC Miami</i>  Coral Reef Expert Panelists: <i>Billy Causey, NOAA National Marine Sanctuaries; David Wachenfeld, Great Barrier Reef Marine Park Authority; Chris Bergh, The Nature Conservancy; Rob Van Woesik, Florida Institute of Technology; Peter Mumby, University of Queensland; Eileen Sobeck, U.S. Department of the Interior; Paige Rothenberger, U.S. Virgin Islands Department of Planning and Natural Resources; Jim Bohnsack, NOAA National Marine Fisheries Service.</i>  Journalists: <i>Catalina Arévalo, Environmental Journalist, EFE Spain; Curtis Morgan, Environmental Reporter, Miami Herald; Angela Posada-Swafford, U.S. Senior Science Correspondent, Muy Interesante Magazine – Spain; Joe Treaster, John S. and James L. Knight Chair in Cross-Cultural Communication, University of Miami School of Communication</i>
<b>7.00-9.00pm</b>	<b>Hotel Evening Reception &amp; Southeast Florida Underwater Photography Contest Award Ceremony</b>  Oceanview Terrace, Marriott Harbor Beach Hotel, Fort Lauderdale

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**DAY 2 WEDNESDAY OCTOBER 19, 2011**

<b>8.00am-8.30am</b>	<b>REGISTRATION (only new registrants who are joining on Day 2)</b>
<b>8.30-8.40am</b>	<b>Welcome, Recap day 1 and Review Agenda for Day 2</b> James Byrne, <i>The Nature Conservancy</i>
<b>8.40am-9.40am</b>	<b>Coastal and Marine Spatial Planning (CMSP) for Coral Reef Ecosystems</b> <ul style="list-style-type: none"> <li>• Place Matters - Why CMSP Makes Sense for Coral Reef Areas and Key Information Needs : Charlie Wahle, <i>NOAA CMSP Program</i></li> <li>• CMSP in St. Kitts &amp; Nevis: Graeme Browne, <i>St. Kitts and Nevis Ministry of Sustainable Development</i></li> <li>• Spatial planning in U.S. National Parks with Coral Reef Resources: Sherri Fields, <i>National Park Service</i></li> <li>• Spatial Planning for Florida's Reefs - Port Everglades Anchorage Area: Chantal Collier, <i>Florida DEP Coral Reef Conservation Program</i></li> </ul>
<b>9.40-10.40am</b>	<b>Voices of the Reef</b>  Voices of the Reef: Reef User perspectives on spatial planning to date plus hopes for CMSP.  Representatives from the recreational fishing, commercial fishing and diving industry: <ul style="list-style-type: none"> <li>• South Florida Recreational fishing industry :Tom Twyford, <i>President, West Palm Beach Fishing Club</i></li> <li>• South Florida Diving Industry: Mike Beach, <i>Captain, R.J. Diving Ventures, Inc.</i></li> <li>• Florida Keys Commercial fishing industry : Jeff Cramer or Bill Kelly, <i>Florida Keys Commercial Fisherman's Association</i></li> <li>• Florida Keys Dive Industry – A representative to be confirmed</li> <li>• International Commercial Fishing industry rep : Neil Green , <i>Queensland Seafood Industry Association, Australia</i></li> </ul>
<b>10.40m-11.00am</b>	<b>BREAK</b>
<b>11.00am-12.10pm</b>	<b>Breakout Session</b> Breakout Session focused on identification of key information needs and gaps for CMSP in coral reef ecosystems.
<b>12.10-12.45pm</b>	<b>Report out from Breakout Session &amp; Closing Remarks</b>
<b>12.45-</b>	Lunch on own at hotel or surrounding restaurants

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<b>2.00pm</b>	
<b>2.00-4.00pm</b>	<p><b>Benthic Working Group</b> (Invitation only)</p> <ul style="list-style-type: none"> <li>• Analysis by Rob Van Woesik's Lab</li> <li>• Review Spatial Framework</li> <li>• FRRP Disturbance Response Plan</li> </ul>
<b>2.00-5.30pm</b>	<p><b>International Reef Resilience Practitioners Workshop</b></p> <p>Part 1: Reef Resilience Approaches around the Caribbean and Beyond: Caribbean reef/resource managers provide brief updates about how they have applied information from past reef resilience trainings, workshops, and learning exchanges at their country and/or site level. 10-minute presentations including Q&amp;A from:</p> <ul style="list-style-type: none"> <li>• Kemit Amon-Lewis, <i>U.S. Virgin Islands</i></li> <li>• Tim Austin and Croy McCoy, <i>Cayman Islands</i></li> <li>• Steven Johnson, <i>Commonwealth of the Northern Mariana Islands</i></li> <li>• Ramon de Leon, <i>Bonaire</i></li> <li>• Loureene Jones-Smith, <i>Jamaica</i></li> <li>• Ruben Torres, <i>Dominican Republic</i></li> </ul> <p>Short Break : 3.30-3.45pm</p> <p>Part 2: Ask the Experts: Subject matter experts introduce their topics, answer questions solicited from the audience before the workshop via email and then answer new questions from the audience. 20-minute presentations including Q&amp;A on :</p> <ul style="list-style-type: none"> <li>• Adapting coral reef management to climate change: David Wachenfeld, <i>Great Barrier Reef Marine Park Authority</i></li> <li>• Climate change action planning: Alex Score, <i>EcoAdapt</i></li> <li>• Reef restoration and coral nurseries: Kemit-Amon Lewis, <i>The Nature Conservancy</i>. Danny Green, <i>The Nature Conservancy</i>, Ken Nedimyer, <i>Coral Restoration Foundation</i></li> <li>• Remote sensing/Earth observing systems/Climate change impacts: Mark Eakin, <i>NOAA</i></li> </ul>

Annex B – List of Participants

Ken Banks	Broward County
Mark Eakin	NOAA Coral Reef Watch
David K. Stout	Broward County
Audra Livergood	NOAA
Liz Schrack	The Nature Conservancy
Loureene Jones Smith	National Environment and Planning Agency
Jennifer Mellein	NOVA Southeastern University Oceanographic Center
Ruben Torres	Reef Check Dominican Republic
<b>Steven Johnson</b>	CNMI Division of Environmental Quality
Nicole D'Antonio	Nova Southeastern University Oceanographic Center
Lead Coordinator	Center for Independent Experts
<b>Ramon de Leon</b>	Bonaire National Marine Park
Melissa Sathe	Miami-Dade DERM
Sara Thanner	Miami-Dade County Dept. of Environmental Resources Management
Patricia Rose	FDEP Coral Reef Conservation Program
Dr. Alex Brylske	Florida Keys Community College
Mike Field	US Geological Survey
Kathy Field	none
Brian K. Walker, Ph.D.	Nova SE University/National Coral Reef Institute
Jennifer Schull	NOAA - NMFS - SEFSC
<b>Dave Gilliam</b>	Nova Southeastern University Oceanographic Center
Matt Patterson	National Park Service
Graeme Asif Browne	Department of Physical Planning and Environment
Harmony A. Hancock	NSU Oceanographic Center
Ana M. Gonzalez	Nova Southeastern University
Ben Ruttenberg	NOAA/NMFS
Joanna Walczak	FDEP Coral Reef Conservation Program
Mark Ladd	Florida International University
John McDermond	Nova Southeastern University OC
Robert T. Nishimoto	State of Hawai'i DLNR DAR
Bob Richmond	Kewalo Marine Lab
Fran Castro	CNMI Division of Environmental Quality
Gov. Ben Fitial	Office of the Governor, CNMI
Josie Fitial	Office of the Governor, CNMI
CHARLENE ALVAREZ	GO GREEN KIDS
SARAH ANNE	GO GREEN KIDS LLC
Kasey Cantwell	University of Miami RSMAS, Coral Imaging Lab
Mike Phelan	Self

Chuck Walton	Nova Southeastern University
Kristi Foster	NSU Oceanographic Center
Emily Broderick	Florida International University
Aric Bickel	Division of Environmental Quality, CNMI
Jeffrey Allen	Florida International University
Gwilym Rowlands	National Coral Reef Institute
Stacy Prekel	CPE-Shaw
Sam Purkis	NCRI
Silmarie Padrón	U.S. Fish and Wildlife Service
Penny Cutt	Coastal Systems International
Stephanie Bush	National Coral Reef Institute
Andrew Haley	US Coast Guard
Joe Embres	US Coast Guard
Craig J. Kruempel	Tetra Tech, Inc.
Dave Zawada	US Geological Survey
Brooke Gintert	University of Miami/RSMAS
Collin Daugherty	The Nature Conservancy
Dr. Dave Vaughan	Mote Marine Laboratory
Dave Grant	Ocean Institute
Gerry Davis	NOAA-PIRO
Patricia Lancho	Fundación Dominicana de Estudios Marinos, Inc (FUNDEMAR)
BABITU RARAWA	MINISTRY OF FISHERIES
Drew Martin	Sierra Club
<b>Trina Leberer</b>	The Nature Conservancy
David L Benavente	Coastal Resources Management Office
Katie Parrish	Oceana
<b>Diego Lirman</b>	University of Miami
Adam Brown	Soleo
Peter N Bell	LucasandBell
<b>Laura Geselbracht</b>	The Nature Conservancy
Elena Kobrinski	University of the Virgin Islands
Dan Clark	Cry of the Water
Stephanie Clark	Cry of the Water
Rock Salt	Army (Civil Works)
<b>Croy McCoy</b>	Dept. of Environment, Cayman Islands Govt.
<b>James Byrne</b>	The Nature Conservancy
<b>Caitlin Lustic</b>	The Nature Conservancy
<b>Meaghan Johnson</b>	The Nature Conservancy
<b>Raimundo Espinoza</b>	The Nature Conservancy-Puerto Rico
<b>Chris Bergh</b>	The Nature Conservancy

Flavia Tonioli	NOAA/ CIMAS
Genevieve Brighthouse	Fagatele Bay NMS/ONMS/NOAA
Nadia Bood	World Wildlife Fund
Gregory Boland	Bureau of Ocean Energy Management
Stephanie Schopmeyer	University of Miami/ RSMAS
Jim Hewlett	Finger Lakes Community College
Lauren H2O+s	Florida Dept. of Env. Protection
Steve Tucker	United States Coast Guard
Vangie Lujan	Government of Guam, Bureau of Statistics and Plans
Gregor Hodgson	Reef Check
LT Jennifer Makowski	USCG
<b>Jeanne Brown</b>	The Nature Conservancy
Beth Dieveney	NOAA
<b>Aaron Hutchins</b>	The Nature Conservancy
David J. Brunell	Florida State University College of Law
Damaris Delgado	Departamento de Recursos Naturales y Ambientales
<b>Kemit-Amon</b>	The Nature Conservancy
Margo Posten	Reef advocate
Melody White	US Army Corps of Engineers
Mark Lopez	Blue Ocean Initiative
Mark Lopez	Blue Ocean Initiative
Elaina Todd	Western Pacific Coral Reef Institute
Don Behringer	University of Florida
Rudy	Reef Relief
Dana Wusinich-Mendez	NOAA CRCP
Stephanie Wear	The Nature Conservancy
Rob Ruzicka	Fish & Wildlife Research Institute
Rob Ruzicka	Fish & Wildlife Research Institute
Joey Massa	Tetra Tech, Inc.
Billy D. Causey, PhD	NOAA/ONMS/Southeast Region
<b>Jamie Monty</b>	FDEP CRCP
Don Hess	College of the Marshall Islands
Mill McCleary	Reef Relief
Christopher Boykin	FDEP Coral Reef Conservation Program
Amber Stonik	Reef Relief
Hoku Johnson	NOAA / Papahanaumokuakea Marine National Monument
Nick Morrell	Miami Dade Reef Guard Association
Kristen Hoss	Tanawha Presents
David Palandro	Florida Fish and Wildlife Conservation Commission
Karsten Shein	NOAA National Climatic Data Center
Kate Peach	Florida Atlantic University

Laetitia Plaisance	Smithsonian Institution
Scott Donahue	NOAA - Florida Keys National Marine Sanctuary
<b>Daniel Green</b>	The Nature Conservancy
Patricia Bradley	US EPA/ORD
<b>Rachel Maurer</b>	The Nature Conservancy
Bill Fisher	U.S. Environmental Protection Agency
Mark Lewis	Biscayne National Park
Janet Phipps	PBCo. Dept. Env. Res. Mgmt.
Andy Winer	NOAA
Sean Morton	NOAA / Florida Keys National Marine Sanctuary
Anne Morkill	Florida Keys National Wildlife Refuges
Larry Perez	Everglades National Park
Dr. Tracy A. Ziegler	Everglades and Dry Tortugas National Parks
Mr. William J. Aila, Jr.	DLNR Chairperson
Amber Whittle	Fish and Wildlife Research Institute/FWC
Wendy Wood-Derrer	National Coral Reef Institute
Dr. Bernhard Riegl	National Coral Reef Institute
Corinne Lee	National Coral Reef Institute
Dr. Richard Dodge	National Coral Reef Institute
Barbara Dodge	National Coral Reef Institute
Chantal Collier	Florida Department of Environmental Protection
Andrew Gude	Department of the Interior
Eileen Sobeck	Department of the Interior
Katharine Tzadik	Department of Environmental Protection
Douglas Morrison	None
Jessica Morgan	NOAA Coral Reef Conservation Program
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Gail Hendricks	USDA Natural Resources Conservation Service
Grace Johns	Hazen and Sawyer
Wendy Wiltse	US EPA
Dan Polhemus	USFWS Pacific Islands Fish & Wildlife Office
<b>Petra MacGowan</b>	State of Hawaii
Allen	NOAA / Office of Nat. Mar. Sanctuaries
Suzy Roebling	Florida Keys National Marine Sanctuary
Jocelyn Karazsia	NOAA Fisheries
Dr. Takiara Ingram	U.S. All Islands Coral Reef Committee Secretariat
Carla Friedrich	U.S. Environmental Protection Agency
Hideyo Christian Hattori	American Samoa's Coral Reef Advisory Group
Russell Cartwright	Nova Southeastern University
Terri Jordan-Sellers	US Army Corps of Engineers
Antares Ramos Álvarez	NOAA

Tom Twyford	West Palm Beach Fishing Club
Ilsa Kuffner	US Geological Survey
Zach Ostroff	NSU Oceanographic Center
Jihan Buniag	Division of Environmental Quality
Joseph Artero-Cameron	Government of GUAM
<b>Andrew Baker</b>	University of Miami / RSMAS
Jason Biggs, Ph.D.	University of Guam Marine Lab
David Wachenfeld	Great Barrier Reef Marine Park Authority
Susan Levitt	Department of Navy
Liza M. Johnson	U.S. Department of the Interior
Liz Larson	Nova Southeastern University Oceanographic Center
John Calvo	Western Pacific Regional Fishery Management Council
Shannon Estenoz	Department of Interior
Marlon Hibbert	NOAA/OCRM
Laura Biggs, Ph.D.	University of Guam Sea Grant
Erich Bartels	Mote Marine Laboratory
Capt. Philip Renaud	Living Oceans Foundation
<b>Rick MacPherson</b>	Coral Reef Alliance
Melissa Dore	NSU Oceanographic Center
Jeremy M Kerr	National Coral Reef Institute
Pamela Fletcher	Florida Sea Grant
John McManus, PhD	NCORE/U. Miami
Ari Halperin	Nova Southeastern Oceanographic Ctr
Paola Espitia	Nova Southeastern University Oceanographic Center
Cody Bliss	NCRI
Mauricio Lopez	Nova Southeastern University
Jennifer Bistyga E.I.	City of Boca Raton
Abby Renegar	NCRI/NSU OC
Peter Ortner	CIMAS (UM/RSMAS)
Angie Bera	SWC Inc.
Sandy Walters	South Florida Regional Planning Council/SWC
Shelli Braynard	SWC
Adrienne Carter	Coastal Eco-Group
<b>SHIRLEY GUN</b>	THE NATURE CONSERVANCY
Lisa Krimsky	Florida Sea Grant
Kahlil Hassanali	Institute of Marine Affairs
<b>Ken Nedimyer</b>	Coral Restoration Foundation
Kevin Gaines	Coral Restoration Foundation
C. Anna Toline	National Park Service
Kurtis Gregg	NOAA-Fisheries
Elizabeth Rogers	TNC

Mark Rogers MD	TNC
Lia A. Ortiz	NOAA-NMFS
Sherri Fields	National Park Service, Southeast Region
Kathleen Dobler	USDA-NRCS-PIA
Jack Stamates	NOAA
Edwin Reyes	University of Guam
Will Nuckols	W.H. Nuckols Consulting
Chris Jeffrey	NOAA/NOS National Centers For Coastal Ocean Science
Ms. Jessica Wright	Palm Beach County Environmental Resources Management
Mario Rodriguez	USDA NRCS
Marija Micuda	USVI Coastal Zone Management
Ann Mills	USDA
Howard Hankin	USDA-NRCS
qwerty asdfgh	zxcvbn
Jim Hendee	NOAA
Reggie Dale	Center for Strategic & International Studies
M J Beach	Miami Dade Reefguard Assocoation
Matthew Lybolt	Tetra Tech
Baret Barry	Martin County
Steve Blair	Miami-Dade County Dept. Environmental Resources Mgmt (DERM)
Rina Hauptfeld	Tres Palmas Marine Reserve
Paul Lehmann	USCG
Assistant - FDEP CRCP	FDEP
<b>Tim Austin</b>	Cayman Islands Department of Environment
Dr. Charlie Wahle	NOAA CMSP Program
Roland A. Baldeo	Grenada Fisheries Department
Gerardo Toro-Farmer	University of South Florida
Carlos Suarez	USDA-NRCS
Greg Hendricks	USDA-NRCS
LIANA TALAUE-MCMANUS, PH.D.	UNIVERSITY OF MIAMI
Ericka Canales	Surfrider Foundation
John	FLorida Fish and Wildlife Conservation Commission
Carolyn Doherty	American Samoa Coral Reef Advisory Group
Ellen Kennedy	Port Everglades
Jeff Schmidt	nrcs
Lew Gramer	NOAA AOML / CIMAS
Heidi Toomey	USF Marine College
Christina Vilmar	University of Miami

Anne Rosinski	University of Miami
Thomas Carsey	USDeptComm-NOAA-AOML
Ryan Young	Rookery Bay National Estuarine Research Reserve
Bob Musser	Broward County-Port Everglades
Stephanie Roach	Coral Restoration Foundation
<b>Shelly Lakly</b>	The Nature Conservancy
Andrew Acosta	Environment Florida
Ed See	U.S. Coast Guard
Vanessa McDonough	National Park Service
Cindy Lott	FL Dept. of Environmental Protection
Dr. Natacha Yacinthe	Broward County Port Everglades
Steve Manley	Biscayne Bay Aquatic Preserves
Elsa Alvear	Biscayne National Park
John Adornato	National Parks Conservation Association
Nicki Grossman	GFLCVB
Rich Appeldoorn	University of Puerto Rico
Liz Parissenti	Stanford University
Kristen Hoss	Tanawha Presents....
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Brandon Howard	NOAA Fisheries Service
Anthony DiSilvestro	Biscayne National Park- NPS
Theresa Robitaille	NOVA Southeastern University
Lou Fisher	Broward County NRPMD