

**Southeast Florida Coral Reef Initiative (SEFCRI)
Land Based Sources of Pollution (LBSP)
Technical Advisory Committee (TAC)
Meeting #7
Report of Proceedings
November 29 - 30, 2007**

**National Coral Reef Institute
Nova Southeastern University Oceanographic Center
8000 North Ocean Drive
Dania Beach, Florida**

LBSP TAC Committee:

Name	Affiliation	Nov. 29	Nov. 30
Boyer, Joseph	Southeast Environmental Research Center, FIU	X	X
Dodge, Richard	Nova Southeastern University	X	X
Dustan, Phil	College of Charleston	X	X
Griffin, Dale	USGS	X	X
Kosmynin, Vladimir	FDEP	X	X
Lang, Judy		X	X
Lapointe, Brian	Harbor Branch Oceanographic Institution		
Lipp, Erin	UGA		
Miller, Margaret	NOAA	X	X
Peters, Esther	Tetra Tech	X	X
Proni, John	NOAA, Miami	X	X
Shinn, Gene	University of South Florida	X	X
Soloviev, Alexander	Nova Southeastern University	X	X
Swart, Peter	University of Miami - RSMAS		

LBSP TAC Organizational Committee:

Name	Affiliation	Nov. 29	Nov. 30
Banks, Ken	Broward County DEP	X	X
Brien, Linda	FDEP		
Collier, Chantal	FDEP - CRCP	X	X
Craig, Nancy	Broward County DEP	X	X
Gadbois, Nick	FDEP - CRCP	X	X
Geselbracht, Laura	The Nature Conservancy	X	X
Harvey, Richard	EPA	X	X
McManus, Fred	EPA	X	X
Miller, Cheryl			
Wood, Wendy	Nova Southeastern University	X	X

Presenters and Observers:

Name	Affiliation	Nov. 29	Nov. 30
Clark, Dan	Cry of the Water	X	X
Clark, Stephanie	Cry of the Water	X	X
Drayo, Courtney	University of Miami - RSMAS	X	

Englander, John	SeaKeepers International		X
Evans, Samantha	University of Miami - RSMAS	X	
Gibboney, Meredith	FDEP - CRCP	X	X
Jacoski, Greg	Nova Southeastern University	X	X
Kozlowski, Jennifer	NOAA - CRCP	X	X
Millhouser, Bill	NOAA - CRCP	X	
Monty, Jamie	FDEP - CAMA	X	X
Moulding, Alison	Nova Southeastern University	X	
Rose, Patricia	FDEP - CRCP	X	
Thanner, Sara	Miami - Dade DERM	X	X

Day I, November 29, 2007

Meeting Summary

Meeting Guidelines

Chantal Collier welcomed the group. Everybody in attendance then introduced themselves. Chantal Collier then turned the meeting over to Nick Gadbois.

Nick Gadbois reviewed the facilitator role, guidelines for discussion, and the meeting agenda. He then led the LBSP Project Status Update and discussion.

LBSP Project Updates

Phil Dustan, College of Charleston, updated the TAC on *LBSP Project 5 – Biomarker Study*. He found that some species of coral are always present in the SEFCRI region while others are constantly rotating through. He is now able to determine which species are on the way out and which are on the way in. The field work for this study began in July 2007.

Nick Gadbois updated the TAC on *LBSP Project 8 – Miami-Dade County Benthic Habitat Mapping*. A contract has been developed between FDEP and NSU to implement this project and is expected to be executed by January.

LBSP Project 9 - Martin County Benthic Habitat Mapping is still in need of funding. A proposal is being developed for submittal to the Florida Wildlife Legacy Grants Program in February 2008.

Chantal Collier stated that completing the mapping of southeast Florida's reef systems is a high priority. These projects must be done in order to assemble a complete picture of the northern extension of the Florida reef tract to support the goals of the LBSP focus area. FDEP-CRCP staff and its mapping partners are searching for non-federal funds required to match the possible Legacy program funding. Richard Harvey said that Eric Livingston from Tallahassee might have some good ideas for funding.

Nick Gadbois continued the updates with *LBSP Project 11 – Develop an IMS System with FWRI*. The project team is adding more data layers, mooring balls, and grounding information, along with USGC anchorage locations. Funding to maintain the IMS System beyond 2009 is being sought by FDEP-CRCP.

Fred McManus, EPA, updated the TAC on *LBSP Project 29 – Determine the flux of pollutants exiting the ocean inlets and net flux to the reef community*. This was identified by the TAC as a priority LBSP research project. John Proni and Fred McManus have developed a work plan and budget for the project and the proposal is in the final stages of review. They have asked the EPA for \$152,000 and NOAA for \$136,000. They expect to have a response in one week. This project should start in March 2008 and last for approximately one year. Chantal Collier thanked the federal agencies for their assistance in implementing this project.

Nick Gadbois turned meeting over to Dale Griffin for a presentation on LBSP Project 27 which is jointly funded by EPA and USGS.

Presentation: LBSP Project 27 and 33 – Quantify amounts and flow rates of pollution transported by groundwater to the coastal waters and LBSP Project 33 – Identify sources and signals of LBSP in SE Florida using human enteroviruses as an indicator of fecal contamination.

Dale Griffin, USGS, presented an update of LBSP Projects 27 and 33. As part of these projects, USGS recorded data from the Port Everglades inlet plume. Water samples were taken slightly off-shore from the inlet at the surface and at mid-depth. Enterococci concentrations showed a higher concentration on the surface but the levels did not exceed U.S. EPA recreational thresholds. Fecal coliform bacteria were not present at the surface and were only at seen at mid-depths. *Clostridium perfringens* had higher concentrations at the surface compared to mid-depth. This indicates that the bacteria are a land based source of pollution, originating from the port and extending out to sea.

Dale Griffin said that he would like to map the area during an incoming tide to compare to the results from this test, which was performed during an outgoing tide.

John Proni asked if Dale looked at levels of protozoan, but Dale Griffin said he only studied enteroviruses and adenoviruses as they are very good indicators of fecal contamination.

Presentation: Update of the Port Everglades expansion project

Chantal Collier, FDEP-CRCP, presented an update on the proposed Port Everglades expansion project. This project has been proposed by Broward County and the U.S. Army Corps of Engineers (USACE). The purpose for the expansion of the outer entrance channel is to accommodate post-Panamax vessels - ships too large to fit through the Panama Canal. The USACE has stated that the draft environmental impact study (DEIS) for the project should be released in April 2008. The USACE and resource agencies involved in discussing the potential impacts to coral reefs from this project are using the bathymetric and habitat classification maps developed through SEFCRI to evaluate this project. Anticipated direct impacts associated with the expansion of the outer entrance channel are 102.8 acres and the indirect impacts total 178.8 acres.

Esther Peters asked if the Corps is proposing to widen the inlet. Chantal Collier said yes, the proposal is to widen the channel by 800', the proposal is to deepen the channel from 48 feet to 58 feet, and lengthen the channel through the second and third reef tracts.

Chantal Collier continued, saying the initial Habitat Equivalency Analysis (HEA) done by the USACE consultant did not allow for much mitigation. She added that although resources agencies and academic representatives were invited by the USACE to assist in developing an appropriate HEA parameters, the agencies are not sure what variables will be used when the DEIS will be released. Vlad Kosmynin added that the USACE has recommended only 8 acres of mitigation for these potential reef impacts.

The consensus finding by the reviewers of the USACE survey of the reef areas which would be impacted by the project indicated that the survey lacked appropriate QA/QC procedures, had a low sample size, a lack of appropriate control sites, lack of sufficient sampling protocols, and a lack of a survey of the channel walls. There is also a similar project occurring at the Port of Miami that was not considered in the analysis. The reviewers recommended a third party evaluation, consideration of the Port of Miami expansion, and a proper reef survey.

Phil Dustan said that port expansions are occurring along the east coast. Not only will the dredging have an effect but diesel pollution will also be an issue. Ken Banks added that there will be a lot of thrust and water displacement from the new ships that is not being considered.

Presentation: Outcomes of the SEFCRI Focus Team meeting held on November 6, 2007

Nick Gadbois, FDEP-CRCP, stated that at the Focus Team meeting, project teams were identified for several LBSP Projects including 1.) LBSP project 20, which aims to develop engineering projects and/or management actions to reduce pollution at designated hot spots, 2.) LBSP Project 21, to conduct a workshop to evaluate the outcomes of project 3/19 and implement LBSP Project 20, 3.) LBSP Project 23, to implement an engineering/management plan developed in Project 20, and 4.) LBSP Project 24, which is to educate and change stakeholders' behavior to help reduce the effects of LBSP on coral reefs.

The LBSP Focus Team will conduct Project 21 with the assistance of NOAA and the Center for Watershed Protection. The workshop will help to identify hot spot areas of concern in the SEFCRI region to ensure engineering/management actions address these issues. During the interview process for Project 3/19 entities are being asked to identify hotspot areas in their local region. The project team for Project 21 will be the same team that conducts Project 20.

LBSP Project 24 aims to educate and change Stakeholders' behavior to help reduce the effects of LBSP on coral reefs. There is \$60,000 allotted for this project, which is scheduled to begin in July 2008. The LBSP Focus Team and Project 24 Team Members are exploring building upon preexisting programs such as Broward County's Naturescape Program and the South Florida Water Management District's outreach materials.

Jeff Beal with FWC commented that there is a possibility that some sections of the coral reefs in the SEFCRI region could be deemed a Critical Wildlife Habitat (CWH). CWH have been primarily designated for terrestrial areas and this would be the first in marine waters.

Judy Lang asked what protection a Critical Wildlife Habitat will provide. Chantal Collier replied that specific protections have not been identified, but might include no-take and limited entry areas. FWC would be the enforcement agency should a CWH be established. Phil Dustan said that a small, experimental marine protected area (MPA) would be a good place to start. Ken Banks said that based on socioeconomic studies, the majority of users support closures. Vlad Kosmynin said that dive owners support closures too as long as some areas remain open for diving.

Nick Gadbois turned the meeting over to Meredith Gibboney.

Presentation: LBSP Projects 3 and 19 – Identify agencies/entities with programs/projects/activities related to LBSP and identify existing BMPs that address those activities

Meredith Gibboney, FDEP-CRCP, presented updates on *LBSP Projects 3 and 19*. Project 3 surveyed agencies with programs that target LBSP in southeast Florida and evaluates gaps and needs. Project 19 compiles best management practices that are currently in place or that can be put into place to reduce LBSP. As of November 2007, 96 surveys have been distributed and 32 of those have been returned.

Programs in place in Broward County EPD include storm water management, establishment of the Naturescape program, Naturescape irrigation service, domestic wastewater and surface water management licensing. The City of Pompano has a storm water management and pipe lining program in place. The City of Fort Lauderdale has a Master Stormwater Program. The City of Hallandale Beach has put in a Revegetation Double Dune System to stabilize the shoreline from erosion.

Phil Dustan suggested that if someone figured out how much money these projects save the city, a tax credit could be offered. Meredith Gibboney said that the Naturescape irrigation service which works with the Naturescape program demonstrates how much water and money an individual can save.

Meredith Gibboney added that gaps include regional communication, water quality monitoring, and on-site water collection. Phil Dustan said that most of the municipalities have included storm water and asked if any of them have a storm water utility.

Nick Gadbois responded that some have them do but there is limited communication between storm water and wastewater utilities.

Nick Gadbois then turned the meeting over to Jennifer Kozlowski.

Presentation: Review of LBSP Projects 20-23

Jennifer Kozlowski, NOAA CRCP, previously addressed the TAC in May 2006 when *LBSP Projects 20-23* were just being discussed. The goals are to provide specialized assistance to local managers to enhance effectiveness of local planning and management capability to address LBSP using watershed approaches. Since 2006, workshops were held in other coral jurisdictions focusing on improving the effectiveness of local watershed management. Outcomes include a Maui County storm water ordinance, a proposal for streamlined permitting, the establishment of a draft watershed plan in the U.S. Virgin Islands, and a model storm water ordinance and watershed pilot project in Puerto Rico. Continued funding in 2008-2009 is anticipated and can be of benefit to the SEFCRI LBSP project objectives.

Judy Lang asked how much help would be available. Jennifer Kozlowski said that \$30,000-\$40,000 would be available for 1 to 3 projects. NOAA will manage the money and will be available as soon as the 2008 Federal budget is passed.

Margaret Miller asked Jennifer Kozlowski if she had issues with attendance at the workshops. Jennifer Kozlowski responded that it is a lot different in the islands compared to the U.S. mainland, as agencies are much smaller and everybody interacts. It could be accomplished here by hosting workshops targeting specific agencies. Chantal Collier added that the work that Nick Gadbois and Meredith Gibboney have done with Project 3/19 has laid the groundwork for this.

Fred McManus asked if NOAA was looking for applications from SEFCRI. Jennifer Kozlowski said that if the FDEP-CRCP, the LBSP Focus Team and the TAC tell her what the SEFCRI LBSP Focus Area needs, NOAA will be able to assist. Chantal Collier said that there would be a meeting the following day to discuss this.

Nick Gadbois turned the meeting over to Samantha Evans.

Presentation: LBSP Project 32(a): Identifying sources and signals of LBSP using stable Nitrogen isotopes in macroalgae.

Samantha Evans began by saying that this project is more theoretical than the title implies because of the complexity of the Nitrogen Cycle. Nitrogen (N) isotopes give information on sources and cycling of N. Sewage can be traced by identifying N^{15} isotopes.

Goals of this EPA-funded project are to examine whether fractionation during nitrification and assimilation influences the N^{15} content of algae, *Gracilaria sp.* and *Agardhiella sp.* There are two groups of experiments associated with this project. The first investigates the effect of varied Nitrate (NO_3) and Ammonia (NH_4) concentrations on growth. The second experiment explores growing algae samples in different mixed concentrations of NO_3 and NH_4 .

Expected results from these experiments will determine whether measured ranges of N isotopes in macroalgae can be produced without invoking anthropogenic sources, will determine the appropriate fractionation factors for assimilation and determine under what circumstances algae utilize NO_3 or NH_4 . Results so far have produced variations of up to 9 ‰ without changing the isotopic composition of the input and have also measured the fractionation factors for assimilation into *Gracilaria sp.* and *Agardhiella sp.* Also changing the concentrations of NO_3

and NH₄ demonstrated that assimilation of the 2 nitrogen species varies among the different species of algae. When there is an excess of nutrients for the algae, it fractionates at a much higher rate.

John Proni noted how important those results were as this controversy had persisted for decades. Phil Dustan asked Samantha Evans how she interpreted Mike Risk's data that signals can change over time. She responded that this could be true as people can match anything as long as there is a second proxy. Margaret Miller added that the concentration may have changed, but not the source.

Public Comment

Public comment was given by Dan Clark of Cry of the Water followed by Stephanie Clark of Cry of the Water. No written comments were provided by Cry of the Water.

Nick Gadbois turned the meeting to Esther Peters for the White Paper discussion.

White Paper Discussion (aka. Beige Paper)

Esther Peters began by saying that she has received materials for the White Paper and now has an introduction with background information. Dale Griffin wrote a section on the condition of reefs in Broward County but the remaining counties are still needed. The document is currently up to 18 pages long. She added that there are a number of holes that still need to be filled and the studies do not need to be very detailed.

Esther Peters said that the TAC needs to finalize who is writing each section on the Beige Paper and asked if the group should continue to assemble the document. Phil Dustan responded that the Beige Paper would be beneficial to give to a government agency or a non-governmental organization (NGO). Richard Harvey added that the document developed in the Keys was beneficial when people tried to undermine the work being done. He said it made the work legitimate.

Esther Peters reminded the group that they do not have the atmospheric data or water quality data yet.

Dale Griffin said that if the document focuses on the entire SEFCRI area, it will be a long complex document. He suggested using Broward County as a small sample site. Margaret Miller asked if there was a concern with focusing on only a small area of the SEFCRI region. Chantal Collier said that the document would have more utility if it covered the entire area.

Judy Lang said that she spoke with John Noyes about including some of his photos from the 1970s in the Beige Paper. She also spoke with Ray McAllister and while he does not have the information to back his photos, he did refer her to people who take high quality videos and photos today to be used for comparison.

Margaret Miller said that assembling this document is going to take a long time and the TAC should keep working on it. Chantal Collier added that it can be done but everybody needs to assist in the development. She said that the CRCP office could help people stay on point.

Phil Dustan suggested adding personal accounts of reef degradation into the document. He said that they can be very powerful when telling a story on a human basis. Nick Gadbois said that he would e-mail the completed sections of the Beige Paper to the TAC so it can be reviewed overnight and input could be added the following day.

Chantal Collier then distributed the ballots for electing new TAC members. The TAC and Organizational Members then voted on new members. The results would be tallied overnight and shared the following day.

Nick Gadbois adjourned the meeting for the day.

Meeting Adjourned

Day II, November 30, 2007

Chantal Collier welcomed the group back to the meeting. Nick Gadbois reviewed the facilitator roles, meeting guidelines, and the agenda. He then presented an overview of Day 1 of the meeting. Next, Nick Gadbois presented the results from the previous days voting. Piero Gardinali, Hal Davis, and John Fauth have all been elected to membership. A letter will be mailed out officially requesting their participation as members of the TAC. Nick Gadbois then turned the meeting over to Alex Soloviev.

Presentation: Calypso Project Update

Alex Soloviev, NSU, said this project involves studying the plume leaving Port Everglades with RSMAS, NSU, and International SeaKeepers. He noted that as soon as the sensors entered the plume, temperature, salinity, and density all changed. During the summertime the current moves the plume north and during the winter the plume travels south. These counter-currents are roughly 150 meters deep in the spring months but move to the surface in the fall months.

Ken Banks asked if it could possibly be an eddy that the project group witnessed. Alex Soloviev replied that it could be but appeared to be too consistent to be an eddy.

Alex Soloviev added that the current magnitude varies greatly which could mean that the Gulf Stream meanders greatly. Near the sea floor, the direction of the current changes, and at times, this can also be seen at the surface. The Gulf Stream has a seasonal cycle which brings about these changes. Exchange through the Port Everglades channel is modulated by tides, rainfall, and other short-time events. An optimal sampling strategy for chemical parameters should include dominating time scales. The buoy used in the Calypso experiments could also be used in the plume study.

Esther Peters noted that sampling for the chemical parameters needs to be based on real time information. Alex Soloviev replied that would not be a problem as these buoys have the capability of doing so.

John Proni said that the timescale measurements are very important to the channel but there is an incompatibility between physical measurements and chemical measurements. He noted that at the Boyton Inlet, there are impulses of the chemical composition that are in sync with the derivative of the tidal fluxes.

Following Alex Soloviev's presentation, Esther Peters announced that there would be a coral disease meeting after this TAC meeting.

Nick Gadbois turned the meeting over to Rob Ruzicka.

Presentation: SEFCRI Fishing, Diving and Other Uses (FDOU) Focus Area Update

Rob Ruzicka, FDEP-CRCP, began by saying that 1/3 of all fishing license holders [in the state of Florida](#) live in the SEFCRI region. The FDOU Focus Team's goal is to develop options for a management plan that preserves and protects biodiversity of the reefs in southeast Florida. *FDOU Project 10* aims to compare scientific data and social perceptions on southeast Florida coral reef conditions and use. Stakeholder group surveys were conducted. This FDOU Project evaluated stakeholder opinions of past and present conditions of the resource and most groups agreed that the reefs were in a state of decline. Rob Ruzicka then presented survey data examining changes in resource use. He said that it is tough to determine if the decline of fish landings is attributed to less fish or less fishermen.

Rob Ruzicka then spoke of *FDOU Project 23 – Evaluation of the potential for a marine zoning plan for SE Florida*. Seventy percent of people surveyed believe that MPAs are an effective tool for managing marine resources. Most people surveyed believed that water quality, LBSP, water pollution, and waste dumping are the most important issues threatening coral reefs.

Margaret Miller asked if this is the same stakeholder group as the previous study. Rob Ruzicka noted that it was a different group but used similar methods.

The most favored form of management among survey respondents was an MPA which allows some fishing and diving consumptive use. Results will be used in *FDOU Projects 18 and 20* to analyze fisheries assessment data and to develop management alternatives. In *FDOU Project 26* the results of projects 18 and 20 will be disseminated at public workshops, resource management meetings, and open for comments and review. Outcomes can then be recommended to the appropriate governing authority.

Margaret Miller asked if the first project studied just fish or reefs as well. Rob Ruzicka said it looked at resources as a whole, including reefs. Gene Shinn then asked who designed the surveys. Rob Ruzicka said that the FDOU project team and contractors were responsible for [survey development](#). [Each survey was designed to target a specific stakeholder group \(e.g., fishermen, divers, and surfers.](#)

Vladimir Kosmynin then noted that better management means different things to different groups and that management cannot be determined by ballot voting. Ken Banks added that different resources hold different monetary values.

Chantal Collier then reminded the group that these projects are being done to involve the public in informing management options and actions. The process is different because there is no mandate to develop a specific managed area plan, such as what was done in the Sanctuary or Biscayne National Park, for example.

Nick Gadbois then turned the meeting over to Esther Peters for a follow up on the outline of the Beige Paper.

Beige Paper Discussion

Esther Peters said that she only has a rough draft but that there is some good information in the paper so far. She asked the TAC to write their sections and e-mail it to her so she can incorporate it into the first draft. Judy Lang and Margaret Miller will assist gathering the information. Esther Peters then noted that more input on water chemistry is still needed. Nick Gadbois said he would follow up with Brian Lapointe who volunteered to write some of the water quality sections.

Dale Griffin then offered to do the human health section if Erin Lipp. Esther Peters said Erin Lipp has been in contact with her and she is working on those sections. Phil Dustan said he would write the personal essay regarding reef decline.

Esther Peters set the deadline for the completed sections of the first draft at February 28, 2008.

Nick Gadbois turned the meeting over to John Proni.

Presentation: Florida Area Coastal Environment Update

John Proni, NOAA, presented an update of Florida Area Coastal Environment (FACE) project, a subcomponent of the Ecosystem Research Program (ERP). He said that he envisions the ERP to become the dominant program for distributing money to universities. He also said that there was a need to look beyond the coast including the South Florida Water Management District's Everglades Restoration Program. John Proni continued saying plumes leaving the inlets of South Florida have been tracked for over 30 miles. The vertical distribution of the plume can change, especially if dredging is occurring.

John Proni said that ammonia is taken up very rapidly out of the outfall and this affects the recorded levels when taking samples back to the lab for analysis. The newer system being used by FACE allows measurements to be taken *in situ*.

John Proni then said that a few miles offshore there is a pool of nutrient rich water. The waters from the Boynton Inlet are approximately one to two orders of magnitude higher in nutrient content. He added that a high concentration of low flow is worse than a low concentration of

high flow. The FACE program also did a compared microbial water quality of incoming and outgoing tides in Boynton inlets. Levels were approximately three times higher on the outgoing tides than incoming.

NOAA has been receiving \$750,000 a year for this study but that only maintains a small number of stations, most of which are in the Caribbean. John Proni said that he has no funds to start any new stations despite the many requests to start Coastal Ocean Observing System (COOS) stations. He said that his goal is to get new stations installed at the CREMP stations.

Richard Harvey asked what each monitoring station costs. John Proni said they were \$100,000 each. John Proni said that he hoped to see further cooperation between FDEP and NOAA to add more inlets and outfalls to the study.

Nick Gadbois turned the meeting over to John Englander.

Presentation: “SeaKeeper 1000” Port Everglades Shipping Channel Sensor System

John Englander, *SeaKeepers*, said that his organization has the funding to let NSU install a *SeaKeepers* monitoring system in the entrance to Port Everglades. There are currently 53 systems installed on commercial ships, private yachts, buoys, lighthouses, and piers all over the world and 21 more are being processed. Reporting can range from every three hours to every minute. The systems allow for easy upgrades and have a low cost to build and maintain. These monitoring systems are designed for unattended and remote locations. These systems record atmospheric, oceanographic, and geographic data, including temperature, salinity, dissolved O₂, pH, and reduction potential (Eh). *SeaKeepers* is currently developing HAB and pCO₂ monitors and are working on more prototypes. He said that the aim for this design is similar to the universality of the personal computer; that instruments need to be standardized to forward the industry.

Laura Geselbracht asked who compiles and analyzes the data. John Englander said that the weather data goes directly to the weather service for forecasting. *SeaKeepers* only compiles the data for the internet. He said their aim is only to be the facilitator of the data collection.

Phil Dustan asked how much the sensor systems cost. John Englander replied that it depends on the instruments, but roughly \$60,000 each.

TAC Administrative Business

Nick Gadbois opened the floor for TAC administrative business. He said that he would be sending letters to the new TAC member nominees inviting them to become members of the SEFCRI LBSP TAC.

Nick Gadbois then asked the TAC if the public comment period should be extended. Phil Dustan said no, as more people could show up and then there would not be enough time. He added that the TAC presently allows for some public discussion during the meetings. Vladimir Kosmynin agreed, saying that the discussions following the public comment often last longer than

anticipated. Chantal Collier suggested that if the time was available, the public comment period could be extended on a case-by-case basis.

Nick Gadbois then set the tentative dates for the next meeting as May 1-2 or 8-9, 2008.

Public Comment.

Public comment was given by Dan Clark of Cry of the Water followed by Stephanie Clark of Cry of the Water. No written comments were provided.

General Discussion Period

Vlad Kosmynin said that the presentations by Alex Soloviev and John Proni deal with much larger scales than the TAC is concerned with and that they do not connect to near shore reefs.

Nick Gadbois adjourned the meeting 12:40 pm

Meeting Adjourned

Action Items

No.	Action Item	Responsible Party	Due Date
1	Create a rough draft of White Paper Sections	All TAC Members	February 28, 2008
2	Send letters of nomination to the elected nominees for TAC membership	Nick Gadbois	None Set
3	Set next TAC meeting date	Nick Gadbois	None Set