

Science, Service, Stewardship



# NOAA IN THE CARIBBEAN

February 2011  
ASLO Town Hall Meeting Report

NOAA



# NOAA in the Caribbean Initiative

2/16/2011

## ASLO Town Hall Meeting Report

NOAA's Southeast and Caribbean Regional Team (SECART) initiated NOAA in the Caribbean (NinCarib) as a forum to improve communication and coordination among NOAA and its partners working in the Caribbean region. Through a "Town Hall" meeting on February 16, 2011, during the American Society for Limnology and Oceanography (now Association for the Sciences of Limnology and Oceanography, ASLO) meeting in San Juan, Puerto Rico, the SECART Caribbean Working Group presented the objectives of NinCarib to a diverse group of NOAA employees and potential partners currently active in research, management, training, and/or other efforts in the Caribbean. The goal was to stimulate interest and invite participation in NinCarib. The meeting was attended by 46 people, who engaged with members of the SECART Caribbean Working Group and other NOAA non-SECART members to make recommendations for moving forward with the initiative.

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## ACRONYM LIST

AOML – Atlantic Oceanographic and Meteorological Laboratory

ASLO - American Society for Limnology and Oceanography (now Association for the Sciences of Limnology and Oceanography)

CRCP – Coral Reef Conservation Program

CREIOS – Coral Reef Ecosystem Integrated Observing System

DNER – Puerto Rico Department of Natural and Environmental Resources

EPA – U.S. Environmental Protection Agency

IITF – International Institute for Tropical Forestry

JOBANERR – Jobs Bay National Estuarine Research Reserve

NASA – National Aeronautics and Space Administration

NC – North Carolina

NCCOS – National Centers for Coastal Ocean Science

NCDC – National Climatic Data Center

NESDIS – National Environmental Satellite, Data, and Information Services

NinCarib – NOAA in the Caribbean

NMFS – National Marine Fisheries Service

NOAA – National Oceanic and Atmospheric Administration

NOS – National Ocean Service

NWS – National Weather Service

PR – Puerto Rico

RASMAS – Rosenstiel School of Marine and Atmospheric Science

SECART - Southeast and Caribbean Regional Team

UC – University of California

UGA – University of Georgia

UNEP – United Nations Environmental Program

UNH – University of New Hampshire

UPR – University of Puerto Rico

USDA – U.S. Department of Agriculture

USF – University of South Florida

USGS – U.S. Geological Survey

USVI – United States Virgin Islands

UVI – University of the Virgin Islands

VCHT – Vieques Conservation and Historic Trust

# NOAA in the Caribbean Initiative

## TOWN HALL MEETING REPORT: FEBRUARY 16, 2011

### BACKGROUND

During a NOAA in the Caribbean (NinCarib) scoping workshop held August 18-19, 2010 in Miami, Florida, members and non-members of NOAA's Southeast and Caribbean Regional Team (SECART) decided to hold events at other regional meetings. For this reason, a NinCarib Town Hall Meeting was organized as part of the events associated with the American Society for Limnology and Oceanography (now Association for the Sciences of Limnology and Oceanography, ASLO) meeting held in San Juan, Puerto Rico. The NinCarib Town Hall meeting was held on February 16, 2011. The meeting consisted of a series of presentations by NOAA panelists to introduce the audience to the scope of NOAA programs, including climate services, satellite observations, the NOAA Coral Reef Conservation Program, ecosystem monitoring, research, and fisheries management. Following the presentations by the seven panelists, the panelists and at least one other NOAA employee joined one of five round tables to facilitate discussions with participants. The discussions focused on: the work of each participant in the Caribbean, perceived benefits of moving forward with the NinCarib Initiative, the potential for engaging in the initiative, and recommendations for moving forward. This report is a compilation of the discussion notes compiled by a NOAA employee at four of the five round tables, as well as additional questionnaires submitted by participants and others who expressed an interest in participating in the NinCarib Initiative.



# ASLO TOWN HALL MEETING RESULTS

## Work Done by Participants in the Region

Based on the discussion groups during the ASLO Town Hall meeting, attendees conduct the following work in the region:

- Research on contaminant transport to hydrologic systems
- Stormwater management, benthic mapping, and establishing a baseline for sediment and chemical composition
- Imagery, remote sensing, and benthic data collection
- Land-based sources of pollution, resource evaluation, coastal water quality monitoring
- Studying the impact of land-based sources of pollution on stream ecosystems
- Research on metal pollution in nearshore waters
- Research on contaminants and nutrients in the water column
- Projects involving land use and surface water data and ground water and aquifer discharges to nearshore waters
- Climate studies, collecting data for forecast products, climate change investigations, problems with rip currents
- Mapping of shallow and mesophotic reefs
- Studies on land-based sources of pollution and stressors in coral reefs
- Coral reef monitoring, including coral health, coral disease and impacts of blooms
- Microbial ecology in coastal waters and ocean
- Studies of the lionfish invasion
- Genetic connectivity of *Acropora* spp.
- Partnering with local groups and local/federal agencies to restore and better manage fisheries habitats
- Scientific understanding and management of bioluminescent bays in Puerto Rico
- Environmental education
- Habitat characterization
- Coral symbioses
- Linking uphill watershed activities to health of coastal habitat
- Long-term trends, including response to hurricanes, sediment, assessments in urbanized basins, changes in land use
- Instrumentation and on-line monitoring

In addition, participants and others who expressed an interest in receiving additional information about the NinCarib initiative indicated that they conduct the following work in the region:

- Habitat mapping and hydroacoustic fish surveys
- Site selection for aquaculture ocean farms
- Global climate simulations with the Ocean-Land-Atmosphere Model and validating results
- Integrated Marine Protected Area Climate Tools

- Long-term research on stream chemistry, hydrology, and sediment and nutrient transport from streams in Puerto Rico to nearshore waters and rain chemistry and overall atmospheric deposition – similar work in St. Vincent, St. Lucia, Dominica, Costa Rica
- Coral reef physiology
- Research on marine plant/herbivore interactions, coral spawning and recruitment, benthic cyanobacteria and cyano and harmful algal blooms
- Report card on health of the reef in the region based on database of reef health and socioeconomic indicators
- Organize training events in region
- Heavy metal pollution and foraminifera as bio-indicators
- Land purchase for conservation
- Ship groundings and oil spill response
- Sportfishing and management of marine environment, reservoirs, and rivers
- Research and policy to protect coastal ecosystems
- Fate and transport assessments of pesticides and other agrochemicals to coastal and inland waters/watersheds
- Management, education, research, and monitoring of estuarine waters
- Management of fisheries and wildlife habitat and protected species
- Regional ocean observing system, Atlantic Ocean Acidification Test Bed
- PR and USVI Gap Analysis project
- Latin American and Caribbean Network on Marine Microbes

## Benefits that Participants Can Obtain from the NinCarib Initiative

Based on the discussion groups during the ASLO Town Hall meeting, the following opinions regarding potential benefits of their participation in the NinCarib initiative were provided:

- NOAA CRCP has access to high resolution images and would like to partner with USGS and NWS to be able to publish wind, thermal stress, light, etc. to detect impact on coral bleaching
- Collaboration with partners in efforts directed toward sustainable resources
- Climate information from USGS and NWS can be made available to everyone
- Partners can work together to pair land/watershed-based monitoring and assessment and add a marine component
- Can achieve coordination of datasets
- Improved access to communication
- Outreach to communities and use of scientific information to assist in planning and decision-making
- Coordination between and knowledge of various scientific activities
- Interaction between scientists and managers to exchange resources (including lab/field techniques and/or information) and achieve collaboration
- Identification of needs and funding opportunities in the region in a central location
- Partner to obtain support for projects identified as priority through NinCarib Initiative
- Can establish targeted research programs to respond to gaps in current scientific knowledge
- Networking to integrate more areas and fields of research in the whole Caribbean region
- Provides forum to broadcast your accomplishments

In addition, participants and others who expressed an interest in receiving additional information about the NinCarib initiative provided the following opinions regarding potential benefits of engaging in the NinCarib initiative:

- Will keep participants up-to-date on what's going on in Caribbean and provide data that will assist in making everyone's work more comprehensive
- Obtain access to local high-resolution surface characteristics databases (topography, land use, land cover, soils, vegetation) to improve climate modeling
- Learn about persistent regional circulations and microclimates that have not been previously simulated by numerical prediction models
- Enhance knowledge of the hydrodynamic nature of fresh and saltwater interfaces
- Being better able to integrate climate information with oceanographic and biological information and better tailor climate information to meet the needs in the region
- Would be very useful to have a network of people/sites with data of interest on streams, rivers, rain, and dust fluxes
- Better communication between scientific researchers and private stakeholders as to the availability of data and current work underway by NOAA scientists and data integration with NOAA scientists
- Possible partnerships between existing facilities in the Caribbean region
- Technical assistance with growing database of reef health and integration into other platforms
- Access to funding opportunities, post-doc opportunities, collaboration, networking, and partnerships

- Communication, facilitation of research and regulatory/policy decision-making
- By defining problem and protection
- By prioritizing watershed management and research project aimed at these
- Get support and expertise and information regarding scientific opportunities to do assessments and long-term studies to benefit existing programs
- Climate change and regional impact studies, tsunami modeling and bathymetry, rip current information can all be enhanced through better coordination of different programs
- Collaboration with NOAA for the sustainable development of PR and USVI coastal and marine resources
- Collaboration with universities and other groups producing or modeling the distribution of species and characterizing benthic habitats
- Obtain qualified personnel to provide population genetics training and restoration training
- Obtain access to funding for other techniques for genetic analysis of corals
- NOAA's Restoration Center will be better able to identify needs and opportunities for funding in the region and potential partnerships, as well as using targeted research programs to fill in gaps in current scientific knowledge related to restoration methods, recovery horizons, recruitment, effectiveness of BMPs, etc.

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## Ways Participants Can Engage with the NinCarib Initiative

Based on the discussion groups during the ASLO Town Hall meeting, participants provided the following recommendations to engage in the NinCarib initiative:

- Assist in the identification of and response to local and regional challenges and needs
- Provide ideas and technical assistance to resolve problems
- Participating in collaborative efforts, workshops, visits to laboratories and field, and providing guidance to graduate students
- Data outreach and improvements in Caribbean-wide communication
- Would like to engage through e-mail lists and workshops
- Looking for opportunities to leverage grant-funded activities that specifically target projects that use NOAA products
- Opportunities to collaborate on non-web-based outreach in USVI (radio or newspaper)

In addition, participants and others who expressed an interest in receiving additional information about the NinCarib initiative provided additional recommendations in order for them to engage in the NinCarib initiative:

- Through sharing of results of work
- By pointing out Caribbean Basin needs that can benefit from NOAA's complementary initiatives
- By actively engaging interested parties (water resource managers, landuse planners, climatologists, emergency managers, park services, wildlife restoration programs, departments of transportation, managers of infrastructure and water, sewer, and communication systems, etc.) to request input regarding products and formats needed by users related to climate simulations
- By developing a network of people/sites with interest in a system-wide understanding of the impacts of river and atmospheric inputs on the biogeochemistry of the Caribbean and key questions related to these
- Can serve as an outlet for information and work to support selection of study locations
- Keeping pace with current research directions of the NOAA initiatives for coral reef health and monitoring
- Maintaining collaborative ties with NOAA staff scientists
- Improving data inventory
- Develop working group related to bio-indicators
- Cross-over with NOAA Biogeo group in applying foraminifera as bio-indicators
- Get involved with assisting in management of groups with an interest in biogeography
- Research partnerships and data sharing
- Local government agencies can assist in ensuring needs are met
- Decision support services
- Providing contact information for resource users, funding needed applied research, outreach and extension efforts, and developing/enhancing ocean literacy
- Identify and support new users for NCCOS data products
- By providing link to a collaborative group that wants to expand or improve existing habitat and species occurrence data for PR and USVI
- Collaborate in the organization of trainings and provide field and laboratory installations for these in Columbia, assist in training students in themes of interest

## Recommendations from Participants for Moving Forward

Based on the discussion groups during the ASLO Town Hall meeting, participants recommended the following to move the NinCarib initiative forward:

- Including international component and linking to existing international efforts (e.g., UNEP)
- NOAA should take the lead to provide a format for communication and opportunities for discussion, feedback, and collaboration among participants in the region
- Create communication portals or other means to inform participants about activities in region, including at the local government level, and to create a way to report problems/disasters in region
- Use jurisdictions of different agencies in region in combination with each other as tools to tackle problems region-wide
- Create experts list (grouping people by specialty) to open lines of communication for consulting with one another when someone runs into something he or she has questions about
- Create a NinCarib list serve (like NOAA's coral list and National Sustainable Agricultural Initiative) and send weekly e-mails with updates on the initiative, links to documents, technical memos, etc. (see example such as Weekly Harvest Newsletter: Sustainable Agriculture News Briefs from the National Sustainable Agriculture Information Service)
- Provide information regarding funding opportunities
- Provide better ways to partner between NOAA offices
- Provide interface with SECART
- Need to increase collaboration between NOAA, universities, and local agencies
- Quarterly conference call to learn of what partners are doing in the Caribbean
- Prioritize the common needs across the participants and then decide how to move forward based on the prioritization and needs
- Create a list serve as an outlet for people who have data needs to connect with those who may have the data and for people to communicate with others the availability of their data, or a new publication or proposal
- Include NOAA International Program representatives
- Clarify the potential for collaboration in non-US jurisdictions
- Create international connection and network of marine science and conservation in the Caribbean through Latin America, UK Antilles, and French Islands
- Initiate a blog where NinCarib members could express needs and potential collaboration and students could seek assistance
- Create a synthesis/inventory of data products and a directed gap analysis to identify needs
- Geographic extension to non-US Caribbean and a systematic look at the Caribbean as a distinct region
- More collaboration and interaction with partners in Caribbean region
- Continue promoting specific locations that are going to receive a lot of scientific research

In addition, participants and others who expressed an interest in receiving additional information about the NinCarib initiative provided the following additional recommendations to move the initiative forward:

- Start website that summarizes all NOAA work in the Caribbean
- Have NinCarib participants meet once every 2 years to exchange information about progress of work and provide a web link to these meetings so Caribbean nations can participate through webinars. Record webinars and meetings and make recordings accessible through website for viewing at any time
- Work with community groups and educators to identify needs

- Need a realistic work plan to state the issues affecting the Caribbean and identify which fall within the scope of the group then assign priorities to each of the issues. A reasonable time frame should be set to concrete this work plan.
- Develop a NOAA/Academic/NGO working group to push forward a Caribbean perspective on the issues and develop a strategy for funding such an initiative
- Workshop between researchers and NOAA staff to discuss integration efforts
- Keep the ball rolling
- Establish/enhance communication
- Develop a way to compile all the information that is out there by relevant subjects and keep track of people who work on these subjects for future reference and collaboration
- Provide an updated mailing list
- Identify/design road map of specific support and/or collaboration from perspective of local partners, such as DNER in Puerto Rico
- Get all NOAA, NASA, and USGS climate initiatives aligned
- Enhance information exchange and collaboration efforts

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## Other

Discussion groups also identified the following data gaps:

- Need to improve knowledge of coastal hydrological processes and tidal influences into ground water resources
- Need to quantify freshwater discharges in Puerto Rico and impacts on the coast
- Conditions that can lead to coral bleaching
- Updated bathymetric maps
- More work on Caribe EWS Tsunami Program
- Need to correct vertical datum (which was also a comment from CREIOS interviews)
- Study of the Caribbean as a system-wide unit of study looking at, for example, effect of coastal runoff

In addition, participants and others who expressed an interest in receiving additional information about the NinCarib initiative identified the following data gaps:

- Survey participants to assess level of interest in climate simulations, determine specific output products to be generated based on user needs, actively engage interested parties, and provide results to all potential users of the products
- Address key questions: 1.) the role of direct human activities (land use, sewage disposal) versus more stochastic storm events on the nitrogen budget for the Caribbean; 2.) the magnitude of river runoff and dust deposition as inputs of iron into the Caribbean; 3.) linking coral health to nitrogen and sediment input at sites throughout the Caribbean
- Need to develop strict protocols or guidelines for sediment analysis for pollutants

Discussion groups also made the following recommendations that were aimed at SECART or other NOAA organizations or programs:

- More effort is needed on the part of SECART to interact with local groups, including Sea Grant, NWS, IOOS, etc.
- Explore collaboration with European regions
- CoRIS website needs a user guide (many folks at the table did not know CORIS existed or didn't use it because the site has problems)
- Topics for future meetings: data integration to seek a broader relevance, dead-end products, integrate from outreach DGI genome center to engage kids in college and high school to participate in annotating genetic information, target specific municipalities

In addition, participants and others who expressed an interest in receiving additional information about the NinCarib initiative provided the following recommendations aimed at SECART of other NOAA organizations or programs:

- Market to researchers in moving toward specific, standardized parameters that can be used by people at no cost
- Need to understand the role each NOAA agency plays in the Caribbean and explore avenues for interaction to enhance our services
- Make sure duplication of efforts is avoided by blending NOAA efforts in the region

## PARTICIPANTS

### PANELISTS AND PRESENTATION TITLES

Dr. Geno Olmi – NOAA in the Caribbean: Content and Background

Dr. David Brown – Regional Climate Services

Dr. Mark Eakin – Satellites and the Caribbean Coral Reefs: Observations from NESDIS and Coral Reef Watch

Dr. Michelle Wood – Coral Ecosystem Research at the Atlantic Oceanographic and Meteorological Laboratory

Chris Caldwell – NOAA’s National Ocean Service

Dr. Lisamarie Carrubba – NOAA Coral Reef Conservation Program: Managing Coral Reef Ecosystem Resources

Dr. William Arnold – NOAA Fisheries Service, Southeast Regional Office

### DISCUSSION GROUPS

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Leaders: Dr. Michelle Wood (AOML), Aitza Pabón (NMFS CRCP)

Participants: Patricia Rincón Díaz (IITF), Dr. Luis Felipe Artigas (Littoral University, France), Dr. Rocio del Pilar García (Universidad del Magdalena, Columbia), Dr. Ernesto Otero (UPR Marine Sciences), Jeiger Medina-Muñiz (student), Dr. Sean Griffin (NOAA Restoration Center), Dr. Michael Latz (Scripps), Dr. Richard Appeldoorn (UPR Marine Sciences), Dr. Michelle Shärer-Umpierre (UPR)

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*Discussion notes were not provided for the following group, but some individual questionnaire responses were received: Leaders: Dr. Mark Eakin (NESDIS), José Rivera (NMFS)*

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