

Final Evaluation Findings

Puerto Rico Coastal Management Program

June 2005 to September 2015

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Executive Summary

The Coastal Zone Management Act (CZMA) requires the National Oceanic and Atmospheric Administration (NOAA) to conduct periodic evaluations of the performance of states and territories with federally approved coastal management programs. This evaluation examined the operation and management of the Puerto Rico Department of Natural and Environmental Resources (DNER), the designated lead agency, for the period from June 2005 to September 2015. The evaluation focused on three target areas: changes to the federally approved program, climate adaptation and resilience, and public access.

The findings in this evaluation document will be considered by NOAA in making future financial award decisions concerning the Puerto Rico Coastal Management Program. The evaluation came to these conclusions:

Accomplishment: The Puerto Rico Coastal Management Program significantly improved the process for delineating the maritime terrestrial zone by working with partners in an open and collaborative process to develop a technically sound official reference system. The department is currently pursuing revisions to Regulation 4860 to incorporate the official reference system into maritime terrestrial zone program administration.

Accomplishments: The Puerto Rico Coastal Management Program is successfully serving as the executive secretariat of the Interagency Beach Management Board, which has allowed the board to expand its efforts to address key public access issues such as solid waste.

Accomplishment: The Puerto Rico Coastal Management Program has successfully completed a first-of-its-kind model project in Puerto Rico, providing enhanced public access for disabled persons at Punta Tuna Reserve.

Accomplishment: The Puerto Rico Coastal Management Program is a leader in bringing organizations and people together through the Puerto Rico Climate Change Council to address climate change. The council has conducted an island-wide vulnerability assessment that resulted in several executive orders to further plan for climate adaptation and mitigation. The coastal program is also successfully supporting the incorporation of climate resilience into municipal planning processes.

Necessary Action: The Puerto Rico Department of Natural and Environmental Resources, Permits Management Office, Environmental Quality Board, and Puerto Rico Planning Board must develop a memorandum of understanding or other appropriate mechanism to improve efficiency and coordination on enforcement, including detailing each agency's role and responsibilities. A draft memorandum of understanding or other mechanism must be submitted to the NOAA Office for Coastal Management by December 31, 2016 and a final signed memorandum of understanding or other mechanism must be submitted by June 30, 2017.

Necessary Action: The Puerto Rico Coastal Management Program must immediately ensure that it is meeting all cooperative agreement conditions, including ensuring that public access ways acquired, public access improvements constructed, and documents produced with federal Coastal Zone Management Program funds include the NOAA logo.

Recommendation: The NOAA Office for Coastal Management recommends the Permits Management Office and Puerto Rico Planning Board, in collaboration with the Department of Natural Resources, pursue enhancement of their permitting systems to provide timely access to permit information for permittees, enforcement officers, and members of the public. The information provided to the public should include clear rationales for permit decisions.

Recommendation: The NOAA Office for Coastal Management recommends that the Puerto Rico Department of Natural and Environmental Resources continue to pursue implementation of the findings in the report, "Evaluation and Analysis of the DNER Ranger Corps Including Strategic Plan for DNER Ranger Corps 2015-2020." In particular, the office encourages the Department of Natural and Environmental Resources to track all complaints and their resolution in a technology-based system and analyze the data to understand what the issues are and to develop and implement appropriate solutions. In addition, the tracking system should be enhanced to enable the public to determine whether any complaint made by phone, in person, or on the website was logged and the resolution of the complaint. The office also recommends development of joint training or cross-training between the enforcement staffs of relevant networked agencies, as well as between the department's regions.

Recommendation: The NOAA Office for Coastal Management encourages the Puerto Rico Coastal Management Program and the networked agencies of the commonwealth's coastal management program in their efforts to incorporate climate change into existing planning processes such as the statewide land use plan, municipal plans, and hazard mitigation plans; develop new proposals for legislative changes, regulations, and guidance to build climate resilience; and pursue increased use of green infrastructure where appropriate.

Recommendation: The NOAA Office for Coastal Management recommends that the Department of Natural and Environmental Resources and all relevant commonwealth agencies improve enforcement of public access requirements for development projects, including the removal of perceived barriers, and identify and make available to the public all public access and rights-of-way, including those designated as part of the permitting process. The agencies are encouraged to pursue methods of providing the public with easy access to information on all known public rights-of-way to the coast and coastal sites, such as a public web-based mapping system. The Department of Natural and Environmental Resources should ensure that rangers are trained and knowledgeable about addressing complaints regarding public access.

This evaluation concludes that the Puerto Rico Department of Natural and Environmental Resources is successfully implementing and enforcing its federally approved coastal management

program, adhering to the terms of the federal financial assistance awards, and addressing coastal management needs identified in section 303(2)(A) through (K) of the CZMA.

Program Review Procedures

The National Oceanic and Atmospheric Administration (NOAA) evaluated the Puerto Rico Coastal Management Program in fiscal year 2015. The evaluation team consisted of Carrie Hall, evaluation team lead, NOAA Office for Coastal Management; Susie Holst, evaluator, NOAA Office for Coastal Management; Bill O’Beirne, Southeast and Caribbean region lead, Office for Coastal Management; and Doug Huggett, major permits and federal consistency manager, North Carolina Coastal Management Program; and was supported by Dr. Antares Ramos of the Office for Coastal Management. The support of the coastal management program staff was crucial in conducting the evaluation, and their support is most gratefully acknowledged.

NOAA sent a notification of the scheduled evaluation to the secretary of the Puerto Rico Department of Natural and Environmental Resources (DNER), published a notice of “Intent to Evaluate” in the *Federal Register* on April 16, 2015, and again on July 16, 2015, and notified members of Puerto Rico’s congressional delegation. The coastal management program posted a notice of the public meeting and opportunity to comment in *El Nuevo Día* on April 27, 2015, and *El Vocero de Puerto Rico* on July 14, 2015.

The evaluation process included a review of relevant documents, a survey of stakeholders, the selection of three target areas, and discussions with staff members and stakeholders about the target areas. In addition, two public meetings were held: Wednesday, May 13, 2015, at 5:00 p.m. and Wednesday, September 2, 2015, at 5:00 p.m. The meetings were held at the Environmental Agencies Building, PR-8838 Km. 6.3, El Cinco, Rio Piedras, San Juan, Puerto Rico, to provide an opportunity for members of the public to express their opinions about the implementation of the program. Stakeholders and members of the public were also given two opportunities to provide written comments. A summary of the written comments received and the NOAA Office for Coastal Management’s responses are included in Appendix A. NOAA then developed draft evaluation findings, which were provided to the coastal management program for review, and the program’s comments were considered in drafting the final evaluation findings.

Final evaluation findings for all coastal management programs highlight the programs’ accomplishments in the target areas and include recommendations, which are of two types.

Necessary Actions address programmatic requirements of implementing regulations of the Coastal Zone Management Act (CZMA) and of the state coastal management program approved by NOAA. These must be carried out by the date specified. Failure to address necessary actions may result in a future finding of non-adherence and the invoking of interim sanctions, as specified in CZMA §312(c).

Recommendations are actions that the office believes would improve the program, but which are not mandatory. The state is expected to have considered the recommendations by the time of the next evaluation or dates specified.

Evaluation Findings

Changes in Coastal Program Implementation

Overview

During the evaluation period, the Puerto Rican economy was severely impacted by the Great Recession of 2007, and construction levels have continued to remain low. The government has pursued streamlining permitting to boost construction and the economy.

Since the approval of the Puerto Rico Coastal Zone Management Program in 1978, statutory and regulatory changes have been made to the organizational structure of the land use agencies that make up the coastal program, the land use authority of local governments, and permit review process. These changes are in force and being implemented as laws of the commonwealth pursuant to the Puerto Rico Permit Process Reform Act of 2009 (Law 161), as amended by Law 151 of 2013, and pursuant to the Autonomous Municipalities Act of 1991 (Law 81). To demonstrate that the program continues to meet the requirements for program approval established under the Coastal Zone Management Act and its implementing regulations, the Department of Natural and Environmental Resources has submitted these changes to NOAA for approval. The commonwealth is to be commended for its program change submission, which required a substantial effort over several years.

The Office for Coastal Management has determined that the changes made to the laws that comprise the Puerto Rico Coastal Management Program are substantial and subject to review as a program amendment. A public hearing was held on the program amendment on September 2, 2015, at which numerous concerns were raised about the land use decision-making process in Puerto Rico and the lack of a Spanish language version of the program change submission. On October 22, 2015, a *Federal Register* notice was published announcing the availability of a Spanish language version of the program change submission and a 30-day extension of the opportunity to submit comments on the submission (80 Fed. Reg. 63957 (Oct. 22, 2015)).

At the time of finalization of this evaluation, the program change review was still ongoing. In its review of the changes to the laws that comprise the Puerto Rico Coastal Management Program, the NOAA Office for Coastal Management may consider the implementation of those changes in determining whether the authority of the program continues to be adequate to carry out the purposes of the Coastal Zone Management Act.

Land Use Planning

The Puerto Rico Planning Board continues to be the agency responsible for land use determinations. The 1978 Program Document for the Puerto Rico Coastal Management Program anticipated that a land use plan would soon be in place for Puerto Rico. In November 2015, Puerto Rico adopted a land use plan for the island. A good land use plan can provide valuable guidance to citizens and developers on island-wide priorities and direct development to

appropriate areas, while protecting natural resources and directing development away from high hazard areas, saving both lives and property.

The planning board has developed an ArcGIS server with data layers that are accessible to the public and anticipates expanding this platform. The new mapping capabilities should prove valuable in successfully implementing the island-wide land use plan.

Federal Consistency

Generally, federal consistency requires that federal actions, within and outside the coastal zone, that have reasonably foreseeable effects on any coastal use (land or water) or natural resource of the coastal zone be consistent with the enforceable policies of a state's federally approved coastal management program. Federal actions include federal agency activities, federal license or permit activities, and federal financial assistance activities. Federal agency activities must be consistent to the maximum extent practicable with the enforceable policies of a state coastal management program, and license and permit and financial assistance activities must be fully consistent.

In Puerto Rico, Coastal Zone Management Act federal consistency reviews are administered by the Puerto Rico Planning Board. The federal consistency officer sits with the planning board and manages the administration of federal consistency. The position is funded through federal Coastal Zone Management Act funds. The federal consistency officer participates in interagency pre-application meetings, which are held at an applicant's request. The federal consistency officer is also coordinating an effort to move towards an electronic-based processing system. At the time of the site visit, the implementation of federal consistency and coordination between the coastal program and planning board appeared to be working well.

Enforcement and Permitting

The evaluation team met with staff members from the Permits Management Office, Environmental Quality Board, and Department of Natural and Environmental Resources to discuss enforcement activities. Commonwealth staff members discussed that in the past few years they had improved coordination and begun to work more closely together and would now go out on site visits together to address issues that crossed multiple jurisdictions. In addition, they would alert each other to issues spotted on the ground. A staff member from the Permits Management Office noted that they had a much smaller enforcement staff than the Department of Natural and Environmental Resource Rangers (about 40 versus 400) and benefited from the assistance. Stakeholders and commonwealth staff members stated that they had seen improvements and that noncompliant development had decreased since the agencies began working together more closely. Commonwealth staff members agreed that it could be beneficial to do more cross-training so that enforcement staff members from each agency could spot issues relating to each other's jurisdiction. They also noted further opportunities for training on the new permitting systems. The NOAA Office for Coastal Management encourages the Department of Natural and Environmental Resources and coastal program to work with the Jobos Bay National

Estuarine Research Reserve Coastal Training Program or other providers to develop permit-related training programs for enforcement personnel specific to their needs.

Department staff members discussed that they are currently focusing on increasing educational efforts in communities with sensitive resources and that they have already seen examples of improvements. Community outreach and engagement is another area where Jobos Bay Reserve Coastal Training Program could help provide additional support and training.

Previous evaluation findings have noted issues with squatters building homes on public lands that are environmentally sensitive. The commonwealth has successfully pursued moving squatters to more appropriate places in several cases, and the courts have supported these actions. Illegal development on public lands, including the maritime terrestrial zone, continues to be an issue that the department faces.

Stakeholders raised several issues with enforcement with regard to implementing the coastal program. One issue raised is that project applicants were required to have a sign posted with the case number within two days of a permit application submission but that it was unclear to the public and enforcement staff when a permit was approved and construction could legally begin. Some members of the public and enforcement officers interpreted the signs as the applicants having approval to begin construction. Members of the public noted that in some cases development began after signs were posted but before permits were issued. The NOAA Office for Coastal Management recommends that the Permits Management Office, Puerto Rico Planning Board, and Department of Natural and Environmental Resources work together to design a system where the public and enforcement officers can easily determine if a construction project has received its proper permits. Ideally, this information would be posted at the development site and would be available on a website for members of the public and law enforcement in the field.

A second issue noted by a number of stakeholders and members of the public was the variation in enforcement effort by region and that in some regions complaints were ignored and not investigated. It was the opinion of some stakeholders that strong community ties could make it harder to enforce regulations. An evaluation of the Ranger Program "Evaluation and Analysis of the DNER Ranger Corps Including Strategic Plan for DNER Ranger Corps 2015-2020," funded by the NOAA Coral Reef Conservation Program, found that violations identified by the rangers were not always prosecuted or followed up on in a timely manner by the legal staff at headquarters. This lack of legal follow-up led to rangers being less inclined to pursue cases in the field. Another stakeholder noted the importance of educating the judiciary on the importance and benefits of protecting natural resources and enforcing permit processes and conditions. The NOAA Office for Coastal Management encourages the Department of Natural and Environmental Resources to develop a process and web-based database to track complaints and record how the complaints were resolved, and analyze the data to better understand issues and more effectively implement solutions. The department has recently completed the development of a new web portal whose publishing platform enables the development of a complaint and resolutions tracking system. The department should also look to make the database open and available to the public. As an example, Montgomery County, Maryland's website, eProperty Data Mining

(www6.montgomerycountymd.gov/apps/DHCA/pdm_online/pdmfull.asp), allows the public to search for information on a property, including permits and their status and code enforcement complaints and follow-up. The report “Evaluation and Analysis of the DNER Ranger Corps Including Strategic Plan for DNER Ranger Corps 2015-2020” outlines a number of other key opportunities for strengthening the effectiveness of the Ranger Corps and boosting morale. The department has begun to implement the findings and the NOAA Office for Coastal Management encourages Department of Natural and Environmental Resources to continue to pursue implementation of the recommendations provided in the report.

Stakeholders also identified inconsistencies and potential fraudulent documents in autonomous municipality permit files. Stakeholders noted that gaining information about permits could be challenging and time consuming. In another case, stakeholders stated that the location of species listed as federally threatened were ignored when determining if an environmental impact statement should be completed. The NOAA Office for Coastal Management is concerned that some projects may be gaining approval without meeting existing requirements. The Department of Natural and Environmental Resources, The Permits Management Office, and Puerto Rico Planning Board all have online permitting systems that provide the general public access to information on permits issued by the agencies. The NOAA Office for Coastal Management encourages the relevant coastal program agencies to further build on these systems to make accessible, in a timely manner, information regarding land use planning and permit applications and approvals so that the public can follow a permit application through the approval process and understand the reasons behind land use planning, permitting, and environmental review decisions. In addition, the NOAA Office for Coastal Management encourages the Land Use Planning Board in the exercise of its oversight authority.

The Department of Natural and Environmental Resources, Permits Management Office, Environmental Quality Board, and Puerto Rico Planning Board all play key roles in implementing the federally approved Puerto Rico Coastal Management Program. The NOAA Office for Coastal Management encourages the agencies to develop and pursue memorandums of understanding that further detail how the agencies can work together on permitting, enforcement, and land use planning to more efficiently and effectively manage the coastal zone and use technology to streamline permitting and land use planning, and to inform the public.

Maritime Terrestrial Zone Delineation

During the evaluation period, the coastal program successfully worked to address a necessary action in the 2006 evaluation findings that called for an official delineation of the maritime zone. In Puerto Rico, the Department of Natural and Environmental Resources is responsible for the administration of the coastal public trust lands (maritime-terrestrial public domain). The maritime terrestrial zone includes the territorial waters extending nine nautical miles offshore, the submerged lands beneath them, and an inland component defined by the highest tide—in tidally sensitive areas—and storm waves—in non-tidally sensitive areas. The administration of the maritime-terrestrial public domain is guided by Regulation 4860 (1992, as amended). This

regulation was developed by the Puerto Rico Coastal Management Program and establishes conditions as to how coastal-dependent uses may be developed.

The maritime terrestrial zone derives from the Old Spanish Ports Law of 1880, extensive to Puerto Rico in 1886. The definition of the maritime terrestrial zone was further defined in the Puerto Rico Dock and Harbor Act of 1968. The law is based on Spain's coasts, one more influenced by waves, the other tides. A recent court case has also influenced the legal interpretation of the maritime zone. In 2009, the Puerto Rico Supreme Court ruled that waves plus tidal height could not be used in determining the maritime terrestrial zone.

The department's Land Surveying Division routinely evaluates coastal development projects involving maritime terrestrial zone delineations. Most private coastal development projects require a 60-foot public use easement parallel and adjacent to the Puerto Rico maritime terrestrial zone boundary. Currently, the delineation process is typically initiated by the Land Surveying Division providing developers with instructions to conduct the maritime terrestrial zone delineation per the applicable law and regulations. The developer is also advised as to how to obtain the department's official certification of the maritime terrestrial zone boundary.

To address the necessary action and be able to provide a more definitive reference line for the maritime terrestrial zone, the coastal program supported the development of vertical datums and control. The coastal program worked with all the department's professional land surveys and private sector experts in an open process to develop the official reference system for the maritime terrestrial zone delineation and then drafted revised regulations.

The evaluation team heard from stakeholders that they appreciated the collaborative and transparent process and that the approach taken was technically very sound. Stakeholders perceived that the proposed regulations and reference system were an enormous step forward in reducing uncertainty in the location of the reference line. Under the new system, individual surveys will still need to be completed for projects. Stakeholders from the development community were hopeful that the new reference line would reduce the time needed for obtaining a permit, with current times cited as being between three months to two years.

Stakeholders also commented that the law was based on the condition of Spain's coast and might not be the most appropriate for Puerto Rico, and that the law should be revisited. A stakeholder also noted that the maritime terrestrial line is used by other agencies for their regulations, increasing its importance. It was also noted that the law does not speak directly to dunes, and the department's treatment of dunes may be challenged in court.

The official reference system to be used for determining the maritime terrestrial zone, following legal, regulatory, and jurisprudence references, was completed in late 2013. A visualization tool is available online at www.arcgis.com/home/item.html?id=8f7328c105814206a523fb4a45ab4952. The adoption of the reference system will be official once the department completes the amendment of Regulation 4860, which also requires a series of island-wide public hearings, which

have been completed. Once formally approved by the commonwealth, the changes should be submitted to NOAA as a program change.

Communication

The evaluation team heard from a number of stakeholders about their desire for more information on coastal management program activities, including the tracking of conditions and the current state of the coastal zone and the importance of communicating coastal hazard and climate change information. At the time of the site visit, the department was engaged in revamping its website to provide more easily accessible information and in using social media to provide additional information to citizens. The coastal program has made significant strides in providing more information online; for example, ArcGIS applications for the maritime zone reference system and a sea level rise mapping application are now available to the public, and the Puerto Rico Climate Council website provides extensive information on climate change. In addition, several guides to major public access sites around the island are available. The NOAA Office for Coastal Management encourages the coastal program to prioritize communication needs and work with partners to address them, where appropriate. In particular, increased communication would be especially beneficial for resolving problems pertaining to climate change and coastal hazards, enforcement and permit management, and public access.

Accomplishment: The Puerto Rico Coastal Management Program significantly improved the process for delineating the maritime terrestrial zone by working with partners in an open and collaborative process to develop a technically sound official reference system. The department is currently pursuing revisions to Regulation 4860 to incorporate the official reference system into maritime terrestrial zone program administration.

Necessary Action: The Puerto Rico Department of Natural and Environmental Resources, Permits Management Office, Environmental Quality Board, and Puerto Rico Planning Board must develop a memorandum of understanding or other appropriate mechanism to improve efficiency and coordination on enforcement, including detailing each agency's role and responsibilities. A draft memorandum of understanding or other mechanism must be submitted to the NOAA Office for Coastal Management by December 31, 2016 and a final signed memorandum of understanding or other mechanism must be submitted by June 30, 2017.

Recommendation: The NOAA Office for Coastal Management recommends the Permits Management Office and Puerto Rico Planning Board, in collaboration with the Department of Natural Resources, pursue enhancement of their permitting systems to provide timely access to permit information for permittees, enforcement officers, and members of the public. The information provided to the public should include clear rationales for permit decisions.

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Natural and Environmental Resources to track all complaints and their resolution in a technology-based system and analyze the data to understand what the issues are and to develop and implement appropriate solutions. In addition, the tracking system should be enhanced to enable the public to determine whether any complaint made by phone, in person, or on the website was logged and the resolution of the complaint. The office also recommends development of joint training or cross-training between the enforcement staffs of relevant networked agencies, as well as between the department's regions.

Climate Adaptation and Resilience

The Puerto Rico Coastal Management Program is playing a pivotal role in inspiring and furthering the commonwealth's efforts to address climate change and has brought together government officials, scientists, and stakeholders to better understand the local impacts of climate change and build coastal resilience. The coastal program built upon an initial effort by the University of Puerto Rico and Puerto Rico Sea Grant. That earlier effort brought scientists together in 2007 and 2009 to share the current state of knowledge on climate science and potential impacts. The scientists gained media and political attention with a "Climate Change Declaration to the Government and Citizens of Puerto Rico," signed by 174 members of the scientific and academic community.

To keep the momentum of the first two meetings going, the coastal program reached out to partners to discuss options for how to move forward to address climate change. This resulted in the creation of the Puerto Rico Climate Change Council, which now has over 140 members. The coastal program applied for and was successful in obtaining a NOAA Coastal Management Fellow from 2010-2012 to help build and coordinate the council's work.

In 2010, the Puerto Rico Climate Change Council convened experts from the scientific and academic community, and the media, to share the current state of climate science and foster a dialogue between the media and scientists. The council created four work groups focused on geophysical and chemical knowledge, ecology and biodiversity, society and economy, and communicating climate change and coastal hazards. Council members contributed their expertise and time to develop and publish *Puerto Rico's State of the Climate Report 2010-2013*, the first island-wide vulnerability assessment to climate change. The document synthesizes all current and available knowledge on climate science and climate change effects on the ecology and biodiversity, and society and economy, of the commonwealth. The report also identifies research needs, some of which are now being filled by the coastal program and a wide variety of partner institutions from academia, nongovernmental organizations, and federal programs. The report was a call to action and received both media and political attention resulting in the governor issuing five executive orders in early 2013.

- Executive Order OE-2013-015 calls for the completion and adoption of the commonwealth's Land Use Plan, as it will be the planning document that supports achieving sustainable development.

- Executive Order OE-2013-016 calls for bringing 18 commonwealth agencies together to conduct a vulnerability study of public infrastructure to climate change and the adoption of adaptation plans to address the vulnerabilities based on the findings of the council.
- Executive Order OE-2013-017 calls for the creation of an Action Council for the sustainability of Puerto Rico.
- Executive Order OE-2013-018 calls for the quantification of emissions of greenhouse gases and a plan to reach the goal of carbon neutrality.
- Executive Order OE-2013-019 calls for the Department of Natural and Environmental Resources to make the maritime zone boundary and acknowledges the impact of erosion and climate change and need for appropriate development in the coastal zone.

In addition to bringing political and media attention to the issue of climate change, the work of the council led to a number of other successes. The Tourism Company adopted a climate change policy and pursued legislation to adopt a tourist tax to help fund adaptation activities. Stakeholders noted that the identification of the information needs, including those of municipal agencies, is currently being used by the Landscape Conservation Cooperative, U.S. Geological Survey, and others to direct resources towards addressing identified gaps and obtaining downscaled data. Through discussions with the Caribbean Regional Association for Coastal Ocean Observing, new tide gauges have been installed or are planned for the future and important sea level rise trends calculated using data from the preexisting gauges. The National Estuary Program is already using the reports to inform the implementation of its management plan. The information provided in the assessment and the improved data being collected and analyzed as a result of this effort informs, and will continue to inform, the commonwealth's ability to adapt to climate change.

The coastal program and numerous partners have supported the development of tools to communicate risk and improve decision-making. The Puerto Rico Coastal Vulnerability Viewer allows anyone to visualize projected sea level rise in Puerto Rico through the council's data portal at www.pr-ccc.org. The coastal program funded a study, *Coastal Habitats and Geomorphic Features Inventory (2013)*, to assess the role of coastal geomorphic features, such as sand dunes, in protecting coastal communities from coastal inundation. The coastal program provided partial funding to a project conducted by the Caribbean Regional Association and University of Puerto Rico to model storm surge projections and potential impacts on coastal areas using different hurricane categories to identify areas potentially vulnerable to storm surges and coastal floods. The coastal program's studies that supported the maritime terrestrial zone delineation also support informed decision-making to improve coastal resilience.

The coastal program has also supported outreach and training. In 2009, the coastal program and Puerto Rico Sea Grant supported a public perception survey of climate change and coastal hazards for eight coastal municipalities on the west coast. The study found that a substantial majority of respondents perceive threats like storm surge flooding, sea level rise, and global warming to be a real risk to themselves and their homes. This information was used to raise the awareness of the public and decision makers about coastal hazards.

Through the council, the coastal program also strengthened its partnerships with other agencies such as the Caribbean Coastal Ocean Observing System, Caribbean Tsunami Center, Puerto Rico Coastal Hazards Center, and the Puerto Rico Seismic Network. Based on the council's work, Puerto Rico (represented by the Department of Natural and Environmental Resources secretary) was invited by France to do a workshop and talk about the process at the Conference of Parties (COP) 21 in 2015.

The coastal program is currently looking to develop increased support for local municipalities and their efforts to address coastal hazards and improve climate resilience. The coastal program is supporting three ongoing pilot projects to assist three municipalities in the development of municipal adaptation plans and building coastal resilience. Each adaptation planning project is being approached differently by its assigned contractors. The coastal program will analyze the success of each approach and use this information to develop adaptation guidance for local municipalities and identify successful planning options. As part of its Section 309 2016-2020 coastal hazards strategy, the coastal program will develop a report with guidance on a variety of adaptation options at different scales: commonwealth, municipal, and community. The report will provide guidance on how to consider and plan for impacts from climate change in capital investment projects, new developments, natural protected areas, hazard mitigation plans, post-disaster redevelopment plans, and overall land use planning.

The City of San Juan is currently conducting a comprehensive review of its territorial plan, and a representative of the city's planning office cited the council's report as very helpful in writing a new chapter that addresses climate change. The representative noted that the coastal program had also provided assistance such as providing information to educate the community and information on flooding. The information had not only been helpful in informing public policy, but it was also helpful in seeking federal funds and other grant opportunities.

EXAMPLE: City Of San Juan

The City of San Juan was selected to be one of the world's 100+ Resilient Cities. The 100 Resilient Cities project is a Rockefeller Foundation initiative to support cities that have demonstrated a dedicated commitment to building their own capacities to prepare for, withstand, and bounce back rapidly from shocks and stresses. The foundation provides support to hire a chief resilience officer and provides support for the development of a resilience plan, and access to a platform of services to support the implementation of the plan. The coastal program and the council's work were cited as important to the success of the city's application.

Identified Needs and Future Activities

The stakeholders that the evaluation team met with identified many needs and opportunities to better prepare for climate change. The coastal program has also identified key needs in its 309 Assessment and Strategies for 2016-2020 and successfully applied for a NOAA coastal fellow for 2016-2018 to assist with implementation of its climate change priorities. Stakeholders noted that Puerto Rico currently has completed very few ecosystem-based adaptation projects to address erosion or stormwater issues and that more research on the effectiveness of these techniques

and the economics is needed. The coastal program will be implementing a 309 coastal wetlands strategy to analyze the potential of ecosystem-based adaptation methods. Ecosystem adaptation is defined as “preserving, enhancing and restoring natural systems like wetlands that provide critical protection from the elements, or that provide food, water or work opportunities.” The coastal program also plans to identify potential enhancements of existing laws and regulations and develop policies and guidelines to support prioritizing natural infrastructure over structural engineering solutions.

Outreach and education was identified as a priority, including reaching community groups and new residents who weren’t familiar with the hazards of living on the coast. The coastal program has worked with GEOambiente del Caribe Inc. to develop two episodes on climate change that were aired during prime time by the Public Broadcasting System. The Puerto Rico Climate Change Council has a Communicating Climate Change and Coastal Hazards working group. The NOAA Office for Coastal Management encourages the coastal program to continue to support efforts of the council and its partners to provide information to community groups and the public. Another issue raised was ensuring that new tools, lessons learned, guidance, and other information were adopted and used. Partners such as the Jobos Bay Reserve Coastal Training Program, Puerto Rico Sea Grant, and universities may be able to assist with outreach and training so that climate tools and information can be used and incorporated into existing activities. The NOAA Office for Coastal Management encourages the development of outreach strategies for new tools and guidance that lay out a plan of action to encourage wide adoption. The NOAA Office for Coastal Management has a template for outreach strategies that may be helpful.

Stakeholders also emphasized the need to incorporate climate adaptation and coastal hazards into other planning efforts, including the land use plan for the island of Puerto Rico (currently a draft), requiring that autonomous municipality plans address climate adaptation and mitigation, and have hazard mitigation plans. There are also opportunities for the Puerto Rico Planning Board and Department of Natural and Environmental Resources to work more closely with federal agencies such as the Federal Emergency Management Agency and encourage communities to participate in the National Flood Insurance Community Rating System. The need for technical assistance was also noted. The coastal program’s coastal hazards strategy for 2016-2020 will be focusing on incorporating climate change into existing laws, regulations, plans, and guidance.

Accomplishment: The Puerto Rico Coastal Management Program is a leader in bringing organizations and people together through the Puerto Rico Climate Change Council to address climate change. The council has conducted an island-wide vulnerability assessment that resulted in several executive orders to further plan for climate adaptation and mitigation. The coastal program is also successfully supporting the incorporation of climate resilience into municipal planning processes.

Recommendation: The NOAA Office for Coastal Management encourages the Puerto Rico Coastal Management Program and the networked agencies of the commonwealth’s coastal management program in their efforts to incorporate climate change into existing planning processes such as the statewide land use plan, municipal plans, and hazard mitigation plans; develop new proposals

for legislative changes, regulations, and guidance to build climate resilience; and pursue increased use of green infrastructure where appropriate.

Public Access

Interagency Beach Board

In 2013, the coastal program was designated as the executive secretariat of the Puerto Rico Interagency Beach Management Board and the department director serves as executive director of the board. The board was created in 1999 to foster integrated and sustainable management of Puerto Rico's beaches and has both public- and private-sector representatives who work to promote conservation, protection, aquatic safety, and sustainable use of beach resources. Board members include the Department of Natural and Environmental Resources, Puerto Rico Planning Board, Environmental Quality Board, Tourism Board, Sports and Recreation Department, National Parks Company, Puerto Rico Police Department, Municipal Affairs Commissioner, Puerto Rico Hotel and Tourism Association, and Scuba Dogs Society. By serving as the executive secretariat, the coastal program is able to provide for continuity of resources in advancing the board's goals and addressing the board's legal mandates.

The coastal program supported the development of the *Puerto Rico Coastal Access Master Plan (2014)*, which provides information on existing public access, potential beach access sites, and beach access needs such as parking and signage. A second report, *A Strategic Plan for Conservation and Maintenance of the Beaches of Puerto Rico (2014)*, focuses on the issue of solid waste and discusses the legal framework, the numerous organizations involved and their existing activities and collaborations, and the results of a survey of public perceptions and observed behavior. Based on this information, the report lays out a series of strategies and actions for the conservation and maintenance of public beaches. The reports serve as guidance for the coastal program, Interagency Beach Board, and others engaged in managing public access sites. The NOAA Office of Coastal Management encourages the Puerto Rico Coastal Management Program to provide additional information on the Interagency Beach Board's work online, such as the coastal access master plan and strategic plan for conservation and maintenance of beaches.

In March 2015, the board, with support from coastal program staff members, convened the first Municipal Encounter for the 44 coastal municipalities. The 44 coastal municipalities and central government agencies identified the most important problems concerning beach access and worked to develop combined strategies to address the problems. The respondents identified the most important problems as (1) beach erosion and (2) solid waste management. Other problems identified included aquatic safety and public access and access signage.

With the support of the coastal program, the board has been conducting public outreach campaigns to reduce solid waste and marine debris at beaches. Some of the programs are long-standing, such as the annual coastal cleanup and "Adopt a Beach Program," and others are newer, such as the "Zero Waste Beaches." The NOAA Office for Coastal Management encourages the coastal program to continue to work with its partners to build on the coastal program's work

identifying the current state of, and issues and potential solutions concerning, public access—and to implement solutions, including working with the NOAA Marine Debris Program and other partners to address marine debris issues.

The board has also been working on amending its authorizing legislation to integrate emergency managers and the academic and community sectors as permanent members. This will allow the board to better address beach safety and other issues.

The evaluation team heard from several stakeholders who stressed the importance of improving public safety. Very few beaches in Puerto Rico have lifeguards, and beaches on the north coast are subject to strong rip currents. Puerto Rico has about 30 drowning deaths a year. The board is investigating starting a flag system to warn beachgoers of dangerous conditions. At the time of the site visit, Sea Grant and the Caribbean Integrated Ocean Observing System (CariCOOS) had developed a warning app for smart phones that was in the testing phase. The NOAA Office for Coastal Management encourages the coastal program to work through the Interagency Beach Board and with partners to improve public safety. Other coastal programs that have conducted research and implemented education programs and flag systems, such as Michigan and Florida, may also be a source of information.

The coastal program has also brought in technical and scientific experts to support the board. The coastal program helped fund a beach inventory completed by the University of Puerto Rico Graduate School of Planning, and a shoreline change study is currently underway to identify areas of erosion and potential causes, including the use of CariCOOS buoy data to identify weather patterns causing erosion, and make recommendations for beach management. These reports also support efforts to understand climate impacts to the coast.

The Public's Access to the Coast

In Puerto Rico, the beaches have been considered public domain since Spain enacted the “1886 Law of Ports for the Island of Puerto Rico.” The Puerto Rico Planning Board adopted the zoning regulation for the “Coastal Zone and Access to Beaches and Coasts in Puerto Rico” that requires the provision of coast and beach access from new projects developed in the maritime terrestrial zone. Access can either be through the project or bordering the project and must include signage. To provide the public with information on coastal public access, the coastal program developed a series of Beach Access Guide brochures in 2007, with information on 52 public beaches that have infrastructure for visitors. The guides are posted on the department’s website. In addition, the coastal program has purchased and installed signage for multiple nature reserves to support effective management and public access.

The evaluation team heard concerns from members of the public regarding the “privatization” of public beaches and that illegal closures of public beaches were occurring, particularly in gated communities. The Permits Management Office is responsible for the implementation of the Joint Permit Regulations provisions requiring public access to new projects, but developers or owners may later try to restrict access. The Permits Management Office, municipal governments, and the

Puerto Rico Department of Transportation and Public Works all have roles in ensuring that public access is free of obstruction. Recently, the courts upheld the right of public access in a gated community, because the roads and sidewalks were funded with public dollars.

The tracking and mapping of existing public access ways to the coast could be of great benefit in ensuring they are maintained and do not disappear. Such a system could make it clear where public access existed. A number of state coastal programs, including North Carolina (ncdenr.maps.arcgis.com/apps/webappviewer/index.html?id=0ce9cc86d3d94b9db9f4bb0ec50b6f81), have developed web- and mobile browser-based mapping tools, and they could be contacted for more information. The Department of Natural and Environmental Resources and Permits Management Office could develop a system to ensure that public access ways identified and approved as part of permit applications were recorded and included in a publically available public access mapping tool. It could also be beneficial to identify what organization is responsible for maintaining the public access site.

The Department of Natural and Environmental Resources Rangers are very visible within the community and may be the first enforcement officers contacted when there are public access issues. The department is encouraged to ensure that rangers are trained and knowledgeable regarding public access issues and can direct complaints to the proper authority if complaints are outside their purview.

The previous evaluation findings in 2006 also found that the public and stakeholders were concerned with the privatization of public beaches, and the coastal program was strongly encouraged to work with all relevant commonwealth agencies and autonomous municipalities to improve enforcement of public access requirements for development projects, including the removal of perceived barriers to access. The NOAA Office for Coastal Management continues to encourage the Department of Natural and Environmental Resources and all relevant agencies to improve enforcement of public access requirements for development projects, including the removal of perceived barriers, and to identify and make available to the public all public access ways, including those identified through the permitting process. The recently strengthened Puerto Rico Interagency Beach Management Board is also a great resource for developing partnerships to ensure safe public access to beaches.

Building Community Support

The evaluation team heard from a number of stakeholders and members of the public about the importance of engaging the public in protecting coastal resources and public access. One researcher worked with local students to conduct experiments to restore coastal dunes. The students tested dune fencing's ability to capture sand and rebuild the dunes and with the support of the coastal program and U.S. Fish and Wildlife Service built a dune walkover to provide public access while protecting the dunes. The dunes face a number of threats, including the use of all-terrain vehicles, sand mining, illegal dumping, and iguanas. Through efforts to work with students and educate and engage the community, community members now call rangers when they spot illegal activities. The researcher noted that rangers are now more supportive in addressing issues

and local judges are becoming more informed regarding the issues. Engaging the community has also led to a large drop in illegal dumping, and camping and hunting have dramatically declined.

The department has also established multiple co-management agreements with local communities and non-governmental organizations that engage communities and citizens in managing natural areas. The coastal program director also serves on the steering committee of the Caribbean Landscape Conservation Cooperative. The cooperative established the first three Conservation Action teams (Cays and Islets, Protected Areas, and Dunes Protection, Restoration, and Stabilization) in 2015 to foster effective coordination between stakeholders and government agencies to ensure land and seascapes conservation.

Enhanced Coastal Access for Disabled Persons

The coastal program worked with the Punta Tuna Nature Reserve community group to provide the first public access trail that provides access for disabled persons. The initiative is meant to serve as a model for other natural reserves that have expressed interest in developing similar trails to provide access to a broader range of people.

The hiking trails feature Quick Response (QR) codes—a type of smartphone-scannable barcode to assist persons with disabilities—where people can listen to information about the reserve. The hiking trails in the Punta Tuna Nature Reserve were also built to prevent blind people from entering areas that are off limits to park visitors. The reserve provides recorders and special wheelchairs for people with physical limitations.

The reserve has been co-managed by the community and department since 2008. The evaluation team was able to visit the Punta Tuna Nature Reserve and meet with members of the community and disabled visitors who were visiting the reserve. The evaluation team was very impressed with the enthusiasm of the community and their work to manage, restore, and protect the reserve.

The NOAA Office for Coastal Management commends the coastal program for assisting with a showcase project highlighting methods for providing coastal access for disabled persons and encourages the program to work through the board with other reserves and interested parties to ensure that new beach amenities address the needs of disabled visitors. If needed, the coastal program may wish to pursue the development of a beach accessibility guide, similar to the Texas Beach Accessibility Guide.

Cooperative Agreement Requirements

The cooperative agreements that provide Coastal Zone Management Act funding require that projects completed with NOAA funding display the NOAA logo, including reports and signage for public access improvements. In a number of instances the evaluation team found that signage or documents did not include the required acknowledgment of NOAA funding. Since the time of the site visit, the coastal program has added the NOAA logo to a number of existing public access signs to help address this issue. The NOAA Office for Coastal Management acknowledges that

vandalism is a problem and signs often need to be replaced. When signs are replaced, they should include an acknowledgment of NOAA funding.

The coastal program has funded several public access site enhancement projects over the evaluation period. None of these projects are reflected in the reporting for the Coastal Zone Management Act Performance Measurement System, a program designed at the request of Congress, to track effectiveness of the National Coastal Zone Management Program. The coastal program should ensure that it is capturing all eligible projects when reporting for the Performance Measurement System.

Accomplishments: The Puerto Rico Coastal Management Program is successfully serving as the executive secretariat of the Interagency Beach Management Board, which has allowed the board to expand its efforts to address key public access issues such as solid waste.

Accomplishment: The Puerto Rico Coastal Management Program has successfully completed a first-of-its-kind model project in Puerto Rico providing enhanced public access for disabled persons at Punta Tuna Reserve.

Necessary Action: The Puerto Rico Coastal Management Program must immediately ensure that it is meeting all cooperative agreement conditions, including ensuring that public access ways acquired, public access improvements constructed, and documents produced with federal Coastal Zone Management funds include the NOAA logo.

Recommendation: The NOAA Office for Coastal Management recommends that the Department of Natural and Environmental Resources and all relevant commonwealth agencies improve enforcement of public access requirements for development projects, including the removal of perceived barriers, and identify and make available to the public all public access and rights-of-way, including those designated as part of the permitting process. The agencies are encouraged to pursue methods of providing the public with easy access to information on all known public rights-of-way to the coast and coastal sites, such as a public web-based mapping system. The Department of Natural and Environmental Resources should ensure that rangers are trained and knowledgeable about addressing complaints regarding public access.

Evaluation Metrics

Beginning in 2012, state coastal management programs began tracking their success in addressing three evaluation metrics specific to their programs. The evaluation metrics include a five-year target and provide a quantitative reference for each program about how well it is meeting the goals and objectives it has identified as important to the program.

METRIC 1

Goal: Incorporate sea level rise adaptation strategies into coastal hazard mitigation and land use planning in Puerto Rico.

Objective: Enforce the implementation of adaptation strategies in the local government’s comprehensive plans, mitigation strategies, post-disaster redevelopment plans, economic development strategies, or land development regulations.

Strategy: In Puerto Rico, the projected sea level rise impacts threaten to exacerbate the vulnerability of coastal resources and communities. In response to this situation, the Puerto Rico Coastal Zone Management Program led an effort to collect important data and information to support modeling efforts used in the determination of coastal vulnerability assessments for coastal communities, critical infrastructure, and biodiversity. Based on the vulnerability assessments developed under Section 309 Coastal Hazards Strategy Process (2011-2015), the coastal program has initiated the preparation of guidance and adaptation strategies to build resilience into coastal management and formulate adaptation strategies. The guidelines will be completed in one year. Local governments’ adaptation plans will be developed using the guidelines adopted by the Puerto Rico Coastal Zone Management Program. To complement this effort, the coastal program will develop additional enforceable policies, regulations, and guidelines to be presented for adoption by relevant commonwealth agencies to support administrative decisions in response to heightened threats to shorefront communities or resources from sea level rise and changing climate patterns.

Performance Measure: Between 2012 and 2017 the number of local governments within the coastal zone that incorporate adaptation strategies in their local comprehensive plans, mitigation strategies, post-disaster redevelopment plans, economic development strategies, or land development regulations.

Target: Between 2012 and 2017, eight local governments within the coastal zone incorporate adaptation strategies in their local comprehensive plans, mitigation strategies, post-disaster redevelopment plans, economic development strategies, or land development regulations.

Cumulative Results: 0

Discussion: The coastal program has laid the groundwork for achieving this target. The coastal program has supported the work of the Puerto Rico Climate Change Council and the development of a vulnerability assessment for the island. For the 2016-2020 Section 309 Assessment and Strategies cycle, the coastal program will continue to build on the work from its previous assessment and strategies. The coastal program met with the 44 coastal municipalities and presented the Storm Surge Atlas and sea level rise projections which were developed in coordination with CariCOOS and the University of Puerto Rico. The information has also been made available on the Puerto Rico Climate Change Council and Caribbean Regional Ocean Partnership websites. The coastal program has also completed a *Guide for Climate Change Adaptation: The Route to Resilience*. The coastal program is well positioned to provide technical support to communities that will be updating their hazard mitigation plans to integrate climate change in response to new Federal Emergency Management Agency regulations. The coastal program believes its target can be met based on the responses of coastal municipalities to the

scientific and technical recommendations provided by the department. While the coastal program has positioned itself well to provide assistance, it can take time to revise and approve plans. The coastal program may be challenged in meeting this target within the five years.

METRIC 2

Goal: Incorporate sea level rise adaptation strategies into coastal hazard mitigation and land use planning in Puerto Rico.

Objective 2: By 2017, achieve the adoption and implementation of at least five community projects to reduce risk of coastal hazards.

Strategy: The Puerto Rico Coastal Zone Management Program will employ a participatory approach to examining both local and climate-related threats to coastal communities and local ecosystems. The Puerto Rico Coastal Zone Management Program will identify future scenarios and evaluate vulnerability and risks for which the selected coastal communities should prepare. In coordination with local governments, the coastal program will examine in detail different coastal hazard and risk scenarios, as well as social and economic costs and benefits associated with different adaptation options. Methods to be used include social benefit-cost analysis, multi-criteria assessment, and other tools to support the evaluation of options. Based on the results of the analyses and consultations with stakeholders, the coastal program will provide recommendations to policy makers for coastal communities' adaptation to reduce risk of coastal hazards by 2017. The Puerto Rico Coastal Zone Management Program will then provide technical assistance to implement the recommendations through completion of community projects. As a point of reference, the coastal zone of Puerto Rico includes portions of 43 municipalities.

Performance Measure: Between 2012 and 2017, the number of projects completed at coastal communities to reduce risks of coastal hazards with the technical assistance of the Puerto Rico Coastal Zone Management Program.

Target: Between 2012 and 2017, five projects completed at coastal communities to reduce risks of coastal hazards with the technical assistance of the Puerto Rico Coastal Zone Management Program.

Cumulative Results: 0

Discussion: The coastal program is currently working on three projects: (1) Culebra Municipality adaptation plan (80% complete), (2) Dorado Municipality (35% complete), and (3) Rincón Municipality (40% complete). The coastal program plans to issue a request for proposals for the Salinas and Loíza/Luquillo adaptation plans in the first quarter of 2016. In addition, the coastal program will continue to provide technical assistance to implement the recommendations through completion of community projects. The coastal program is well position to achieve its target by 2017.

METRIC 3

Goal: Foster sustainable use and management of coastal wetland resources in Puerto Rico.

Objective: By 2017, prioritize the protection, maintenance, and sustainability of coastal wetlands by integrating and promoting the adoption of a Puerto Rico-specific assessment method that includes better land use practices and a coastal habitat (and specifically wetland) valuation for use by regulatory agencies and the regulated community (i.e., landowners, developers and consultants).

Strategy: In addition to their well-known ecological value, wetlands as well as coral reef systems represent essential, low cost means of providing natural low-impact infrastructure to minimize loss of life and property damage from climate change and sea level rise. In Puerto Rico the projected sea level rise impacts threaten to exacerbate the vulnerability of coastal resources and communities. An Interagency Committee, consisting of federal and commonwealth agencies co-lead by the Department of Natural and Environmental Resources through the Puerto Rico Coastal Zone Management Program and the U.S. Army Corps of Engineers, will develop The Puerto Rico Specific Wetland Assessment Condition Method (PR-WAM). In support of land use planning and permit application consultation, project review, and decision-making, the adoption of the PR-WAM will improve the management of coastal wetlands resources and their sustainable use.

Performance Measure: The number of agencies that adopt a Puerto Rico-specific wetlands assessment method to improve the management of coastal wetlands between 2012 and 2017.

Target: Three agencies adopt a Puerto Rico Specific Wetland Assessment Condition Method to improve the management of coastal wetlands between 2012 and 2017.

Cumulative Results: 0

Discussion: The coastal program co-leads the development of a Rapid Wetlands Condition Assessment Method (RAM) in coordination with the U.S. Army Corps of Engineers' Regulatory Section. The U.S. Army Corps of Engineers administers Clean Water Act 404 permits while the Department of Natural and Environmental Resources administers the Puerto Rico Wildlife Law (Law 241). Fifty wetlands of eight different wetland classes were assessed. Twenty-four were selected as reference sites for RAM development and model calibration. The model will be completed by mid-2016 and presented to the Interagency Committee composed of the U.S. Fish and Wildlife Service, NOAA Marine Fisheries Service, U.S. Natural Resources and Conservation Service, U.S. Forest Service, Department of Natural and Environmental Resources, and Puerto Rico Environmental Quality Board.

Version 1 of the model was completed, and the U.S. Army Corps of Engineers retained the services of the USA-RAM model developers. Version 2 of the Puerto Rico-Antilles model will be completed with the direct participation of these experts, Department of Natural and Environmental Resources and U.S. Army Corps of Engineers wetlands experts, and consultants funded through a U.S. Environmental Protection Agency grant.

In addition to the benefits of this decision-support tool for regulatory and permitting processes both at the federal (SACE –CWA 404 permits) and commonwealth (DNER – Law 241 permits) levels, the coastal program envisions that the 24 reference sites whose conditions were assessed can become the baseline for long-term monitoring in support of climate change assessments. The coastal program is coordinating with the national estuarine research reserve representatives in Jobos Bay to use the sentinel sites approach and develop basic trends and monitoring observations.

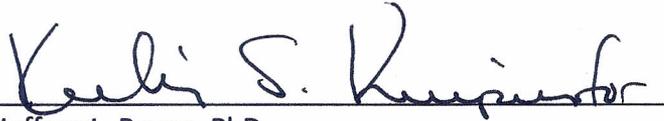
The coastal program believes it will meet its target and has made significant progress. The program should achieve the target by 2017, if model development and adoption of the model goes smoothly.

Conclusion

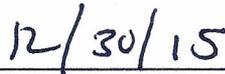
For the reasons stated herein, I find that Puerto Rico is adhering to the programmatic requirements of the Coastal Zone Management Act and its implementing regulations in the operation of its approved Puerto Rico Coastal Management Program.

These evaluation findings contain two necessary actions and four recommendations. The necessary actions are mandatory and must be completed by the dates given. Recommendations must be considered before the next regularly scheduled program evaluation but are not mandatory at this time. Recommendations that must be repeated in subsequent evaluations may be elevated to necessary actions.

This is a programmatic evaluation of the Puerto Rico Coastal Management Program that may have implications regarding the state's financial assistance awards. However, it does not make any judgment about or replace any financial audits.



Jeffery L. Payne, PhD
Acting Director
NOAA Office for Coastal Management



Date

Appendix A: Response to Written Comments

Ruth Santiago
Comite Dialogo Ambiental, Inc.

Ms. Santiago praised the Department of Natural and Environmental Resources (DNER) entering into collaborative agreements with community and environmental groups with respect to various coastal areas, including the Jobos Bay National Estuarine Research Reserve (JBNERR). She noted a number of benefits of the agreements, including that they form a solid foundation for community and civic society participation and promote sustainable public access to the reserves and other protected areas, and she believes that greater civic participation will result in greater community resilience.

Ms. Santiago also commended DNER for its work to declare the critical condition of portions of the South Coast Aquifer, which discharges into Jobos Bay and other coastal areas in southern Puerto Rico. She noted that there had not yet been a final declaration, but if completed the declaration of Punta Arenas would be a huge accomplishment for the coastal program

Ms. Santiago also provided extensive information on a project proposed for Punta Arenas and referred to Planning Board case number 2008-69-0317-JPU. She noted that although permits are required, the owner has already used fill material and removed vegetation. She noted that the same owner had received cease and desist orders as far back as 1998 and the proposed project was located in the flood zone. She noted that the area was very important for its natural resources, including as an estuarine fishing zone, and the local communities depended on these resources. She stated that the case is an example of concerns raised in the previous evaluation of the coastal program that permitting and enforcement have been deficient. She states that often the most effective government policy to achieve conservation is to promote community organization and capacity building to enable direct implementation of sustainable development projects and provided examples from around the world. She concludes that the coastal program, reserve, and NOAA should engage community members in restoration and research projects.

Ms. Santiago also cites the opportunity and need to use the Internet to provide information and transparency. She noted the importance of providing information to the public so that they could be informed regarding proposed projects and provide meaningful input. She sites as an example the challenges in getting information from the Puerto Rico Planning Board before a hearing for the Aguirre Offshore Gas Port and discusses a number of concerns with the project, including the potential for spillage of drilling fluid. She also notes that the reserve and DNER have little or no input into the siting process.

NOAA Office for Coastal Management's Response: The NOAA Office for Coastal Management thanks Ms. Santiago for her comments. The evaluation team met with one community group that had a joint management agreement with the Department of Natural and Environmental Resources and was very impressed by the work and role of the group. Ms. Santiago cites

continuing concerns with the permitting and enforcement programs and the need to provide more information and transparency through the Internet. The evaluation findings contain a necessary action regarding improving coordination of agency enforcement efforts. In addition, the findings include recommendations regarding Puerto Rico Department of Natural and Environmental Resources' enforcement efforts and improving public access to information regarding enforcement actions, permits, and public access.

Maria Falcon
GeoAmbiente del Caribe, Inc.

Ms. Falcon commended the coastal program for its “continuity, cohesion, and leadership,” in developing the Puerto Rico Climate Change Council. She noted a major achievement was that the council has been able to work independently across government administrations, and the summits have brought together the most prominent scientists and also new and young researchers in Puerto Rico to share and discuss their research and findings.

She stated the council has made its reports and information publically available, but it is a challenge for government and community organizations to grab and use the information. She also noted that through her work with the coastal program they had produced two episodes in a series on climate change and, with Sea Grant program collaboration, produced another two chapters on coastal erosion, which were broadcast in prime time by the local PBS affiliate stations.

She also noted that accelerated erosion in numerous beaches set the scenario for the First Coastal Municipalities Encounter, and the coastal program's publicizing of the issue prompted a new alliance with Sea Grant Program, CariCOOS, and U.S. Corps of Engineers to address the situation.

NOAA Office for Coastal Management's Response: The NOAA Office for Coastal Management thanks Ms. Falcon for her comments. The evaluation findings include a recommendation to work with government agencies to help them incorporate climate information into existing plans, regulations, and guidance. In addition, the findings discuss stakeholder recommendations regarding opportunities to provide more information to community organizations and the public.

RJ de Pedro Muñoz
GESCICA – Grupo Estudios Científicos del Caribe

Mr. Muñoz emphasized that access to information is critical and encouraged the coastal program to develop a “Dashboard” interface so that the public could determine the current state of coastal management efforts. He also discussed the idea that volunteer groups could use drones to gather visual and metric data and that crowdsourcing this effort could be beneficial and help capture changes in the coastal zone over time.

He also stressed the importance of outreach activities to involve the public in coastal management, prudent development, and conservation efforts. He noted that most major conservation efforts have been championed by the people who have worked to gain government support. He cited the example of Paco López Mujica, who with volunteers worked to successfully establish the Marine Reserve in Isla Verde or Arrecife Isla Verde. He also cited ongoing efforts to establish a reserve in Puerta de Tierra, in the historic area of Old San Juan, by Sonia Villaverde and volunteers.

Mr. Muñoz stated that providing timely data and images could help these groups achieve their goals in months instead of years. He noted that many changes had occurred since the previous evaluation, including a deep recession, which has resulted in developers being more interested in coastal development. He noted that it is critical that interested groups and the general public have access to relevant information about current plans and activities related to the coasts, and that could help them support the objectives of the coastal zone management program and provide for sustainable economic growth that takes into account the needs of the population and public access to beaches as guaranteed by law.

NOAA Office for Coastal Management’s Response: The NOAA Office for Coastal Management thanks Mr. Muñoz for his comments. The NOAA Office for Coastal Management concurs that providing more information would be beneficial, and the evaluation findings contain recommendations regarding providing the public with additional information on permits, enforcement actions, and public access. Based on information provided during the site visit, it is apparent that the commonwealth is working to provide more information on the web, including through the use of mapping applications, and the NOAA Office for Coastal Management believes this will provide valuable information to the public and is supportive of these efforts. The office also understands that the Department of Natural and Environmental Resources has increased the number of collaborative management agreements in the past few years and that both community groups and the department appear to benefit from these relationships.

José M. Aponte Palou, President
Angie Coló-Pagán and Louis Jorge Rivera-Herrera
The Coalición Pro Corredor Ecológico del Noreste

The Coalición wrote to request that the Puerto Rico Department of Natural and Environmental Resources and NOAA formally adopt and include the Northeast Ecological Corridor Nature Reserve as one of the nature reserves officially recognized under the Puerto Rico Coastal Zone Management Program. They requested that this be carried forward either as part of the current review or update process that is being conducted for the whole Puerto Rico Coastal Zone Management Program document, or individually, as a routine program change, whichever can be completed in the shortest period of time. The commenters also noted that NOAA has played an important part in this initiative, helping to finance the acquisition of private lands exceeding 400 acres in the reserve through its Coastal and Estuarine Land Conservation Program and as a trustee of the Morris J. Berman Natural Resource Damage Assessment Oil Spill Settlement Fund.

The commenters also pointed out that the Northeast Ecological Corridor Nature Reserve Act ordered the Puerto Rico Planning Board to designate the Northeast Ecological Corridor's watershed as a Special Planning Area, including the adoption of land use zoning in this area that fosters and protects the connectivity between mountainous and coastal ecosystems, as part of El Yunque National Forest and the Northeast Ecological Corridor Nature Reserve. We request NOAA, the Department of Natural and Environmental Resources, and the Puerto Rico Planning Board to formally adopt and include the Northeast Ecological Corridor and its watershed as one of the nature reserves and special planning areas officially recognized under the coastal program.

NOAA Office of Coastal Management's Response: The NOAA Office for Coastal Management thanks the Coalición for their comments and encourages the Puerto Rico Coastal Management to submit a routine program change to NOAA requesting the incorporation of the reserve into the commonwealth's federally approved program.

Javier E. Bidot, PSM

Javier E. Bidot & Associates

Mr. Bidot raised four issues, the first being public access. He noted that we now have more information instantly available with regard to weather and the ocean through CariCOOS, NOAA National Weather Service and National Ocean Service, and other tools. While this information is available, public safety of beachgoers remains a big concern. He noted that providing additional access in remote and rugged areas has led to more lives lost in secluded and high-surf beaches. He noted that there is much more to be done to increase public awareness of the dangers. He stated that greater investments on information propagation and signage and monitoring are needed. This is to ensure any beach sign that is lost is promptly replaced and that key stakeholders such as hoteliers and beach restaurant operators are part of the information network that will help beachgoers ascertain what type of beach they are entering at any given time. He also noted that periodic water quality sampling has found contamination, and this information should also be provided.

The second issue raised was the coastal program as an economic development tool and specifically the regulation 4860, which addresses the maritime terrestrial zone. Mr. Bidot noted that a draft amendment to regulation 4860 was published on the Department of Natural and Environmental Resource's website and the general public was invited to provide input. He listed concerns with the application of the regulation and the proposed amendment. He noted that the regulation goes too far in interpretation of the 1886 Law of Ports enacted by the Spanish Crown, and that the regulation's goals "to curtail or significantly reduce risks to life, property and public safety, by eliminating existing development, or the prohibition of new developments in high risk areas and the adequate control in other areas of risk..." goes too far because by definition all coastal areas subject to the Puerto Rico Coastal Management Program are "high risk areas" according to Federal Emergency Management Agency maps, therefore making the implementation of regulation 4860 a public policy that coastal development is all but banned in Puerto Rico.

He believes that this interpretation has strongly curtailed the development of beachfront hotel accommodations, less than 1,000 rooms in the last 20 years, while nearby jurisdictions have in some instances doubled or tripled their hotel occupancy. He stated that he has seen a great deal of development in pristine natural settings without noticeable effect on the environment.

He noted that section 15.4 of the present regulation 4860 (section 14.4 on the proposed amendment) provides a statutory waiver that can be conceded by the Department of Natural and Environmental Resources secretary for primary residences appraised at under \$30,000 for social interest. He states that this results in large residential areas without sewer systems, flood insurance, and property taxes and which are the greatest source of pollutants, coastal erosion, water turbidity, species migration, and general environmental degradation while larger developers are discriminated against for “conservation reasons.” Mr. Bidot recommends a complete rethinking of DNER’s administrative policies on R.4860 and for a fresh approach inclusive of all general public sectors and defining the “public interests” it wants to protect. He also encouraged the coastal program to bring in the private sector as it could be a resourceful and strong ally in conservation practices but has not been included in previous years.

Mr. Bidot also raised issues with the technical certainty of maritime terrestrial zone demarcations, particularly that although the maritime terrestrial zone demarcations are clearly defined by technical parameters, a demarcation filing takes over 6 months up to years to approve, if ever. He noted that once the surveys are finalized there are a myriad of title evaluations, dating to 1886, permits for previous improvements to the land, and environmental tests that fall outside the demarcation process.

He also stated that regulation 4860 uses the terms public domain and maritime terrestrial zone limits interchangeably, when public domain implies lands which have title vested on the government, and he believes that this is a “taking” and noted that this interpretation has been reviewed and upheld in the Supreme Court.

He also noted that the one-year validity for a certification of maritime terrestrial zone demarcation was problematic since a typical project development cycle will take between 3 and 8 years, depending on its complexity. Also, the maritime terrestrial zone demarcation must occur at the conceptual stage of the development process in order to assess the available land for the project.

Mr. Bidot also encouraged more engagement with the private sector, particularly with regard to the Puerto Rico Climate Change Council. He noted that the private sector could provide expertise and resources, communicate the views of the public, and provide a dose of practicality that will increase efficiency.

NOAA Office for Coastal Management’s Response: The NOAA Office for Coastal Management thanks Mr. Bidot for his comments. The evaluation team heard from a number of stakeholders that coastal public access safety concerns needed to be better addressed, and this is discussed in the public access section. The evaluation findings include a discussion of public safety, and the

office encourages the coastal program to work through the Interagency Beach Board and with partners to improve public safety. Mr. Bidot raised several issues with regulation 4860 and the proposed amendment. The previous evaluation findings called for the coastal program to complete the delineation of the maritime zone, and the Puerto Rico Coastal Management Program has worked with stakeholders to provide a more definitive reference line and proposed amendment. Public hearings allowing for public comment on the proposed amendment are also to be held. The Office for Coastal Management acknowledges that stakeholders may have different views on how best to protect lives and property in high risk areas but believes that the public hearing process for the proposed amendment allow different views to be considered. It is the understanding of the Office for Coastal Management that the department only grants waivers for social interest considerations, to existing structures currently and permanently inhabited by a single family whose sole property lies within this area. The coastal program has initiated an inventory of all structures located within the boundaries of the reference maritime terrestrial zone line established through the Official Reference System developed by the department to help avoid illegal construction activity and squatting on public trust land. Mr. Bidot also raised issues with the timeliness of finalizing a maritime terrestrial zone demarcation. The Office for Coastal Management is supportive of efforts to streamline permitting programs while still providing effective review and is hopeful that a more definitive reference will assist with a more timely review. The Office for Coastal Management is also supportive of coastal programs engaging with the private sector where both can contribute to improved coastal zone management, particularly around major issues such as climate change.

Juan D. Murcia and Yvette M. Núñez
C.R.E.S.

Mr. Murcia and Ms. Núñez provided comments and a PowerPoint that discuss the role of community groups in managing natural areas and the importance of collaborative agreements between the Department of Natural and Environmental Resources and community groups such as C.R.E.S. They discussed the necessity for communities to have access to information to better manage the coasts and also noted the lack of funding for community groups. They stated that Law 161 makes it easier for developers to receive coastal building permits, sometimes without the need to communicate their plans to surrounding communities, and that this has led to loss of coastal natural areas and major erosion problems. They also noted that government agencies lack the necessary personnel to communicate information and assist communities with applying for grants.

They also discussed the importance of the north coast of San Juan and that the erosion that is occurring along Ocean Park could be reduced through dune reforestation and coral reef restoration. They discuss study results showing that stony coral reef colonies can be successfully restored and that they are currently in the first phase of such a project.

They discuss threats to coastal areas and the impacts on live corals. They note that the knowledge of marine biodiversity and distribution of marine species off the coast of Santurce is

much less accurate and updated but that they are working to fill this gap. They provided a list of activities that would result in better management of the coast.

They provide a discussion of the importance of wetlands both biologically and economically, including fisheries and public access opportunities. They also discuss the threats to wetlands, including the fact that half of the original 30,000 acres of mangrove forests in Puerto Rico have been destroyed for construction purposes. They note that reforestation helps counteract urban heat island effects and provide wildlife habitat.

NOAA Office for Coastal Management Response: The NOAA Office for Coastal Management thanks Mr. Murcia and Ms. Núñez for their comments. The office agrees that coral reefs and wetlands provide many valuable functions and effective coastal management is important. The evaluation team was very impressed by the dedication and passion of community groups in Puerto Rico. The office also understands that the Department of Natural and Environmental Resources has increased the number of collaborative management agreements in the past few years and that both community groups and the department appear to benefit from these relationships. The office also agrees that availability of information and tools and technical assistance around key issues could be very beneficial, and this is discussed in the findings.

Ramon Olivencia

Old San Juan Puerto Rico

and

Ricardo Laureano

Grupo VIDAS

and

Sheila Ward

and

Valeria Torres López, B.A.

University of Puerto Rico

and

Abimarie Otaño Cruz, Master's Student

University of Puerto Rico

and

Freddy Vélez-García, Former Deputy Director

Instituto de Cultura Puertorriqueña

Old San Juan, Puerto Rico

and

Dr. Sonia Villaverde

President LOLA Constanera

and

Mary Ann Lucking, Director

CORALations

and

Kathy Gannet

Vieques, Puerto Rico

The commenters each requested an extension of the deadline for written public comments for the 312 evaluation to 30 or 60 days after the department posted on its website, in Spanish, a program change analysis addressing changes to the Puerto Rico Coastal Management Program implementation with the passage of Act No. 161-2009 as amended.

NOAA Office for Coastal Management Response: The programmatic 312 evaluation is a separate process from the program amendment review of a proposed program change, and the processes each have their own criteria and deadlines. The NOAA Office for Coastal Management was unable to extend the deadline to the comment period for the evaluation and still meet its statutory deadline constraints. The office did, however, extend the public comment period for review of the commonwealth's request for approval of changes made to the Puerto Rico Coastal Management Program. The focus of that review is ensuring that, as changed, the coastal program continues to meet federal criteria for the approval of coastal programs (section 306 of the Coastal Zone Management Act).

Dr. Edwin A Hernández Delgado
Affiliate Researcher
Center for Applied Tropical Ecology and Conservation

Dr. Hernández provided written comments and provided the article “Long-Term Impacts of Non-Sustainable Tourism and Urban Development in Small Tropical Islands Coastal Habitats in a Changing Climate: Lessons Learned from Puerto Rico,” published in *Visions for Global Tourism Industry—Creating and Sustaining Competitive Strategies*.”

Dr. Hernandez stated that the Puerto Rico Coastal Management Program does not meet the minimum requirements of the Coastal Zone Management Act because it does not fully comply with Puerto Rico Coastal Zone Management Plan (1978) or with the Culebra Segment of the plan (1976). It does not comply either with Commonwealth Law 66 (1975), as amended by Law 176 (2002), with Law 147 (1999), with the Clean Water Act, or the U.S. Endangered Species Act in regard to the conservation of Endangered Species Act-listed coral species and Acroporid corals designated critical habitats.

He also states that the Puerto Rico Coastal Management program does not provide a mechanism to ensure that state and local agencies adhere to the program since there is an excessive and unprecedented concentration of power in the Permits Management Office, which often results in decisions that fail to comply with the coastal program and previously cited regulations.

He stated that it does not provide a meaningful opportunity for public participation in land use planning and permitting, since new fast-tracking procedures have resulted in the net elimination of public participation of most processes.

Dr. Hernández listed a number of impacts of changes and problems with the current state of affairs. (1) Non-democratic, non-participatory, top-down approach. (2) More adverse permanent environmental impacts due to construction in the coastal zone. (3) Socio-economic degradation of local coastal communities due to lack of public participation in project review. (4) Regulations that are much less rigorous, including zoning and planning regulations and fast track permitting. (5) Projects that often favor private over public interests. (6) Structures that are built in areas with conflicting zoning, often impacting the natural ecosystem and local communities. (7) Conflicts of interest and corruption, for example government officials, contracted consultants, or key personnel who are or were also contracted consultants of project developers. (8) On Culebra Island, fraudulent documents created to support permit approval. (9) The government is too focused on construction as the economic solution, instead of focusing on environmental and socio-economic sustainability. (10) A need for the government to focus more on climate change and sea level rise impacts. (11) A need to establish setbacks to reduce potential threats associated with sea level rise. (12) Incomplete delineation of the maritime terrestrial zone, including a total lack of delineation within the militarized areas of Vieques Island. (13) A need to demilitarize and clean up Vieques Island. In addition Dr. Hernández calls for a moratorium on construction permits until a full delineation of the maritime terrestrial zone is completed, setbacks established, land use plan adopted and implemented, environmental and socio-economic sustainability is incorporated into overall socio-economic development plans, and meaningful public participation is implemented.

Dr. Hernández also stressed the need to incorporate sustainability principles and support local cultures and communities, protect and restore ecosystems, comply with the Clean Water Act, improve the management of nonpoint source pollution—both the coastal program and NOAA should foster community-based coral farming and reef rehabilitation projects—and restoring public participation.

Dr. Hernández also states that there needs to be a review of which projects should go through fast tracking, and the process should consider cumulative impacts. He states that fast tracking has resulted in decoupling the decision-making processes and permit approval between the Permits Management Office and Department of Natural and Environmental Resources. He notes that there is a chronic lack of enforcement and agencies are understaffed, and this results in noncompliance with the coastal program and other federal and commonwealth regulations.

Dr. Hernández also raises concerns with fishing, including improving the development and management of marine protected areas; community-based coral farming and reef rehabilitation; open ocean fish mariculture; development of an artificial reef and fish aggregating devices program to foster fishing; and enhanced protection, rehabilitation, and management of fish nursery grounds.

NOAA Office for Coastal Management Response: The NOAA Office for Coastal Management thanks Dr. Hernandez for his comments. These evaluation findings do not make any determination on whether the currently proposed amendment to incorporate Law 161 as amended into the federally approved coastal program is approvable. The Office for Coastal

Management is considering whether the program implementation issues raised by the commenter relate to the changes to the authorities of the program that are presently undergoing review as part of the program change approval process, and may be addressed through that process.

The evaluation findings encourage transparency in permitting, and in particular the use of technology to provide information to permittees, enforcement officers, and the public. In November 2015, the Puerto Rico governor signed off on an island-wide land use plan to help guide development and zoning. The findings also include a recommendation focused on the implementation of the findings in the report, "Evaluation and Analysis of the DNER Ranger Corps Including Strategic Plan for DNER Ranger Corps 2015-2020," funded by the NOAA Coral Reef Conservation Program. The demilitarization of Vieques and associated cleanup fall under the purview of the Department of Defense and are beyond the scope of this evaluation. The Office for Coastal Management also concurs with the importance of ecosystems and the importance of addressing coastal nonpoint pollution. The office has provided the Department of Natural and Environmental Resources with funding through other programs and Coastal Zone Management Act funds to assist with addressing coastal nonpoint pollution, acquiring lands for protection, and other projects to benefit natural resources. The Office for Coastal Management primarily addresses coral reef issues through the NOAA Coral Reef Conservation Program and direct support of community-based coral farming and reef rehabilitation are beyond the scope of this evaluation. Coastal Zone Management Act funds allocated under Sections 306, 306a, 309, and 310 are legislatively directed to federally approved coastal management programs.

Luis R. Roebuck
Asociacio Recreativa De Pesca Y Deportes Inc.

Mr. Roebuck expressed concerns with the board of directors of his organization and their actions in prohibiting specific members from the use of a public boat ramp. He stated that the boat ramp was open to the general public before the creation of the nonprofit organization, and a concession was issued to them by the Department of Natural and Environmental Resources.

NOAA Office for Coastal Management Response: The NOAA Office for Coastal Management thanks Mr. Roebuck for his comments. After the comment period had ended, Mr. Roebuck forwarded additional information that DNER had agreed to hold a hearing regarding the complaint contesting the concession.

Ricardo Laureano
Independent Reef Researcher
Community Coral Farmer
and
Mario "Bosque" Perez
VIDAS Co-Founder Member and Scientific Advisor
Scientific Researcher

Mr. Perez and Mr. Laureano state that law 161 favors a limited sector to the detriment of the public as a whole leading to gentrification and resource degradation. The commenters noted that the standing under law 161 as amended was an issue, as was concentrating all final decisions on a new agency, whose chief did not need to consider other agencies' expert opinions.

The commenters noted that the maritime terrestrial zone, salvamento zone (additional 20M inland from ZMT), and nonpermanent construction area (additional 30M inland additionally, behind Zona de Salvamento) were particularly important for protecting marine and coastal ecosystems and provided critical resources such as fishing areas to underserved communities. The commenters expressed concerns that power was too concentrated in the head of the Permits Management Office and that other government agencies had lost their ability to properly address the regulations they are responsible for. The commenters also noted concerns with the overuse of the Categorical Exclusion of Environmental Impacts. The commenters stated that permits are being issued for projects that do not meet regulatory requirements and approved land use plans.

The commenters cited a number of projects he has concerns with including the Paseo Lineal Puerta de Tierra project, which did not conduct a required Environmental Impact Assessment, a series of incinerators proposed for the island, for which Puerto Rico has requested almost a billion dollars in federal funding to build in a flood zone, and multiple condo developments along the coast proposed in flood zones. The commenters noted that community groups had organized to protest a number of these proposals.

The commenters noted that one of the biggest Acropora palmate populations is off of Vega Baja and Manati (two central north shore municipalities). He noted that the Coastal Zone Management Act is supposed to provide the tools for the protection of ecosystems and the traditionally underserved coastal communities and summarized key points from the act. The commenters asked several questions including why (1) small nongovernmental organizations don't get any help, (2) why publications are not made available to the people, (3) why there isn't a stronger and larger education component, and noted the need to partner with academia, agencies, and nongovernmental organizations, and (4) asked where is the money.

NOAA Office for Coastal Management Response: The Office for Coastal Management thanks Mr. Laureano for his response. The office is considering whether the program implementation issues raised by the commenter relate to the changes to the authorities of the program that are presently undergoing review as part of the program change approval process, and may be addressed through that process.

The Coastal Zone Management Act provides federal funding to the designated state agency to implement the state's coastal management program as legislatively directed. A state coastal program works with NOAA annually to develop a cooperative agreement that lays out how the funding will be spent. NOAA then monitors the implementation of the cooperative agreement. A state coastal program may choose to subgrant or contract out work to successfully complete the tasks in its Coastal Zone Management Act cooperative agreement.

The Coastal Zone Management Act calls for coastal management programs to balance coastal development and the protection of natural resources. Public education is not listed as one of the primary purposes of the Coastal Zone Management Act in 16 U.S.C. Section 1452, but it is an important activity that many coastal programs participate in to varying degrees. The NOAA Office for Coastal Management concurs that it is important to partner with academia, agencies, and nongovernmental organizations. In addition, it is important that reports and tools developed by the coastal management program be made public and their use encouraged, and this is discussed and encouraged in the findings.

**Pedro M. Gonzalez, President
MARE Society**

Mr. Gonzalez expressed deep concern over corrupt activities with the evaluation and permitting process of development projects in the coastal zone. He emphasized the importance of public participation and stated that the polarization between property owners-developers and environmentalists is made worse when construction projects are approved without public participation.

He stated that the Puerto Rico Permit Process Reform Act was created so that owners and developers could obtain a permit in a short time frame without addressing environmental concerns. He noted that many developers might not know how to address environmental concerns. To address these issues he noted the importance of finalizing the long-delayed Puerto Rico Land Use plan to provide clear guidance on siting different types of projects.

He discussed the proposed amendments to the maritime terrestrial zone and stated that at a public meeting the two main comments were “our economic interests are going to be affected” and “it represents a government regulatory over-presence.” He noted that the proposed amendments protected the economic interests of property owners by protecting their property with a buffer and that the area is already in the public domain for current and future generations. He noted that when owners had to revert to installing hard structures to protect their property it resulted in increased erosion in front of their property and neighboring properties. Mr. Gonzalez emphasized the importance of using scientific criteria to determine the buffer strip and the importance of beaches, dunes, coastal vegetation, mangroves, and corals to help protect against the effects of climate change, including sea level rise.

Mr. Gonzalez stated that changing the laws didn’t matter if money led to corruption and stated that this was a problem in Puerto Rico. He detailed three cases as examples: (1) proposed development of a 15 story hotel on five acres of public beach in Isla Verde, Carolina, which among other issues did not obtain the proper permits and required environmental impact statement, (2) a promenade along the coast fronting Puerta de Tierra in Old San Juan in which a ministerial permit was granted even though the project required a zoning change and could impact coral reefs, both which should have necessitated public input, and (3) a hard structure promenade fronting the beach in the Municipality of Toa Baja, in which the Highway Authority

began to remove trees and shrubs in the maritime zone, which was stopped after the community protested. In these three cases, the public was not given the opportunity to comment.

He noted a number of concerns with unsustainable construction, including flood control, sedimentation of water bodies and the effects on corals and drinking water holding capacity, habitat fragmentation, biodiversity, and the resulting impacts on commercial fisheries and marine tourism revenue and higher costs as a result of inappropriate development damaged in floods. He noted the need to change the sometimes highly antagonistic relationship between conservationists and developers and the need to change this and raise awareness of the need for sustainable development.

To address the above issues, Mr. Gonzalez proposes strong legislation that empowers community, environmental, and conservation groups to have complete and easy access to permit applications. In addition, he proposes that a group be created with members from community, environmental, and conservation groups to provide scientific and technical expertise to the permitting process. He cites as a move in this direction, Executive Order Num. OE-2014-027 – Development of a Public Policy toward Organizing Civil Society into Law, which calls for nongovernmental organizations and public agencies to coordinate and integrate services. One of the order’s specific objectives is to “Promote transparency mechanisms to provide with greater access to government information, public hearings, reports, and opportunities for citizen participation.

NOAA Office for Coastal Management Response: The NOAA Office for Coastal Management thanks Mr. Gonzalez for his comments. The office is considering whether the program implementation issues raised by the commenter relate to the changes to the authorities of the program that are presently undergoing review as part of the program change approval process, and may be addressed through that process.

The Puerto Rico Coastal Management Program is working with numerous partners to look at and plan for climate change and its impacts including increased risk from coastal hazards. The coastal program will be working with partners to develop guidance and help agencies and communities incorporate climate change and coastal hazards into existing planning mechanisms in order to better protect lives and property. The Office for Coastal Management heard from a number of commenters about their concern with corruption in the permitting process. The office agrees with Mr. Gonzalez that providing the public with easily accessible and timely information on permits would be beneficial in providing a clearer and more transparent process that hopefully would ensure that proper procedures are followed and that the public remains informed on the process, and this is discussed in the findings and recommendations are included to increase the information available to the public regarding permits and also enforcement efforts. The agencies of the Puerto Rico Coastal Management Program may also wish to consider forming a group to provide scientific and technical expertise to provide input into the permitting process and pursue legislation to ensure open and easy access to permitting records.

Dr. Kurt Grove
Research Coordinator
University of Puerto Rico Sea Grant College Program

Dr. Grove stated that the Puerto Rico Department of Natural and Environmental Resources provides an essential focus on the management of marine, wetland, and terrestrial ecosystems, habitat, and wildlife, which contributes to resilient and sustainable coastal communities around Puerto Rico. The department also leads discussion on climate change adaptation and consultation, and assessment of these themes will provide critical guidance during the upcoming decades.

He noted that Puerto Rico Sea Grant consults frequently with the department's expert personnel to gain insight on important natural resource and environmental issues and that this helps Sea Grant decide where they might fund useful complementary research. He also noted that the coastal program provides guidance on permits related to research projects to ensure that their activities comply with federal requirements related to the federal Environmental Protection Act.

NOAA Office for Coastal Management Response: The NOAA Office for Coastal Management thanks Dr. Grove for his comments.

Pedro A. Gelabert

Commented that he could not attend the public meeting but stated that Department of Natural and Environmental Resources efficiently implemented the Coastal Zone Management Program.

NOAA Office for Coastal Management Response: The NOAA Office for Coastal Management thanks Mr. Gelabert for his comments.

Mary Ann Lucking, Director
CORALations

Ms. Lucking submitted two letters. This first letter requested that the NOAA Office for Coastal Management hold a second public meeting as noticing requirements were not met, attendance did not appear high, and NOAA did not comply with the Executive Order for Environmental Justice. Ms. Lucking noted that major changes to the program had occurred during the evaluation period and listed a number of concerns stating she needed more time to prepare comments.

NOAA Office for Coastal Management's Response: The office thanks Ms. Lucking for comments. A second public meeting was held on September 2, 2015, in San Juan. All federal requirements for the second public meeting were met. Ms. Lucking also provided a second set of comments that more thoroughly discussed the issues listed in the first letter. The office's response to Ms. Lucking's concerns are found below in the office's response to the second letter submitted by Ms. Lucking and additional commenters.

**Mary Ann Lucking, Director
CORALations**

and

**Ricardo de Soto, Director
GuardaMar Caribe**

and

**Dr. Sonia Villaverde
President
LOLA Costanera, Inc.**

and

**Alberto de Jesus, Presidente
Amigos del Mar Inc.**

The commenters expressed their disappointment that this is the first evaluation of the Puerto Rico Coastal Management Program in 10 years, that notification requirements were not met for the first public meeting, that no performance report was made available to the people for review and comment, that the *Federal Register* notice for the second public meeting listed the due date for comments as September 11th while at the September 2nd public meeting a due date of September 15th was given, and that an extension for written comments was not given after the second public hearing until after a Spanish version of the program amendment analysis document was provided. The commenters stated that they believed this was not in the spirit of Coral Reef Executive Order 13089 and Executive Order 12898 for Environmental Justice.

The commenters also noted that they did not have a Spanish version of the program change analysis document for the coastal hearing held the same day regarding a proposed program change to incorporate the Puerto Rico Permit Process Reform Act of 2009 as amended into the program. The commenters request that their comments regarding the amendment be incorporated with these comments.

The commenters first focused on beach access. They stated that public access has been lost to a number of Culebra's public beaches over the past 10 years even though Puerto Rico enjoys constitutional right of access to all beaches and that they have been involved in a number of court cases to protect public access. In addition, they provided an example of an owner who engaged in retaliatory behavior and lawsuits against residents who complained. The commenters noted that landowners used many creative means to try to block access to the beach, including planting endangered trees on roadways. The commenters stated that the municipality passed an ordinance to respond to concerns about privatization of public access but faced challenges because there were no survey coordinates of where the original beach access roads existed.

The commenters also noted that wetland clearing often accompanies beach privatization or privatization attempts since wetlands involve a more liberal setback of the people's dominion of the shore. Commenters also stated that under previous administrations, Department of Natural and Environmental Resources enforcement personnel were responsible for inaccurate wetland delineations that led to privatizing public beaches.

The commenters also brought up land use planning issues and noted that in December 2012 a municipal territorial plan for Culebra was authorized days before an administration change that radically changed zoning, including the elimination of special protective low density zoning put in place to protect coastal waters, without public participation or coastal zone oversight. The change was determined to be a “categorical exclusion” and was fast-tracked without public comment. Commenters stated that “categorical exclusions” are being used for many projects whether small in scope or not.

The commenters also pointed out that after several decades of development Puerto Rico has not adopted a land use management plan. The commenters stated that municipal territorial plans did not have meaningful agency oversight to ensure that they meshed with coastal zone policy or other management plans.

Commenters also stated that not all projects in Culebra, particularly inland projects, were being reviewed for federal consistency, although the entire island is considered the coastal zone.

Commenters raised specific concerns regarding the Paseo Lineal project along the Atlantic Coast of Puerta de Tierra in Old San Juan approved in 2009 and an U.S. Army Corps of Engineers landslide repair project. They stated that the Paseo Lineal project encompasses a mile of coastline with historic artifacts and coastal waters listed as critical habitat, with endangered corals located less than 50 meters from shore, and falls within setbacks associated with the maritime terrestrial zone. The commenters stated that the project was included in the governor’s commonwealth development program after it was initiated, which then excluded it from public participation requirements. They stated that the repair work for the landslide repair project was covered by a nation-wide permit, and no federal consistency review was conducted or public hearing held. They also noted that the federal nation-wide permit 13 issued for the landslide project relied on a categorical exclusion issued by the Public Works of Puerto Rico for all road work in all municipalities of Puerto Rico.

The commenters also expressed concerns that Puerto Rico continues to operate under a 301(h) waiver under the Clean Water Act and that all but one regional waste water treatment systems discharge primary sewage into shallow coral reef systems.

The commenters discussed that Law 147, 1999, part of the federally approved coastal program, calls for an Environmental Impact Study and associated public hearings for all projects posing a risk to reefs. The commenters stated that public hearings were no longer held or environmental impact studies reviewed. They also note that there is little to no coastal water quality monitoring conducted by the Environmental Quality Board.

The commenters also assert that Puerto Rico relies on outdated and ineffective balanced fishery management legislation. They state that catches are not monitored, outdated and destructive fishing methods are allowed, and no legislation addresses recreational fishing. They also note

that most designated natural reserve areas in Puerto Rico's waters are "paper parks" and have no meaningful fisheries management (no restrictions).

The commenters note that some aspects have improved with the current administration but that local Department of Natural and Environmental Resources Vigilante Officer enforcement has declined dramatically, with in many cases a complete refusal of the Vigilantes to take complaints on Culebra. They state that when the regional office is called, complaints are issued numbers, with no follow-up.

The commenters also wish the coastal program to broaden the exercise of its authority where coastal water quality could be impacted. They cited the particular example of actions in the Vieques Federal Wildlife Refuge to clean up contaminated lands as a concern. The commenters believe the coastal zone boundary should be expanded to include rivers, watersheds, and Culebra dry river beds and recommend it being inclusive of coastal municipality boundaries.

The commenters also stated that the maritime terrestrial zone did not have actionable guidelines leading to arbitrary delineations by the agency. They note that the new lidar map is beneficial and that guidelines for determinations are still in draft form.

NOAA Office for Coastal Management Response: The NOAA Office for Coastal Management thanks the commenters for their comments. The Office for Coastal Management held a public meeting on May 13, 2015. The *Federal Register* notice was not published until 28 days before the public meeting, missing the 45 day deadline. Upon the request of a member of the public, a second public meeting was held on September 2, 2015. The meeting was advertised in the *Federal Register* on July 9, 2015, more than 45 days before the public meeting. The initial *Federal Register* deadline for written comments was September 11, 2015. On August 4, 2015, a *Federal Register* notice provided a correction to this date and extended the comment period to September 15, 2015, to align with the dates included in the public notices issued by Puerto Rico Department of Natural and Environmental Resources. The extension of the comment period provided additional time for members of the public to submit comments.

The programmatic 312 evaluation is a separate process from the program amendment review of a proposed program change, and the processes each have their own criteria and deadlines. The NOAA Office for Coastal Management was unable to extend the deadline to the comment period for the evaluation and still meet its statutory deadline constraints. The office did however extend the public comment period for review of the commonwealth's request for approval of changes made to the Puerto Rico Coastal Management Program. The focus of that review is ensuring that, as changed, the coastal program continues to meet federal criteria for the approval of coastal programs (section 306 of the Coastal Zone Management Act).

The evaluation findings discuss public access issues raised by stakeholders and include a recommendation to improve enforcement of public access requirements, and to pursue opportunities for providing the public with increased access to locational information for public access sites, public rights-of-way, and public access ways identified during the permitting process.

The Puerto Rico adopted the first island-wide land use plan for the commonwealth in November 2015. The evaluation team heard numerous concerns raised about transparency in the land use planning and permitting process. The findings encourage all the networked agencies of the coastal program and the Permits Management Office to provide electronic access to more information including the rationales for approving permits, land use changes, and determining the level of environmental review needed.

From the information provided it is unclear if projects in Culebra that should be reviewed for federal consistency are not being reviewed. A federal agency provides a state with a *consistency determination* for federal agency activities affecting coastal uses or resources. A nonfederal applicant for a federal license or permit provides a state with a *consistency certification* if the state has identified the federal license or permit on a list of activities subject to federal consistency review in its federally approved coastal management program. Every state has a federal consistency list which identifies the federal agency, federal license or permit, and federal financial assistance activities that are subject to federal consistency review if the activities occur within a state's coastal zone.

The U.S. Environmental Protection Agency has the responsibility and authority for issuing 301(s) waivers under the Clean Water Act and is the major source of federal funding and loans for large-scale water quality improvement projects.

The Puerto Rico Coastal Management Program does not have primary authority for managing fisheries, and other programs are likely better positioned to address development of new legislation and regulations to improve fisheries management.

A number of stakeholders brought up enforcement issues, including with Department of Natural and Environmental Resources rangers, which are discussed in the findings. The findings include a necessary action to develop a memorandum of understanding to further clarify and address each networked agency's role (including the Permits Management Office) and responsibilities with regard to enforcement. The findings also include a recommendation to implement the recommendations that came out of an evaluation of the DNER Ranger Corps funded by the NOAA Coral Reef Conservation Program.

If the Puerto Rico Coastal Management Program wishes to revise the program's boundary, the coastal program would need to submit the proposed new boundary to the Office for Coastal Management for approval. Expanding the coastal zone boundary may improve coastal management in Puerto Rico, but a change in boundary is not needed to implement the federally approved coastal management program.

The coastal program's efforts to successfully develop a reference line and draft amendment to the Maritime Terrestrial Zone Regulation 4860 are discussed in the findings. The Office for Coastal Management has encouraged the coastal program to further define the maritime

terrestrial zone in the past and believes that once adopted, the new reference line and amendment should provide more clarity to the delineation process.