

Final Evaluation Findings

Puerto Rico Coastal Zone Management Program

September 2015 to September 2023

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Summary of Findings

The Coastal Zone Management Act (CZMA or the Act) 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 Coastal Zone Management Program administered by the Puerto Rico Department of Natural and Environmental Resources, the designated lead agency, for the period from September 2015 to September 2023. The evaluation focused on three target areas: program administration; hazard mitigation, recovery, and restoration; and management of coastal development.

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

Accomplishment: The Puerto Rico Department of Natural and Environmental Resources has recently initiated a new academy to train recruits to the Ranger Corps to more effectively enforce laws and regulations.

Accomplishment: The Puerto Rico Coastal Zone Management Program has significantly improved the quality and timeliness of periodic progress reporting during this evaluation period.

Accomplishment: The Puerto Rico Coastal Zone Management Program advanced several efforts to support communities as they worked to develop community-scale climate change action plans.

Accomplishment: The Puerto Rico Coastal Zone Management Program has supported a number of successful on-the-ground resource protection and restoration efforts during this evaluation period.

Necessary Action: Within 180 days of issuance of these findings, the Puerto Rico Coastal Zone Management Program must submit an analysis identifying changes to the program since the submission of the 2015 amendment to the program (PR-2015-1), including how the changes continue to satisfy the applicable program approval criteria of the Coastal Zone Management Act, 16 U.S.C. § 1451 *et seq.*, and its implementing regulations at 15 C.F.R. § 923 Subpart H. The analysis must address any changes to federally approved enforceable policies, authorities, and processes related to permitting, public participation in those processes, regulations governing land and water uses, and exclusions from review or standards and the organizational structure to the agencies or other entities with responsibilities and roles for permitting land and water uses. Following the submission of the analysis and review by NOAA's Office for Coastal Management, the Commonwealth and NOAA's Office for Coastal Management will develop a

schedule for the submission of program changes. The schedule will be developed within 60 days of completion of NOAA's review of the analysis.

Necessary Action: Within 60 days of issuance of the final evaluation findings, the Puerto Rico Department of Natural and Environmental Resources must report to NOAA's Office for Coastal Management on the actions taken by the Department of Natural and Environmental Resources (DNER), Permits Management Office (OGPe), and Planning Board (PRPB) regarding efforts to improve the citizen participation, data access, and enforcement coordination under the implementation of the memorandum of understanding (February 2020)¹ between the Department of Natural and Environmental Resources, Permits Management Office, and Planning Board.

Necessary Action: The Puerto Rico Department of Natural and Environmental Resources must fill the coastal program manager position, the Coastal Zone Management-funded attorney position, and any other critical longstanding vacancies. The coastal management program must work to retain employees in positions that allow the program to be implemented including but not limited to permitting, enforcement, administration of funding, and federal consistency. The Department of Natural and Environmental Resources must submit a priority hiring plan to NOAA within 30 days, and a plan to improve staff retention within 90 days of the issuance of this evaluation. Hiring actions must be completed and retention strategies must be employed within 180 days of issuance of this evaluation.

Necessary Action: The Puerto Rico Department of Natural and Environmental Resources must acquire the necessary expertise, such as training existing staff or hiring new staff, to reestablish the maritime terrestrial zone and must ensure that the determination of the maritime terrestrial zone is reestablished to reflect significant changes. Hiring actions, training, and staff retention plans to meet this necessary action must be completed within 180 days of issuance of this evaluation.

Recommendation: NOAA's Office for Coastal Management encourages the Department of Natural and Environmental Resources to continue recruitment for the Ranger Corps and ensure that all Ranger Corps staff is adequately trained and located in areas where enforcement of coastal and marine laws has been deficient.

¹ MEMORANDUM OF UNDERSTANDING BETWEEN THE PUERTO RICO PERMITS MANAGEMENT OFFICE, THE DEPARTMENT OF ECONOMIC DEVELOPMENT AND COMMERCE OF PUERTO RICO, THE PUERTO RICO PLANNING BOARD AND THE DEPARTMENT OF NATURAL AND ENVIRONMENTAL RESOURCES FOR INFORMATION ACCESS, PUBLIC PARTICIPATION AND IMPROVEMENT OF COASTAL ZONE MANAGEMENT PROGRAM DELIVERY: This MOU is signed under the authority of the Puerto Rico Permit Process Reform Act (Act No. 161-2009, as amended), the Puerto Rico Planning Board Organic Act (Act No. 75 of June 24, 1975, as amended), the Organic Act of the Department of Natural and Environmental Resources (Act No. 23 of June 20, 1972, as amended), the Environmental Public Policy Act (Act No. 416-2004, as amended), and the Department of Economic Development and Commerce's Reorganization Act (Plan 4-1994, as amended).

Recommendation: NOAA's Office for Coastal Management encourages the Department of Natural and Environmental Resources to work with the U.S. Environmental Protection Agency and others to facilitate technical support and capacity building to the Permit Management Office, the Puerto Rico Planning Board, and staff of municipal governments to improve implementation and enforcement of stormwater standards and permitting requirements.

Recommendation: NOAA's Office for Coastal Management recommends that the Department of Natural and Environmental Resources review contracting processes, ensure that contracts are issued efficiently and in a timely manner to execute its annual CZMA-funded work plan, and encourage the continued participation of the program's key partners.

Recommendation: NOAA's Office for Coastal Management encourages the Puerto Rico Coastal Zone Management Program to reinstitute opportunities for public education and input.

Recommendation: NOAA's Office for Coastal Management recommends that the Puerto Rico Coastal Zone Management Program develop a continuing program of public education to promote a better understanding of land use regulations in the coastal zone, maintain updated information available for public review, and alert the public to pending permitting actions to improve the public comment process.

Recommendation: The Puerto Rico Department of Natural and Environmental Resources should prioritize the development of enhanced regulations and enforcement mechanisms to ensure that future development does not impact areas that have been restored, including those that are restored using NOAA or other federal funding or that have protected area status.

Conclusion

NOAA's Office for Coastal Management finds that the Puerto Rico Department of Natural and Environmental Resources must complete the necessary actions within the indicated time periods in order to ensure that the Commonwealth continues to adhere to its federally-approved Puerto Rico Coastal Management Program. This finding is based largely on the fact that Puerto Rico has not submitted a response to NOAA's preliminary findings on the major program change related to Law 161, as amended (Program Change Request PR-2015-01).

Program Review Procedures

The National Oceanic and Atmospheric Administration (NOAA) evaluated the Puerto Rico Coastal Zone Management Program in fiscal year 2023. The evaluation team consisted of Ralph Cantral, evaluation team lead; Joelle Gore, chief of the Stewardship Division; Aranzazu Lascurain, Southeast and Caribbean regional lead; and Aurora Justiniano-Santos, coastal management specialist and site liaison. The support of Puerto Rico Coastal Zone Management Program staff members was crucial in conducting the evaluation, and this support is gratefully acknowledged.

NOAA sent a notification of the scheduled evaluation to Secretary Anaís Rodríguez Vega of the Puerto Rico Department of Natural and Environmental Resources on November 3, 2022, published a notice of “Intent to Evaluate” in the *Federal Register* on August 2, 2023, 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 the *Primera Hora* on July 25, 2023.

The evaluation process included a review of relevant documents and a survey of stakeholders, which helped identify three target areas for the evaluation: program administration; hazard mitigation, recovery, and restoration; and management of coastal development. A site visit was conducted and the evaluation team held meetings with staff members and group discussions with stakeholders and program staff members about the target areas. In addition, a public meeting was held on Wednesday, September 20, at 5 p.m. at the Cruz A. Matos Environmental Agencies Building Auditorium, Río Piedras, 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 the opportunity to provide written comments. A summary of the written comments received and the NOAA’s responses are included in Appendix A.

Final evaluation findings for all coastal management programs highlight the program’s accomplishments in the target areas and include two types of findings:

Necessary Actions address programmatic requirements of the Coastal Zone Management Act or its implementing regulations at 15 C.F.R. § 923, and of the coastal management program approved by NOAA, and of the terms of any grant or cooperative agreement funded under the Coastal Zone Management Act. Necessary actions must be carried out by the date specified. Failure to address necessary actions may result in a suspension of financial assistance and withdrawal of approval of the program, as specified in the Coastal Zone Management Act § 312(c).

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

Evaluation Findings

Program Administration

The Puerto Rico Coastal Zone Management Program (PRCZMP) is a networked program² administered by the Department of Natural and Environmental Resources (DNER) and is overseen by the deputy secretary for Management and Conservation of Natural Areas and Biodiversity. As of the time of the evaluation site visit in September 2023, the program manager position was vacant, and the program had not had a permanent director since the departure of the former manager in November 2020.³

Other positions within the program had also been vacant for some time, including an attorney, who is paid with Coastal Zone Management (CZM) funds. The attorney position is located within the Office of Legal Affairs, and the job is to review contracts and advise on maritime terrestrial zone permits, among other things. In addition, the evaluation team learned that the department currently does not have a surveyor. A licensed surveyor is required for the on-site delineation of the maritime terrestrial zone, and an attorney is often needed in determining land ownership related to permitting decisions in areas that are subject to coastal regulations. This is further discussed in the *Management of Coastal Development* section of this findings document.

The evaluation team learned that it is often very difficult for the public to understand the potential impacts from development due to a lack of staff to make these maritime zone determinations. Retaining legal and technical staff in these positions is critical to ensuring that permitting activities are meeting the goals of the coastal management program.

Necessary Action: The Puerto Rico Department of Natural and Environmental Resources must fill the coastal program manager position, the Coastal Zone Management–funded attorney position, and any other critical longstanding vacancies. The coastal management program must work to retain employees in positions that allow the program to be implemented including but not limited to permitting, enforcement, administration of funding, and federal consistency. The

² The Department of Natural and Environmental Resources is the lead agency of the networked Puerto Rico Coastal Zone Management Program and has jurisdictional and managing responsibilities of maritime terrestrial zones, submerged lands, and territorial waters and is also the lead agency for implementation of the Puerto Rico CZMP. The mission of the Program is to guide public and private development in the coastal zone of Puerto Rico, strengthen the active management of coastal resources, and promote research and education as essential elements for the promotion of socially and ecologically sustainable development. The Department of Natural and Environmental Resources is also responsible for environmental compliance regulations of private and public projects in the coastal zone. The Puerto Rico Planning Board is the primary agency regulating and managing land uses in Puerto Rico and is responsible for the review of federal consistency, and the Puerto Rico Permits Management Office (Oficina de Gerencia de Permisos or OGPe) is responsible for the procedural instances related to construction and land use permits in the coastal zone.

³ A new director of the coastal management program was hired in December 2023, but left in 2024, and the program is now being led by an acting program manager.

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Department of Natural and Environmental Resources must submit a priority hiring plan to NOAA within 30 days, and a plan to improve staff retention within 90 days, of the issuance of this evaluation. Hiring actions must be completed and retention strategies must be employed within 180 days of issuance of this evaluation.

Necessary Action: The Puerto Rico Department of Natural and Environmental Resources must acquire the necessary expertise, such as training existing staff or hiring new staff, to reestablish the maritime terrestrial zone and must ensure that the determination of the maritime terrestrial zone is reestablished to reflect significant changes. Hiring actions, training, and staff retention plans to meet this necessary action must be completed within 180 days of issuance of this evaluation.

Similarly, enforcement activities conducted by enforcement officers in the coastal area are a key element for the successes of the coastal zone management program. The evaluation team learned of several areas where the enforcement of laws and regulations has been hampered by a lack of rangers. As an example, the lack of enforcement of illegal development at the Jobos Bay National Estuarine Research Reserve put NOAA and Commonwealth investments at the reserve in jeopardy. The team learned that the shortage of rangers Commonwealth-wide is being addressed through the creation of a new ranger academy. The department's Ranger Corps is a key component of the legal support structure required to effectively enforce coastal zone management laws and regulations. The program completed one training academy for the southern region of the island and is working on developing two additional sessions, one each in the south area and San Juan. The department's Ranger Corps actively conducts surveillance and monitoring activities to ensure that activities taking place within the coastal zone are compatible with designated uses. They also provide security to users of public beaches and vital services during emergencies and natural disasters, serving as a key liaison with the state Emergency Management Office Operations Center. NOAA's Office for Coastal Management recommends continued support of the ranger academy and placement of rangers in areas where enforcement of coastal and marine laws has been deficient.

An additional component to advancing enforcement is supporting the various agencies and entities involved in implementation and enforcement of stormwater standards and permitting requirements. Technical support and capacity building from the Department of Natural and Environmental Resources to the Permits Management Office (OGPe), the Puerto Rico Planning Board, and staff of municipal governments will support existing and future investments in conservation and restoration projects addressing land-based sources of pollution. For example, NOAA, in partnership with other federal agencies and territory partners, has made significant investments in addressing land-based sources of pollution in Culebra. The objectives of these investments in watershed protection and improved water quality in adjacent coral reef ecosystems are threatened by the lack of adequate monitoring of land use activities and enforcement of existing standards and requirements for development.

NOAA's Office for Coastal Management recognizes that the Puerto Rico Department of Natural and Environmental Resources' capacity to develop and deliver this type of capacity building

program may be limited. Additionally, the Department of Natural and Environmental Resources only has authority in a narrow maritime zone, and a large portion of permitting responsibilities beyond the maritime zone is performed by the other networked coastal program agencies, the Permits Management Office, and the Planning Board. Coordination and collaboration are crucial to addressing these cross-jurisdictional issues. Developing partnerships with those organizations and institutions that have expertise in this area could support this capacity building.

Accomplishment: The Puerto Rico Department of Natural and Environmental Resources has recently initiated a new academy to train recruits to the Ranger Corps to more effectively enforce laws and regulations.

Recommendation: NOAA's Office for Coastal Management encourages the Department of Natural and Environmental Resources to continue recruitment for the Ranger Corps and ensure that all Ranger Corps staff is adequately trained and located in areas where enforcement of coastal and marine laws has been deficient.

Recommendation: NOAA's Office for Coastal Management encourages the Department of Natural and Environmental Resources to work with the U.S. Environmental Protection Agency and others to facilitate technical support and capacity building to the Permits Management Office, the Puerto Rico Planning Board, and staff of municipal governments to improve implementation and enforcement of stormwater standards and permitting requirements.

The Puerto Rico Coastal Zone Management Program has undertaken a number of valuable studies and projects during this evaluation period. A number of these efforts are described in the ensuing sections related to coastal development and coastal hazards and in the evaluation metrics section. The success of many of these projects lies in identifying capable outside contractors to accomplish the required tasks. The evaluation team learned that some contractors have been frustrated by unexpected delays in contract approvals and payments for services rendered. As contractual services are the most efficient way to address many of the department's needs, it is essential that the contracting processes be satisfactory to both parties. In response to a previous evaluation finding, the Puerto Rico Coastal Zone Management Program has incorporated changes to funding of legal counsel support under the annual CZMA operations award such that staff resources would be dedicated to reviewing and approving contracts for the program. The approach has not been as impactful as anticipated, in part because of the vacancy in the legal counsel position. Additional challenges have arisen from new territory-wide contracting protocols, which require additional processes and delays decision-making. The contracting process continues to provide challenges both within the program and for external recipients of contracted funding.

Recommendation: NOAA's Office for Coastal Management recommends that the Department of Natural and Environmental Resources review contracting processes, ensure that contracts are issued efficiently and in a timely manner to execute its annual CZMA-funded work plan, and encourage the continued participation of the program's key partners.

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During this evaluation period, the Puerto Rico Coastal Zone Management Program improved administrative procedures to make responding to routine program progress reporting requirements easier. The changes have made the program's responses timelier and, thus, more useful to NOAA and the national coastal zone management program. Notwithstanding these advances, the program has not consistently reported required performance measurement data under NOAA's Coastal Management Program performance measurement system. See the *Evaluation Metrics* section of this findings document for additional discussion on the reporting of metrics and performance data for this reporting period.

Accomplishment: The Puerto Rico Coastal Zone Management Program has significantly improved the quality and timeliness of periodic progress reporting during this evaluation period.

The evaluation team heard from stakeholders that the coastal management program had previously provided a number of opportunities throughout the year for the public to interact with the program, but these engagement activities have not been available in recent years. Annual meetings and online forums were mentioned as methods that had been used in the past. These information-sharing opportunities could help to increase compliance with program requirements and also provide an opportunity for the public to provide input related to program direction.

Recommendation: NOAA's Office for Coastal Management encourages the Puerto Rico Coastal Zone Management Program to reinstitute opportunities for public education and input.

Proposed Changes to the Approved Puerto Rico Coastal Zone Management Program

The most recent revisions to the coastal program that were approved by NOAA were made in 2000. Numerous changes to the administrative structure and enforceable policies and authorities have been made by the Puerto Rico Legislature since 2000, and some changes to the program that were made prior to 2000 have not been submitted as program changes.

Pursuant to section 306(e) of the Act, a coastal state may not implement any change to a management program as part of its management program unless the state submits, and NOAA approves, the change for incorporation into the state's federally approved management program. A state shall not use a state or local government policy or requirement as an "enforceable policy" under 16 U.S.C. 1453(6a) and § 930.11(h) of this subchapter for purposes of federal consistency under 16 U.S.C. 1456 and part 930 of this subchapter, unless NOAA has approved the incorporation of, and subsequent changes to, the state or local policy into the state's management program under this subpart.

For purposes of this subpart, program changes include changes to enforceable policies as well as changes to one or more of the following management program areas under part 923: Uses Subject to Management (Subpart B); Special Management Areas (Subpart C); Boundaries

(Subpart D); Authorities and Organization (Subpart E); and Coordination, Public Involvement and National Interest (Subpart F).

In April 2015, the Puerto Rico Coastal Zone Management Program submitted a request for approval of changes to the federally approved program to reflect statutory changes, including the Puerto Rico Permit Process Reform Act of 2009 (Law 161-2009) as amended. NOAA's Office for Coastal Management issued preliminary findings in November 2016 that determined the proposed changes did not provide adequate opportunity for meaningful public participation in the land use decision-making process and the Commonwealth had not shown it had adequately retained land use decision-making authority over certain permitting responsibilities delegated to private authorized professionals.

The request for approval of the submitted 2015 program amendment was denied without prejudice. In the decision letter, the Office for Coastal Management included an allowance for reconsideration of the decision if the Commonwealth could show how the concerns regarding inadequate notice and opportunity for comment by the public in the land use decision-making process and unresolved issues with the scope of decision-making authority of authorized professionals had been addressed.

To date, Puerto Rico has still not resolved questions from NOAA's Office for Coastal Management regarding the scope of decision-making authority of Authorized Professionals (AP) under the program amendment which was proposed in 2015. Puerto Rico maintains that the AP's authority is limited to "ministerial" decisions in which there is no discretion, but a plain reading of the scope of the AP's decision-making authority, such as the approval of property subdivisions, suggests otherwise. And, while the Department of Natural and Environmental Resources, Planning Board, and Permits Management Office signed an interagency memorandum of understanding (MOU)⁴ to address the public participation concerns, the continual complaints regarding the ineffective management of land uses in Puerto Rico suggest that problems with meaningful public notice have not been effectively addressed.

Moreover, since the 2015 amendment submission, the implementing regulations for Law 161-2009 as amended—the Joint Permitting Regulations—which were not submitted for approval, have been subsequently adopted, revised, litigated, and suspended. In addition, there have been further significant organizational changes to the program involving the Planning Board and Permits Management Office that have not been submitted for approval.

⁴ The MOU was signed in February 2020 between the Department of Natural and Environmental Resources, the Office for Permits Management, the Planning Board, and the Department of Economic Development and Commerce. The purpose of the MOU is to facilitate improvements in the coordination of the implementation of coastal zone management policy, particularly those instances related to citizen participation, data access, and enforcement. The procedures agreed under the MOU are intended to enable the Government of Puerto Rico to actively organize intra-agency information in order to actively monitor coastal resources and provide citizens with the information necessary to understand the rationale behind evaluations, rejections, or approvals of land use permit applications.

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These unresolved issues must be addressed by completing the necessary action below within the required time period.

The federal consistency process created under the Coastal Zone Management Act of 1972 gives the Commonwealth the ability to review federal activities for consistency with the federally approved Puerto Rico Coastal Zone Management Program. The most recent revisions to the coastal program that were approved by NOAA were made in 2000. Changes to the enforceable policies that have occurred since that time, and which have not yet been approved by NOAA, cannot be used for CZMA consistency review purposes. State and territorial coastal programs are encouraged to review legislative and regulatory changes related to coastal programs and submit any changes to enforceable policies for incorporation into federally approved coastal programs.

Necessary Action: Within 180 days of issuance of these findings, the Puerto Rico Coastal Zone Management Program must submit an analysis identifying changes to the program since the submission of the 2015 amendment to the program (PR-2015-1), including how the changes continue to satisfy the applicable program approval criteria of the Coastal Zone Management Act, 16 U.S.C. § 1451 *et seq.*, and its implementing regulations at 15 C.F.R. § 923 Subpart H. The analysis must address any changes to federally approved enforceable policies, authorities, and processes related to permitting, public participation in those processes, regulations governing land and water uses, and exclusions from review or standards and the organizational structure to the agencies or other entities with responsibilities and roles for permitting land and water uses. Following the submission of the analysis and review by NOAA's Office for Coastal Management, the Commonwealth and NOAA's Office for Coastal Management will develop a schedule for the submission of program changes. The schedule will be developed within 60 days of completion of NOAA's review of the analysis.

Hazard Mitigation, Recovery, and Restoration

The Puerto Rico Coastal Zone Management Program focused on increasing the resilience of the Commonwealth and its communities for many years. In 2015, the Office for Coastal Management's evaluation noted the creation of the Puerto Rico Climate Change Council. This group brought together a range of experts who were at the forefront of recognizing climate change as a serious threat and assessing potential impacts. In 2019, the Puerto Rico Climate Change Mitigation, Adaptation, and Resilience Act was passed. The Act created the Committee of Experts and Advisors on Climate Change, a group chaired by the secretary of the Department of Natural and Environmental Resources. The committee is composed of six experts appointed by the governor and confirmed by the legislature and three *ex officio* members: the secretary of the Department of Natural and Environmental Resources, the secretary of the Department of Economic Development and Commerce, and the president of the University of Puerto Rico.

In October 2021, the Committee of Experts and Advisors on Climate Change developed *Courses of Action to Correct, Mitigate, and Prevent the Effects of Climate Change in the Coastal Zone*. This report provided a list of 100 recommended changes to government actions and processes. The governor forwarded the majority of these recommendations to the Department of Natural and Environmental Resources for recommendation. The Puerto Rico Coastal Zone Management Program is currently undertaking a legal review to determine how best to implement the recommendations and add climate impacts as referenced in Puerto Rico's climate planning documents.

The Puerto Rico Coastal Zone Management Program also addressed climate change issues during this evaluation period by funding several projects. A Community Adaptation Guide (*Ruta Hacia La Resiliencia*) was shared with coastal communities throughout the island in 2021. This guide provides step-by-step guidance for communities to become informed of hazards that may impact them, organize themselves (including public and private groups) for cooperation, and develop an adaptation plan that includes both implementation strategies and resources to help achieve their goals.

The coastal zone management program also partnered with the Caribbean Climate Adaptation Network to fund in-depth efforts to lead coastal community residents through a public participation process that would help residents understand their risk and vulnerability and identify ways to adapt to the hazards they face. In 2019, the project focused on the Ocean Park community in San Juan and the Villa Cristiana neighborhood in the town of Loíza. The group worked with the residents to better understand the communities' needs and let the communities decide which adaptation strategies might work best for their circumstances. Unfortunately, the COVID-19 public health emergency interrupted the work, and the project for the Punta Santiago neighborhood in Humacao was not able to be conducted.

Accomplishment: The Puerto Rico Coastal Zone Management Program advanced several efforts to support communities as they worked to develop community-scale climate change action plans.

The Puerto Rico Coastal Zone Management Program has also funded the planning and implementation of a number of large-scale, on-the-ground coastal restoration efforts that support shoreline resilience and habitat restoration. In the community of Isabela on the northwest coast, destruction of a major sand dune system as a source of sand for the construction industry in the 1970s has left the area vulnerable to destruction during coastal storms. The dunes that have reestablished naturally during this period have been crossed by scattered beach access paths that have been overtopped during storms such as Hurricane Maria in 2017, endangering the homes, roads, and natural habitat. The coastal program worked with Vida Marina, the Center for Conservation and Restoration at the University of Puerto Rico, to restore the dunes, plant native grasses, and create elevated walkways over the dunes to eliminate the paths. A key component of the work is to establish baseline data to support future restoration efforts. Similar work is being done in eight additional coastal communities.

A project to restore a mangrove area adjacent to the Isabela dune restoration is attempting to recreate a wetland that was destroyed by overwash from coastal storms. This project was undertaken in cooperation with Protectores de Cuencas, a community-based nongovernmental organization dedicated to protecting and restoring watersheds throughout Puerto Rico. This project will use innovative techniques to create 47 mangrove dispersal islands to replace the mangroves killed during the 2017 hurricanes. Another project with Protectores de Cuencas, which responds to a number of resilience goals, addresses potential storm damage and runoff at Maria's Beach, a heavily used surfing beach in Rincón. This project is located on a steep cliff that was rapidly eroding due to stormwater runoff and uncontrolled public access. The project included a number of green infrastructure techniques and reforestation and also provided improved accessways and new permeable surface parking areas to prevent future damage from overuse.

Accomplishment: The Puerto Rico Coastal Zone Management Program has supported a number of successful on-the-ground resource protection and restoration efforts during this evaluation period.

However, given the challenges the Department of Natural and Environmental Resources continues to have with timely issuance of contracts (as discussed in the *Administration* section), the Puerto Rico Coastal Zone Management Program is missing opportunities to advance the protection and management of coastal resources. Two examples of gaps in programming observed by the evaluation team which result from these challenges include the program's delays in reviewing and approving management plans for marine protected areas and the program's inability to provide a safe and stable environment to provide research, monitoring, and community support to the Jobos Bay National Estuarine Research Reserve. By addressing the recommendations and necessary actions related to program administration (i.e., staffing and enforcement), the department should be able to develop additional capacity to address improvement of hazard resiliency, recovery from impacts of coastal hazards, and implementation of habitat restoration projects that advance the goals of the coastal program.

Management of Coastal Development

Management of development in Puerto Rico is guided by the island-wide Puerto Rico Land Use Plan, which was updated and approved by the Governor in 2015. The administration of the land use plan is guided by the Puerto Rico Planning Board. The planning board also oversees zoning for areas outside of the municipalities that have zoning authority. In addition, in the coastal zone, the Puerto Rico Permits Management Office (OGPe) issues permits to implement the coastal policies. In the maritime terrestrial zone and the marine waters, the Department of Natural and Environmental Resources issues concessions in coordination with the OGPe.

The 2015 evaluation of the Puerto Rico Coastal Zone Management Program contained a necessary action focused on the need for the development of a memorandum of understanding to provide for better coordination in the decision-making process for permits within the maritime terrestrial zone and submerged lands areas.

2015 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.

In 2015, the Permits Management Office and the Planning Board were consolidated into the Department of Economic Development and Commerce of Puerto Rico, and the Environmental Quality Board was placed more directly under the Department of Natural and Environmental Resources. In 2020, the newly aligned agencies signed a memorandum of understanding and submitted it to NOAA. Grant performance progress reports have not reported on implementation since signature. And, the evaluation team did not receive any indication of the extent to which this memorandum of understanding is being implemented and the frequency with which the organizations are meeting to improve coordination.

Necessary Action: Within 60 days of issuance of the final evaluation findings, the Puerto Rico Department of Natural and Environmental Resources must report to NOAA's Office for Coastal Management on the actions taken by the Department of Natural and Environmental Resources (DNER), Permits Management Office (OGPe), and Planning Board (PRPB) regarding efforts to improve citizen participation, data access, and enforcement coordination under the implementation of the memorandum of understanding (February 2020)⁵ between the

⁵ MEMORANDUM OF UNDERSTANDING BETWEEN THE PUERTO RICO PERMITS MANAGEMENT OFFICE, THE DEPARTMENT OF ECONOMIC DEVELOPMENT AND COMMERCE OF PUERTO RICO, THE PUERTO RICO PLANNING BOARD AND THE DEPARTMENT OF NATURAL AND ENVIRONMENTAL RESOURCES FOR INFORMATION ACCESS, PUBLIC PARTICIPATION AND IMPROVEMENT OF COASTAL ZONE MANAGEMENT PROGRAM DELIVERY: This MOU is signed under the authority of the Puerto Rico Permit Process Reform Act (Act No. 161-2009, as amended), the

Department of Natural and Environmental Resources, the Permits Management Office, and the Puerto Rico Planning Board.

A new permitting online portal was developed during this evaluation period. The system was developed by the Permits Management Office and the Planning Board to provide information about permit applications and subsequent decisions by the agencies. This portal provides information about both permits and violations to the Coastal Zone Management Program office in the Department of Natural and Environmental Resources, but the evaluation team learned that this information may not be provided in a format that is useful to the public, as was recommended in the 2015 evaluation.

2015 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** [emphasis added].

Public comments received as a part of this evaluation state that information on the website tends to be incomplete and out-of-date and that the public is not being provided with an opportunity to comment in a timely manner. Some permitting processes provide only a five-day comment period, which is established in statute (Law 161-2009, as amended), which confirms NOAA's concerns raised during the review of the program change submission noted above. This short time period would appear to conflict with section 303(2)(I) of the Coastal Zone Management Act (the giving of timely and effective notification of, and opportunities for public and local government participation in, coastal management decision-making).

Recommendation: NOAA's Office for Coastal Management recommends that the Puerto Rico Coastal Zone Management Program develop a continuing program of public education to promote a better understanding of land use regulations in the coastal zone, maintain updated information available for public review, and alert the public to pending permitting actions to improve the public comment process.

Another concern raised in the public comment process is that the permitting agencies have been reviewing land use applications under an emergency rule following the judicial invalidation of the 2019 and 2020 joint permitting regulations.⁶ [See also the discussion of program updates in the *Administration* section above.]

Puerto Rico Planning Board Organic Act (Act No. 75 of June 24, 1975, as amended), the Organic Act of the Department of Natural and Environmental Resources (Act No. 23 of June 20, 1972, as amended), the Environmental Public Policy Act (Act No. 416-2004, as amended), and the Department of Economic Development and Commerce's Reorganization Act (Plan 4-1994, as amended).

⁶ The Joint Regulation for the Evaluation and Issuance of Permits for Land Use and Development ("Joint Regulation") is the body of rules and requirements under which most permits are issued in Puerto Rico. In 2010, the Planning Board, pursuant to the Puerto Rico Permit Process Reform Act, Law 161-2009, as amended ("Permits

Public comments received as a part of this evaluation expressed concern about the lack of a special protection status for areas that are restored, as existing Commonwealth-wide permitting requirements do not contain specific safeguards for areas that have been restored using public funding. Commenters also expressed concerns about the length of the process for developing management plans for protected areas, which has delayed the implementation of site-specific regulations for these areas.

Recommendation: The Puerto Rico Department of Natural and Environmental Resources should prioritize the development of enhanced regulations and enforcement mechanisms to ensure that future development does not impact areas that have been restored, including those that are restored using NOAA or other federal funding or that have protected area status.

The evaluation team also learned of frustrations with the frequency of determination of the boundaries of the maritime terrestrial zone. The Department of Natural and Environmental Resources is responsible for administering the Official Reference System for the Maritime Terrestrial Zone. Once a determination of boundary has been established, it is in place for five years. Due to a number of factors, including coastal storms and sea level rise, among others, there is a need to frequently update the boundary to reflect current conditions. Such events and desired updates do not conform to a set schedule and stakeholders commented that the five-year interval between the determinations seems excessive.

Reform Act”), adopted Regulation No. 7951, the first version of the Joint Regulation (“2010 Joint Regulation”). On March 24, 2015, the Planning Board adopted Regulation No. 8573 (the “2015 Joint Regulation”). However, the 2015 Joint Regulation was annulled by the Court of Appeals, on December 21, 2016, in the case of *Morales Vargas v. Junta de Planificación*, KLRA201500421, 2016 WL 8454922 (P.R. Cir. Dec. 21, 2016). In response to the nullity of the 2015 Joint Regulation, on March 1st, 2017, the Planning Board issued Resolution No. JP-31-10-2017, where it reverted to the 2010 Joint Regulation. On June 7, 2019, the Planning Board adopted Regulation No. 9081 (“2019 Joint Regulation”). However, the 2019 Joint Regulation was also judicially challenged. On March 6, 2020, the Court of Appeals annulled the 2019 Joint Regulation in the case of *Aequitas L.L.C. v. Junta de Planificación*, KLRA201900413, 2020 WL 4561211 (P.R. Cir. Mar. 4, 2020). The rationale for that decision was that the Planning Board never issued a report to the heads of all the agencies involved in the process prior to the adoption of a joint regulation, as mandated by Section 2.18 of Law 38-2017, known as the Puerto Rico Uniform Administrative Procedure Act, 3 LPRA § 9601 et seq. (“P.R. APA”). In December of 2020 the Planning Board adopted the 2020 Joint Regulation, effective on January 2, 2021, which superseded the 2019 Joint Regulation. The 2020 Joint Regulation was also annulled by the Court of Appeals in two separate cases. In *Comité Pro-Seguridad ARRAQ y ARESA v. Junta de Planificación*, No. SJ2022CV01052, 2022 WL 16952598 (P.R. Cir. Oct. 4, 2022), the promulgation of the 2020 Joint Regulation was found to be invalid due to the lack of an abstract with an analysis of the purpose, costs and benefits of the proposed regulation, and the reasons for its adoption or amendment. In *Fideicomiso de Conservación de Puerto Rico y Para La Naturaleza v. Estado Libre Asociado*, KLRA202100047, 2021 WL 2134567 (P.R. Cir. April 12, 2021) aff’d, 211 P.R. Dec. 521 (2023), the Court of Appeals declared null and void the 2020 Joint Regulation after concluding that the regulatory development and adoption processes carried out by the Planning Board did not satisfy the requirements for broad citizen participation that arise from both P.R. APA and the Permits Reform Act. The notice issued in connection with the public hearings lacked specific information on the content of the proposed regulation and therefore, was insufficient to inform the public regarding the implications of its adoption. The decision of the Court of Appeals was affirmed by the Puerto Rico Supreme Court on June 16, 2023. None of the versions of the Joint Regulation described in this case history were submitted for incorporation into the Commonwealth’s federally approved coastal management program.

As pointed out in the Commonwealth's 2023–2025 Section 309 Assessment and Strategy, there is a need to clarify the criteria for variances, exclusions, and waivers to limit the number of exemptions, variances, and waivers to Maritime Terrestrial Zone setback requirements and other relevant land use regulations (e.g., the Maritime Terrestrial Zone Regulation 4860, Planning Board Regulations 3, 4, and 13, and Joint Permit Regulations Chapter 30). For example, “the Commonwealth has an island-wide coastal development setback standard of 50 meters, or 2.5 times the building height, from the high tide line. However, waivers make this policy ineffective. The standards can be reevaluated if a lot was approved prior to this legislation, if a builder invests money in 'physical improvements for public use,' or if nearby buildings are also nonconforming” (Puerto Rico 2023– 2025 Section 309 Assessment and Strategy).

There is also an opportunity for the Department of Natural and Environmental Resources and the Puerto Rico Legislature to revisit and modernize the definitions of the Maritime Terrestrial Zone in light of sea level rise and climate change and develop a type of model planning ordinance that the Commonwealth or municipalities would administer to provide awareness and understanding to the public and protection to the maritime terrestrial zone, as well as to beaches, dunes, and other geological features of the coastal area. The Puerto Rico Coastal Zone Management Program does not have the necessary expertise on staff (surveyor and attorney) and must secure this expertise to ensure that updates to the maritime terrestrial zone are accurate and completed with legal sufficiency (see the Necessary Action on page 6).

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 the program is meeting the goals and objectives it has identified as important. In 2018, coastal programs began a new five-year period and set targets specific to their programs for two performance measures from the existing Coastal Zone Management Performance Measurement System and the coastal hazards performance measure.

Coastal management programs reported evaluation performance measures through progress reports and through the Office for Coastal Management's performance measures database. However, the evaluation metrics data included here was not regularly or accurately reported through progress reports or in the database. Data presented here was collected in part from progress reporting and database entries as well as from direct reporting from the Puerto Rico Coastal Zone Management Program during the development of these findings by NOAA's Office for Coastal Management.

Evaluation Metrics: 2012–2017

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 the coastal resources and communities. In response to this situation, the Puerto Rico Coastal Zone Management Program (PRCZMP) 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 PRCZMP has initiated the preparation of guidance and adaptation strategies to build resilience into coastal management and formulated adaptation strategies. The guidelines will be completed in one year. Local (municipal) government adaptation plans will be developed using the guidelines adopted by the PRCZMP. To complement this effort, the PRCZMP will develop additional enforceable policies, regulations, and guidelines which 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, 8 of 43 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.

Results:

Year 1	- 0
Year 2	- 0
Year 3	- 0
Year 4	- 7
Year 5	- 0

Total: 7

Discussion: The Puerto Rico Coastal Zone Management Program reported that seven local governments incorporated adaptation strategies into various planning documents. As discussed in the *Hazard Mitigation, Recovery, and Restoration* section of this report, program efforts such as *Ruta Hacia la Resiliencia* contributed to this measure.

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 (5) community projects to reduce risk of coastal hazards.

Strategy: The PRCZMP will employ a participatory approach to examining both local and climate-related threats to coastal communities and local ecosystems. The PRCZMP will identify future scenarios and evaluate vulnerability and risks for which the selected coastal communities should prepare. The PRCZMP, in coordination with local governments, will examine in detail different coastal hazards and risk scenarios, as well as the 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 PRCZMP will provide recommendations to policymakers for coastal communities' adaptation to reduce risk of coastal hazards by 2017. The PRCZMP 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 PRCZMP.

Target: Between 2012 and 2017 five projects completed at coastal communities to reduce risks of coastal hazards with the technical assistance of the PRCZMP.

Results:

- Year 1 - 0
- Year 2 - 0
- Year 3 - 1
- Year 4 - 1
- Year 5 - 2

Total: 4

Discussion: The Puerto Rico Coastal Zone Management Program was successful in completing five projects, one of which occurred outside of the five-year metric period. Five municipal plans for adaptation to climate change were completed for the municipalities of Rincón (2015), Culebra (2016), Dorado (2017), Salinas (2017), and Loíza (2018). These community plans for adaptation to climate change are part of an effort to generate guides that assist municipal governments in the development of community-based plans. The purpose of these plans is to assess the risks and vulnerability of climate changes in coastal communities, thoroughly understand the community planning process for dealing with the risks posed by climate change, and develop adaptation strategies that serve as guides for municipal governments, communities, and businesses.

Metric 3

Goal: Foster sustainable use and management of coastal wetlands 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 habitats (and specifically wetlands) valuation for use by regulatory agencies and the regulated community (i.e., land owners, 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 the coastal resources and communities. An interagency committee co-led by the DNER through the PRCZMP office 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 applications consultation, project review, and decision-making, the adoption of the PR-WAM will improve the management of coastal wetlands resources and its 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 the PR-WAM to improve the management of coastal wetlands between 2012–2017.

Results:

- Year 1 - 0
- Year 2 - 0
- Year 3 - 0
- Year 4 - 0
- Year 5 - 0

Total: 0

Discussion: The Puerto Rico Coastal Zone Management Program completed the activities to meet this metric outside of the five-year reporting period (in 2018). Five federal agencies implemented wetlands rapid assessment under a memorandum of understanding between the U.S. Army Corps of Engineers and the Puerto Rico Department of Natural and Environmental Resources: the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the Natural Resources Conservation Service, the U.S. Forest Service, and the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service.

Evaluation Metrics: 2018–2023

Metric 1

Goal: Reduce threats to life and properties in coastal municipalities through effective communication and outreach, using the best science and information available about coastal hazards and climate change.

Objective: Improve coastal communities’ resilience by informing and providing guidance and self-vulnerability assessment tools about high hazard areas, presenting best adaptation practices for projects proposed at current and potential coastal hazard areas, as well as analyzing, anticipating, and managing the effects of potential sea level rise on these areas.

Strategy: The PRCZMP leads the Puerto Rico Climate Change Council and convenes an annual summit meeting to share the best available scientific knowledge about climate change in Puerto Rico and the U.S. Caribbean. The PRCZMP develops pilot projects, extension services, and workshops, and prioritizes effective adaptation strategies and policies to be implemented to ameliorate coastal hazards in Puerto Rico. As part of this process the PRCZMP anticipates offering training for academia, municipalities, state agencies, and community leaders under the vision of train-the-trainer methods. It is anticipated that there will be 40 to 60 participants at each training.

Performance Measure: Between 2018 and 2023, the number of coastal hazards training events offered by the PRCZMP.

Target: Between 2018 and 2023, eight coastal trainings offered by the PRCZMP.

Results: Year 1 - 5
Year 2 - 0
Year 3 - 0
Year 4 - 4
Year 5 - 6

Total: 15 trainings

Discussion: The Puerto Rico Coastal Zone Management Program exceeded its target, supporting its hazard mitigation efforts in the Commonwealth.

Metric 2

Goal: Support the development of Puerto Rico–wide rising sea level adaptation policies and strategies.

Objective: Design and propose policies that increase the use of Ecosystem-based Adaptation (EbA) and Engineering with Nature approaches for the conservation and restoration of wetlands ecosystem services and functions to reduce coastal risks and build local communities' resilience.

Strategy: The PRCZMP, through in-house resources and professional services contracts, will implement at least four (4) pilot EbA projects to increase protection and adaptive capacity to increase coastal communities' resilience while lowering operations and maintenance costs. Monitoring and evaluation of EbA projects are fundamental to assess the projects' effectiveness but also to have a knowledge base on those initiatives. Sharing of best EbA knowledge is also useful for stakeholders to measure progress and effectiveness, improve techniques, and increase its use. EbA through coastal ecosystems includes diverse habitat types, encompassing both terrestrial and marine habitats. Evaluation of wetland and coastal ecosystem services provides a quantitative value in terms of economy obtained by the ecosystem services. The evaluation and implementation of EbA projects developed in the island will also provide opportunities for the amendment of existing laws, regulations, and benefit-cost analysis methods to prioritize natural infrastructure over structural engineering solutions for wetland and marine enhancement for coastal erosion and management. The PRCZMP annually convenes the Coastal and Marine Planning Symposium focused on the EbA initiatives in Puerto Rico.

Note: Coastal habitat under restoration includes Coastal Zone Management Act Performance Measures 8b, 8d, 8f, and 8h.

Performance Measure: From 2018 to 2023, number of acres of coastal habitat under restoration with assistance from PRCZMP funding or staff.

Target: From 2018 to 2023, 45 acres of coastal habitats under restoration with assistance from PRCZMP funding or staff.

Results:

- Year 1 - 0
- Year 2 - 0
- Year 3 - 0
- Year 4 - 0
- Year 5 – 92.1

Total: 92.1 acres

Discussion: The Puerto Rico Coastal Zone Management Program completed several habitat restoration projects during the five-year period. Restoration activities addressed impacts from development and hurricanes, among others.

Project Location (year completed)	Project Area (acres restored)	Activity/Habitat type
Isabela (2023)	51.9 acres	Mangrove
Papayo (2023)	40 acres	Coastal lagoon (channel reopening)
Rincón (2022)	no acres reported	Beach
Culebra (2023)	no acres reported	Dunes, Forests
Aguadilla (2023–2024)	0.24 acres	Dunes

Metric 3

Goal: Reduce threats to life and properties in coastal municipalities through effective communication and outreach using the best science and information available about coastal hazards and climate change.

Objective: Improve coastal communities’ resilience by informing communities located in high hazard areas, presenting best adaptation practices for projects proposed at current and potential coastal hazard areas and therefore, anticipating and managing the effects of potential sea level rise.

Strategy: The PRCZMP leads the Puerto Rico Climate Change Council and convenes an annual meeting to share the best available scientific knowledge about climate change in Puerto Rico and the U.S. Caribbean. The PRCZMP also develops pilot projects, conducts extension services

and workshops, and prioritizes effective adaptation strategies and policies to be implemented to ameliorate coastal hazards in Puerto Rico.

The PRCZMP will work to improve information available to address coastal hazards along the coast and make it easily accessible. The PRCZMP will also help develop Special Planning Adaptation plans to address coastal hazards. In order to assess the characteristics of each Puerto Rico beach and provide effective scientific and technical guidance, relevant management information, and sustainable and safe use of beaches in Puerto Rico, the PRCZMP has studied and documented coastal geomorphology, beach erosion trends, and public beach access. As part of this effort, the PRCZMP has had meetings with coastal municipalities' mayors and representatives, scientists from DNER, the University of Puerto Rico and CariCOOS, and lead representatives of the U.S. Geological Survey, the U.S. Army Corps of Engineers, and the American Shore and Beach Preservation Association to discuss relevant beach management issues. The results indicate that the main problems on the coast are beach erosion, aquatic safety, and solid waste management. Therefore, it is important to validate and gather relevant geophysical information for the Puerto Rico Atlas using the best tools available, such as GIS and aerial photography using drone technology images of representative geomorphic and biotic features, to illustrate the natural and man-made elements present at each Puerto Rico beach, which will guide the development and conservation of our coasts. Data and information from e-catalog will be used as a basis to assess SLR impacts on coastal and beach resources, assets, and Special Planning Adaptation plans. Special Adaptation Plans are regionally or locally based initiatives, which enable one or more municipalities to identify social-ecological vulnerabilities, assess climate and ocean changes trends, effects, and impacts, and develop adaptation strategies based on projected scenarios to reduce coastal risks and build resilience. All information will be available through the PRCZMP website and an app will be created.

The PRCZMP anticipates that from 2018 to 2023: a) three state-level policies and plans will be completed; b) two local-level policies and plans will be completed; c) zero projects will be completed at the state level; and d) zero projects will be completed at the local level to reduce future damage from coastal hazards with assistance from CZM funding or staff.

Performance Measure: From 2018 to 2023, the number of a) state-level policies and plans completed; b) local-level policies and plans completed; c) projects completed at the state level; and d) projects completed at the local level to reduce future damage from coastal hazards with assistance from CZM funding or staff.

Target: From 2018 to 2023, five a) state-level policies and plans completed; b) local-level policies and plans completed; c) projects completed at the state level; and d) projects completed at the local level to reduce future damage from coastal hazards with assistance from CZM funding or staff.

Results: Year 1 - 0
 Year 2 - 1
 Year 3 - 0

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Year 4 - 1

Year 5 - 1

Total: 3 activities that reduce future damage from coastal hazards completed.

Discussion: The program submitted three activities that meet this metric: (1) Law No. 33 of May 22, 2019, called the "Puerto Rico Climate Change Mitigation, Adaptation and Resilience Act," (2) State of the Climate 2014–2021: Assessing Puerto Rico's Social-Ecological Vulnerabilities in a Changing Climate, and (3) State of Climate educational outreach.

Conclusion

NOAA's Office for Coastal Management finds that the Puerto Rico Department of Natural and Environmental Resources must complete the necessary actions within the indicated time periods in order to ensure that the Commonwealth continues to adhere to its federally-approved Puerto Rico Coastal Management Program. This conclusion is based largely on the fact that Puerto Rico has not submitted a response to NOAA's preliminary findings on the major program change related to Law 161, as amended (Program Change Request PR-2015-01).

These evaluation findings contain four necessary actions that must be completed by the dates given and six recommendations that 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 Zone Management Program, which may have implications regarding the Commonwealth's financial assistance awards or other penalties. However, it does not make any judgment about or replace any financial audits.

Jeffrey L. Payne, PhD
Director, NOAA Office for Coastal Management

Appendix A: Response to Written Comments

Six written comments were received during the public comment period that ended on Friday, September 29, 2023. Comments that were not related to the performance evaluation of the Puerto Rico Coastal Zone Management Program were not considered. Comments are summarized and minimally edited for spelling and punctuation and removal of vulgarities. Copies of the original comments received can be requested from NOAA's Office for Coastal Management.

Commenter #1: Richard Lugo, Arrecifes Pro Ciudad, Inc. (APC)

1. Program Administration

- a. Management plans for the protected areas take too long to develop and implement. In our case, the marine reserve was designated in 2012, and we only have a draft management plan on hand.

Response: NOAA's Office for Coastal Management recognizes the importance of comprehensive, up-to-date plans for the management of marine reserves and encourages the Puerto Rico Coastal Zone Management Program to complete the development of the management plan and support implementation as resources allow. The comment has been forwarded to the Puerto Rico Coastal Zone Management Program.

- b. Law or regulatory enforcement is scarce or nonexistent. The DNER Rangers need technical training and mentorship to effectively protect the coastal resources.

Response: The evaluation findings document recognizes the enforcement challenges faced by the Department of Natural and Environmental Resources and the impacts to the territory's coastal resources and coastal communities. Within the findings, NOAA's Office for Coastal Management includes one accomplishment related to conducting Ranger Academies and one recommendation to continue recruitment to the Ranger Corps and ensure that Ranger Corps staff is located in areas where enforcement of coastal and marine laws has been deficient.

- c. The DNER used to have meetings with all the organizations with whom they had a collaboration agreement. These meetings were very effective in resolving planning and execution issues as they came up.

Response: The recommendation has been shared with the Puerto Rico Coastal Zone Management Program.

2. Hazard Mitigation and Recovery

- a. We need a standard procedure for sand dune restoration and maintenance. This procedure needs to cover the elements of planning, coordination, and execution in a simple way so the communities can take proper action. Right now, the process is an uncoordinated "hodgepodge" of acquiring permits, angered beach business owners, and "devil-may-care" follow-through.

Response: The Department of Natural and Environmental Resources through their CZMP grant has funded several dune restoration projects throughout the northern coast of Puerto Rico, and there are some educational materials about dunes and their ecological importance. However, the coastal management program has not developed references for sand dune restoration and maintenance. NOAA's Office for Coastal Management recognizes that this type of resource would be valuable and that the Puerto Rico Coastal Zone Management Program could have experience, expertise, and a role in developing such materials as resources allow. The comment has been forwarded to the Puerto Rico Coastal Zone Management Program.

Commenter #2: Braulio A. Quintero, PhD, Environmental Defense Fund

1. The EDF commends the creation of the Puerto Rico Coastal Resilience Program but has concerns regarding implementation staffing, budgets, and timelines.
 - a. Revise the project budget and timeline.
 - b. Consider a government-wide approach.
 - c. Track proposed and completed natural infrastructure projects within the planned activities to demonstrate success and plan for funding opportunities.

Response: The recommendations have been shared with the Puerto Rico Coastal Zone Management Program.

2. Regulation, education, and enforcement of coastal laws and policies must be sufficiently staffed and supported by the DNER.

Response: NOAA's Office for Coastal Management agrees, and one necessary action and two recommendations support these actions.

3. Leveraging partnerships to develop place-based "Adaptive Restoration" focused on supporting natural infrastructure plans is an effective step forward.
 - a. Ecosystem-based assessment of coastal wetlands and a full wetlands inventory
 - b. Puerto Rico-specific guidance on NNBI [Natural and Nature-Based Infrastructure]
 - c. Identification of key vulnerability areas for coastal hazards

Response: The recommendations have been shared with the Puerto Rico Coastal Zone Management Program.

4. Underserved communities must be prioritized

Response: The Puerto Rico Coastal Zone Management Program's 2023–2025 Section 309 Assessment and Strategies identifies areas where the program can prioritize supporting underserved communities. For example, the Coastal Resilience Program will promote the implementation of natural and nature-based infrastructure and restoration of natural protective features to reduce coastal hazard impacts to vulnerable and underserved communities, and the program will prioritize restoration efforts that benefit disadvantaged and underserved communities.

Commenter #3: Steve Tamar, Surfrider Foundation, Rincón

Recommendation: NOAA, via the CZMA, should strenuously oppose the imposition of Joint Resolution 2020 provisions within the coastal zone and other areas within their purview.

Response: NOAA's Office for Coastal Management has created a necessary action for the Puerto Rico Coastal Zone Management Program to provide an analysis of program changes and work with NOAA's Office for Coastal Management to submit program changes that can be approved.

Recommendation: Previously the PRCZMP used to hold annual meetings and provide online platforms for questions and discussion—these were very useful tools for researchers, NGOs, and MPA managers to share info, provide early notifications of potential threats or issues to the coastal zone, and organize collaborative research or restoration efforts. They were also an indirect method of gauging CZMP performance and funding effectiveness. These meetings and digital platforms should be reinstituted immediately to regain a needed degree of communication and transparency.

Response: NOAA's Office for Coastal Management has developed several recommendations for the Puerto Rico Coastal Zone Management Program to address educational and technical assistance needs with the public and communities. The recommendation has been forwarded to the program.

Recommendations for Protection and Comanagement of Marine Protected Areas (MPAs) and Natural Protected Areas (NPAs) within the Coastal Zone:

There are dozens of MPAs and NPAs whose comanagement plan drafts have already been developed (frequently based on the Reserve Marina de Tres Palmas (RMTP) in Rincón comanagement plan) but are still waiting for either DNER approval and/or to be legally signed into law— some of them for more than 10 years. The PRCZMP should insist that those Protected Areas and their pending comanagement plans be immediately approved and their legal status granted since all preliminary requirements have already been met.

Response: NOAA's Office for Coastal Management recognizes the importance of comprehensive, up-to-date plans for the management of marine reserves and encourages the Puerto Rico Coastal Zone Management Program to complete the development of the management plan and support implementation as resources allow. The comment has been forwarded to the Puerto Rico Coastal Zone Management Program.

Further, recent research increasingly suggests the most effective management strategy for MPAs as measured by increased species diversity, increased biomass, increased availability of commercially valuable species of harvestable size, etc. is by the creation of a network of smaller MPAs rather than a few large ones. This means that additional MPAs need to be created in the archipelago to maintain ecosystem health and continuity. All future comanaged development must include a mandated time period for approval and granting of legal status. Eighteen (18) months seems a more than adequate time allowance for the finalizing of these administrative tasks since, as explained below, the bulk of actual management duties are organized and conducted by the local comanagement partners.

Response: The comment has been forwarded to the Puerto Rico Coastal Zone Management Program.

Even for MPAs whose comanagement plan has been approved such as the RMTP, the pertinent agencies reserve (or interpret the plan to reserve) exclusive authority, while the daily or critical management and maintenance responsibilities devolve to the local non-agency partners to accomplish. This dichotomy is particularly apparent in the realm of enforcement and response, as we have learned with the RMTP. It is the local partners who most frequently observe or are informed of illegal or damaging activities within or adjacent to the MPA. They then have to confirm that fact and contact and wait for the DNER to respond— which just as frequently does not happen due to lack of available agency personnel, vehicles, other resources, or concurrent commitments. Generally, these activities fall into three categories: illegal 'take' (poaching of marine species); captaincy issues, particularly anchoring or boat discharges within the MPA; land-based dredging, dumping, sand removal; or sediment discharges within the MPA boundaries or buffer zones. ***To address this gap between observation and enforcement, the CZMP itself should sponsor an amendment to all existing and pending comanagement plans to empower the local partners to collaborate with their local and regional police departments to halt activities and/or detain violators until DNER agents can arrive*** [emphasis added]. It is our understanding that this mechanism is already theoretically extant within Puerto Rico law, but has never been exercised. It seems all that is needed is a formalization of that mechanism, which is well within the capacity of the PRCZMP to accomplish. The chapter and Sea Grant Puerto Rico developed several years ago provides a basic blueprint for this type of effort, for example the 'Reef Rangers' initiative, where citizens can be educated in the pertinent regulations (and why they are necessary) and learn how to identify, document, and gather other probative evidence of the actual violations, and how and to whom to notify of violations.

Response: The comment has been forwarded to the Puerto Rico Coastal Zone Management Program for consideration.

Most MPAs and NPAs in the coastal zone also provide recreational and touristic resources which are frequently very valuable to the local economy. This public use component often leads to another subset of violations by the general public or tourists, usually from ignorance or unfamiliarity with the appropriate regulations. These violations are most often dealt with by local comanagement partners verbally at the site, by specific signage, and education and outreach events to orient local residents. As most non-agency partners form a nonprofit entity to accomplish those tasks (for the RMTP this is Amigos de Tres Palmas) and do not receive any funding from the DNER, they must compete for grant funding or organize fundraisers to achieve these basic goals. ***It is suggested that the PRCZMP develop an in-house 'stipend-type' program to disburse small amounts of money to these comanagement nonprofits directly, to help cover the costs of printing educational materials, installing interpretive signs, etc., as well as conducting at least one reasonably large outreach or education event per year for their local community concerning their local Protected Area*** [emphasis added]. Such a stipend program would involve less than 4 percent of the current CZM budget allocation for Puerto Rico of about \$2.5 million per year, but the add-on benefits would be enormous. As our experience with the oldest comanaged MPA in Puerto Rico has shown, if the local partners include their local

community in the decision-making process, the maintenance efforts, and the research and monitoring projects, then the community as a whole develops a sense of 'ownership' of the PA and it becomes mostly self-policing. This is literally the single most cost-effective strategy for protecting resources and avoiding the majority of legal or regulatory problems in the first place.

Response: The comment has been forwarded to the Puerto Rico Coastal Zone Management Program.

Commenter #4: F. Inserni, Arrecife Condado, Inc.

Comment 1: The nonprofit corporation I preside over, Arrecife Condado, Inc (a 501c), holds a December 22, 2022, U.S. Army Corps of Engineers (USACE) permit for its building, but we are in a stalemate because FEMA couples the funding for it with a coral restoration project that does not have a USACE permit, which is not related to or affecting our project at all due to their distance and nature.

Our project, which has a comanagement agreement with the DNER, is being unnecessarily delayed by the DNER who (so far) will neither provide a concession for it nor request that funding by FEMA be allocated for the building of the breakwater forthwith.

Response: NOAA's Office for Coastal Management encourages the Puerto Rico Department of Natural and Environmental Resources to work and coordinate with local nongovernmental organizations (NGOs) to implement coral restoration work in the Condado area. The comment has been forwarded to the Puerto Rico Coastal Zone Management Program for consideration.

Comment 2: Two persons in present, daily life who experience Puerto Rico and know of true and serious violations of the maritime terrestrial zones around the island are architect Pedro Cadona, also known as "El Urbanista," and environmental activist Eliezer Molina. Both are in close contact with communities and people living on the coast confronting issues with pollution and destruction of public lands (the MTZ; in Spanish, the ZMT).

Response: The comment has been forwarded to the Puerto Rico Coastal Zone Management Program for consideration.

Commenter #5: Alfredo Montañez, Community Advisory Board for the Collaborative Management of Canal Luis Peña Natural Reserve

Comment 1: The Commonwealth of Puerto Rico has not been able to effectively preserve and protect the archipelago's coastal ecosystem.

Response: The Puerto Rico Coastal Zone Management program has established a new academy of rangers, and NOAA's Office for Coastal Management encourages and supports the Department of Natural and Environmental Resources academy to train recruits to the Ranger Corps to more effectively enforce coastal zone management laws and regulations.

Comment 2: The Commonwealth's permitting process has prioritized economic growth over environmental protection.

Response: NOAA's Office for Coastal Management's evaluation of the Puerto Rico Coastal Zone Management Program reviewed the permitting process through the lens of capacity (staff) and changes to the federally approved program. The perceived or actual prioritization of activity types was not part of the assessment. NOAA's Office for Coastal Management, in its analysis of changes to the permitting process and in its review of a new program change action, will review to ensure that the changes are consistent with the CZMA and its implementing regulations, including addressing the coastal management needs identified in section 303(2)(A) through (K) of the Coastal Zone Management Act.

Comment 3: The PRCZMP has not been able to ensure a sustainable coastal development; they have not effectively managed public lands and waters nor have they been able to effectively guide development in public and private property.

Response: NOAA's Office for Coastal Management supports and encourages the PRCZMP to promote actions that protect and effectively manage coastal public trust lands, coastal and marine habitats, and resources, such as beaches, dunes, wetlands, and coral reefs among other important habitats and natural infrastructure features of the coast. Through NOAA's cooperative agreements, funds are allocated for the conservation, management, and restoration initiatives that contribute to improve public access to coastal areas and beaches. In collaboration with other NOAA-funded programs, such as the Puerto Rico Coral Reef Conservation and Management Program, CARICOOS, the National Weather Service, and Sea Grant, the Department of Natural and Environmental Resources works to implement activities that build resilience and promote best knowledge and science-based decision-making. NOAA will provide continuous support to the PRCZMP to encourage diverse uses on beaches and coasts while avoiding conflicts between users and without compromising the integrity of the resource.

Comment 4: There is importance and urgency in taking action towards the effective and sustainable management of Puerto Rico's coastal ecosystems after the 2017 hurricane season.

Response: The Puerto Rico Coastal Zone Management Program has the responsibility to improve public understanding of coastal hazards and coastal dynamic systems and how these affect people's lives. The Department of Natural and Environmental Resources is currently using technology to disseminate information on coastal wetlands protection and coastal hazards. The agency also collaborates with the Committee of Experts and Advisors on Climate Change.

NOAA supports and encourages the coastal management program to increase the use of Ecosystem-based Adaptation (EbA) approaches for the conservation and restoration of coastal ecosystem services and functions. As part of NOAA's Section 309 Assessment and Strategy 2023–2025, coastal wetlands conservation is one of the topics identified as having the highest management needs for undertaking work. NOAA promotes the implementation of natural and nature-based infrastructure (NNBI), and restoration of natural protective features to reduce the impacts to vulnerable ecosystems and communities from coastal hazards, while enhancing habitats for fish and wildlife and overall ecosystem resilience.

Commenters #6: Luz A. Crespo Valentin and Fernando E. Pabón Rico, Puerto Rico Science, Technology and Research Trust

Recommendation: Let's develop adaptation plans. The survival of communities and infrastructure in coastal areas requires the implementation of comprehensive measures that improve their adaptability with a view to an eventual strategic withdrawal. This begins with the development and maintenance of flood adaptation guidelines and plans based on a wide range of scenarios tailored to each community. Beyond considering measures to temporarily accommodate elevated sea level due to storm surge or runoff flooding, these should include specific strategies based on various projections of sea level rise (SLR). For example, these guidelines can define actions and strategies to adapt to a rise of 1.25 feet by 2050 and 3.58 feet by 2100 as an intermediate rise scenario and others for a projection of an intermediate-high rise scenario of 1.80 feet by 2050 and of 5.94 feet by 2100. However, extreme and abrupt change scenarios, such as increases of 1 foot every ten years, must also be considered and accommodated. SLR scenarios cannot be ruled out outside of current projections, as the reality of climate change has revealed more catastrophic scenarios than we have been able to anticipate, and it is likely this trend will continue. Given the threat of saline intrusion into aquifers, guidelines should also offer specific recommendations to prolong the life of this vital resource. They should include investments in technologies to remotely monitor aquifers and new standards for well construction.

We suggest that these plans be made in collaboration with all interested parties, including universities, experts, scientists, and community members. A community-driven assessment can also empower local residents to actively participate in decision-making processes through community workshops, training initiatives, and creating spaces for ongoing dialogue. This initiative will facilitate the integration of an informed decision process into the Program to develop solutions that fit local needs that avoid exacerbating risks. It will also promote environmental justice, a transversal value in all federal agencies, as stated in Executive Order 14096.

Furthermore, these adaptation plans must investigate where and how strategic withdrawals should be carried out since their implementation can take decades. Integrating this approach into a sensible plan offers a proactive and pragmatic path to addressing the continuing challenges posed by climate change. Strategic retreat recognizes the inevitability of coastal erosion, SLR, and the increased frequency of extreme weather events and seeks to strategically relocate or adapt vulnerable communities and critical infrastructure to avoid disasters. This can improve the long-term resilience of our coasts, protect lives, resources, and property despite catastrophic events, and preserve natural ecosystems, even if in a new space.

Response: The Puerto Rico Coastal Zone Management and Climate Change Program (PRCZMCC) plays an imperative role in the protection of Puerto Rico's coastal areas with particular emphasis on its economic, social, and ecological values. In 2023, the government of Puerto Rico issued an emergency executive order (2023-009) as a response to the effects of coastal erosion and its related aspects within Puerto Rico. As part of the executive order, the Department of Natural and Environmental Resources must update the program to consider the effects of

climate change on coastal zones within Puerto Rico. Through NOAA's Coastal Zone Management Cooperative Agreement, the Department of Natural and Environmental Resources will work on integrating climate change adaptation considerations into its PRCZMP policies, plans, and programs. The department is currently requesting support for the revision and analysis of laws, regulations, and processes related to the coastal management program. NOAA encourages the Coastal Zone Management Program to work with all relevant stakeholders to discuss and clarify all findings. A final product will be drafted that will contain the proposed coastal management program document update and review.

Recommendation: Let's be proactive in policy development. We recommend that the Department of Natural and Environmental Resources (DRNA) can define measures to implement to promote public policies that facilitate the fulfillment of its responsibilities. This agency has the ability to provide valuable perspectives in developing legislation and regulations that are based on science and the best available evidence. The DRNA, through its expertise, will be able to contribute proactively in creating legislation that reflects best practices, including understanding and managing the dynamic reality of the maritime terrestrial zone, zoning that takes into account rising sea level projections, and construction standards that consider risks for vulnerable projects between 2050 and 2100.

Response: The comment has been forwarded to the Puerto Rico Coastal Zone Management Program for consideration.

Recommendation: Let's implement projects based on ecosystems. These are crucial to achieving the adaptation goal. We recommend putting more effort into mangrove reforestation, coral reef restoration, and dune fortification, as well as planting deep-rooted vegetation in buffer zones. These measures provide natural and cost-effective protection against various risks—such as storm surges, coastal erosion, SLR, floods, and landslides—while improving biodiversity, water quality, and coastal stability.

Response: The evaluation findings document several activities conducted or supported by the Puerto Rico Coastal Zone Management Program that addresses restoration and hazard resilience. In particular, see the evaluation metrics section that provides specific examples. NOAA's Office for Coastal Management recognizes the success that the program has had in this area and will continue to work with the program through operations awards, Section 306 Assessment and Strategies updates, and other mechanisms to advance these types of ecosystem projects.

Recommendation: Let's establish community oversight bodies. The adaptation of coastal areas is also closely linked to the reduction of inappropriate construction. The Program must define steps to implement more effective supervision measures on the coast together with coastal communities, which have already shown interest and commitment to coastal protection. Puerto Rico government agencies and nongovernmental organizations (NGOs) can collaborate with local community groups to establish cost-effective community-based surveillance programs that include training and tools for reporting suspicious activity.

Response: The findings document includes a recommendation that the Puerto Rico Coastal Zone Management Program develop a continuing program of public education to promote a better understanding of land use regulations in the coastal zone.

Recommendation: Let's increase the exchange of knowledge and data. To strengthen coastal management, there is also an urgent need to increase the exchange of knowledge and data. Accessible data facilitates informed decision-making and community participation. For this reason, we recommend the development of a digital platform or public database that provides updates and data on coastal management efforts and SLR-related hazards by region. Increased knowledge includes the periodic updating of the cartography of the maritime-terrestrial area using geospatial technologies. Those currently available allow effective monitoring and management of coastal areas close to real time.

Response: NOAA recognizes the importance of information exchange, education and outreach, and technical assistance to further the goals of coastal management. This findings document includes discussion on education and public input, and there is one recommendation in the *Program Administration* section that addresses this.

Appendix B: Reporting on Previous Evaluation Findings

Puerto Rico Coastal Management Program

Findings Published: December 2015

2 of 2 Necessary Actions: Complete

4 of 4 Recommendations: In Progress

Necessary Action

Part 1: Due December 31, 2016

Part 2: Due June 20, 2017

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 mechanisms must be submitted by June 30, 2017.

Part 1: Complete 2018 (deadline missed)

The Puerto Rico Coastal Zone Management Program developed a draft Memorandum of Understanding that was presented to NOAA's Office for Coastal Management (lead of the Southeast and Caribbean region and the federal consistency specialist of the stewardship division) for initial review and comments. The draft memorandum was reviewed and formally submitted via email requesting official comments. NOAA's Office for Coastal Management produced an initial set of comments indicating that the memorandum contained the fundamental aspirations but lacked implementation mechanisms. A second draft memorandum: *Memorandum of Understanding Between the Permits Management Office, the Puerto Rico Planning Board, the Department of Natural and Environmental Resources, and the Environmental Quality Board for Information Access, Public Participation and Improvement of Coastal Zone Management Program Delivery* was submitted to the chief of the stewardship division and copies to the lead of the Southeast and Caribbean region and the federal consistency specialist of the stewardship division. NOAA's Office for Coastal Management provided comments on the second draft. The coastal program subsequently submitted NOAA's comments to the Department of Natural and Environmental Resources' Legal Affairs Office for final review before submitting it to the Puerto Rico Planning Board, the Environmental Quality Board, and the Permits Management Office for review and comments.

Part 2: Complete February 2020 (deadline missed)

Participant agencies agreed on mechanisms and procedures to improve coordination, enforcement, and information dissemination as well as to ensure meaningful public participation. The memorandum was signed by leaders of the Department of Natural and Environmental Resources, Permits Management Office, Puerto Rico Planning Board, and the

Department of Economic Development and Commerce and submitted electronically to NOAA's Office for Coastal Management on February 21, 2020.

Necessary Action: The Puerto Rico Coastal Zone 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.

Complete 2018: The coastal program has implemented assurance mechanisms to guarantee that all coastal zone management funded products show 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.

In Progress: Per established necessary action 1 of the Coastal Zone Management Act 312 Final Evaluation Findings, the Puerto Rico Coastal Zone Management Program prepared the draft Memorandum of Understanding reviewed by NOAA's Office for Coastal Management Stewardship Division that includes actionable actions and implementation mechanisms to facilitate a series of improvements in the coordination of the coastal zone management, particularly those instances related to citizen participation, data access, and enforcement. The procedures agreed to under this memorandum of understanding will facilitate and enable the government of Puerto Rico to actively organize intra-agency information in order to actively monitor and enforce laws conserving coastal resources and provide citizens with the information necessary to understand the rationale behind evaluations, rejections, or approvals of land use permit applications and provide timely access to permit information for permittees, enforcement officers, and members of the public. The memorandum of understanding establishes the basis to provide clear rationales for permit decisions. Law 19 (2017) amended the new Puerto Rico Permits Law or Law 161 (2009, as amended). Article 9 of Law 19 amends Article 2.7 of Law 161 and creates a Unified Information System permitting systems to provide timely access to permit information for permittees, enforcement officers, and members of the public.

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 resolutions in a technology-based system, analyze the data to understand what the issues are, and 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 indicate 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.

In Progress: The Department of Natural and Environmental Resources, through the Puerto Rico Coral Reef Conservation and Management Program, completed the development of the Rangers Corps Strategic Plan. As part of the implementation of the plan, joint training with enforcement staff of relevant department units and regional offices were conducted. Based on the recommendations of the strategic plan and the evaluation and analysis of the Ranger Corps (2015–2020), the department initiated the implementation of actions geared toward the transformation of the Rangers Corps. This process is led by a special assistant of the department secretary and the department's Rangers Corps commissioner.

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.

In Progress: The Puerto Rico Coastal Zone Management Program serves as coordinator of the Puerto Rico Climate Change Council. As part of NOAA Grant NA11NOS4190162, the coastal program completed the development and published the first Puerto Rico State of the Climate report (2010–2013), *Assessing Social-Ecological Vulnerabilities in a Changing Climate*, and through NOAA Grant NA12NOS4190172, the program completed and published *Road to Resilience: A Climate Change Adaptation Guide for Puerto Rico*. The guide includes recommendations that have been incorporated into the Puerto Rico island-wide land use plan and seven hazard mitigation plans. The coastal program completed the five municipal adaptation plans and met its target for one of the NOAA-approved Section 312 metrics. The Office for Coastal Management also oversees the Puerto Rico coral program. Both the coastal program and the coral program have funded multiple green infrastructure projects to reduce pollutant loadings to coastal waters and are currently developing two additional projects to reduce coastal communities and infrastructure vulnerability using nature-based infrastructure.

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.

In Progress: The Puerto Rico Coastal Zone Management Program was adopted in 1978 as the

coastal element of the Puerto Rico Land Use Plan. Since its adoption, public access has been a key subprogram of the Department of Natural and Environmental Resources' Office for Coastal Management. The coastal program's public access activities seek to guide public and private development within the coastal zone while ensuring ample and free access to coastal public trust lands, beaches, and territorial waters. Public access within urban and rural areas is clearly regulated through the Puerto Rico Planning Board's Joint Regulation for Construction Permits and Land Use. The regulation establishes vehicular and pedestrian access requirements for new developments and recognizes traditional access points. The coastal program has conducted public perception studies about coastal and beach access. Through coastal zone management funding, the coastal program updated the inventory of beaches of Puerto Rico and assessed beach erosion trends. A total of 1,225 playas, or 60 percent, face moderate to severe erosion, and 40 percent are relatively stable or accreting.

Appendix C: Preliminary Findings

PRELIMINARY FINDINGS BY THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'S
OFFICE FOR COASTAL MANAGEMENT ON PROPOSED AMENDMENTS TO THE PUERTO RICO
COASTAL ZONE MANAGEMENT PROGRAM — November 2016

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