



October 28, 2020

The Honorable Jared Huffman
Chair
Subcommittee on Water, Oceans, and Wildlife
Committee on Natural Resources
U.S. House of Representatives
Washington DC 20515

Dear Congressman Huffman,

Thanks for inviting me to testify before the Subcommittee on Water, Oceans and Wildlife's oversight hearing: "Environmental Justice for Coastal Communities: Examining inequities in Federal Grantmaking".

Below please find answers to follow-up questions for the record presented by Rep. TJ Cox (CA) and Resident Commissioner Jenniffer González-Colón (PR):

Questions from Rep. TJ Cox of California

1. In your testimony, you shared with us that coral reefs provided effective protection from 97% of the incoming wave energy associated to hurricane Maria storm waves. In general, what other types of ecosystem services or conservation efforts should the federal government consider supporting in the case of Puerto Rico?

During my testimony I focused on the ecosystem services of coral reefs and natural infrastructure as critical for risk reduction and adaptation to changing ocean conditions, sea level rise and more frequent and intense storms. To that effect all initiatives to protect, restore or enhance these systems will contribute to protect lives and properties by reducing storm impacts, direct wave attack and reducing floods.

As discussed through my testimony healthy coral reefs are among the most biologically diverse and economically valuable ecosystems on earth, providing valuable and vital ecosystem services. Coral ecosystems are important for commercial and recreational fisheries providing habitat, spawning and nursery grounds for economically important fish species; recreation, tourism and reefs protect coastal communities and infrastructure from storms and erosion.

Other natural systems providing important ecosystems services to Puerto Rico's society are beaches, dunes, and coastal wetlands. Beaches serve as habitat for benthic animals, microalgae, refuge and forage area for crabs and wading shorebirds. Beaches also provide natural shoreline protection by forcing waves to shoal and break before reaching the upland. Dunes serve as protective barriers from flooding and erosion providing reservoirs of sand to replenish the beach zone. Investments in protecting and restoring these natural features would help to protect Puerto Rico's coastal communities. Additionally, investments in natural and nature-based features in the protection of coastlines instead of hardened structures will allow for a more adaptive coastline while also mitigating coastal hazards.

To advance these efforts, Congress can support programs that are working in these areas by providing robust funding and reauthorization for the Coastal Zone Management Act (which was last authorized in 1999), the Coral Reef Conservation Act, and the Water Resources Development Act, among other.

2. You conclude that local leadership and capacity building will be essential in the process of upgrading the Island jurisdictions' capacity to meet Grant requirements. What kinds of training programs might be best effective to empower the local communities with tools to fight back against the effects of climate change?

Puerto Rico's response to Hurricane María (2017) unveiled the fragility of our infrastructure and the vulnerability of great portions of our population. Other islands and U.S. territories face the same type of risks which continue to worsen as sea levels rise and more powerful storms affect our islands. Puerto Rico and other Island jurisdictions need to build resilience and capacity at multiple levels. My testimony and answers focus on coastal communities' resilience and the need to proactively adapt to rapidly changing scenarios and adopt best ocean practices¹. I would also like to note that the NOAA Office for Coastal Management leads a robust series of trainings targeted towards coastal zone managers and the public on a range of topics including risk communication, adaptation planning for coastal communities, nature-based solutions for coastal hazards, fostering behavior change in coastal communities, etc. Investments in expanding the capacity to provide these trainings would certainly be beneficial. Coastal and ocean observing, as well as best ocean practices are essential to protect coastal and marine resources, economic opportunities and sustainability.

In addition, the combination of key data and tools is essential to being able to inform State and Territory coastal zone management. However, often the data, and in particular the tools, are not at fine enough of a scale for State and Territory to use. As a result, the State and Territory CZM Programs often need to supplement these

¹ Pearlman J, Bushnell M, Coppola L, Karstensen J, Buttigieg PL, Pearlman F, Simpson P, Barbier M, Muller-Karger FE, Munoz-Mas C, Pissierssens P, Chandler C, Hermes J, Heslop E, Jenkyns R, Achterberg EP, Bensi M, Bittig HC, Blandin J, Bosch J, Bourles B, Bozzano R, Buck JJH, Burger EF, Cano D, Cardin V, Llorens MC, Cianca A, Chen H, Cusack C, Delory E, Garelo R, Giovanetti G, Harscoat V, Hartman S, Heitsenrether R, Jirka S, Lara-Lopez A, Lantéri N, Leadbetter A, Manzella G, Maso J, McCurdy A, Moussat E, Ntoumas M, Pensieri S, Petihakis G, Pinardi N, Pouliquen S, Przeslawski R, Roden NP, Silke J, Tamburri MN, Tang H, Tanhua T, Telszewski M, Testor P, Thomas J, Waldmann C and Whoriskey F (2019) Evolving and Sustaining Ocean Best Practices and Standards for the Next Decade. *Front. Mar. Sci.* 6:277.doi: 10.3389/fmars.2019.00277

data and tools with additional local data collection and tool development to meet our needs. Investments not only in more fine scale data at a federal level, but also in working with states, territories, and local communities to tailor tools to meet needs will be critical to planning for the adaption to climate change and the mitigation of impacts.

Questions from Rep. Jenniffer González-Colón of Puerto

1. Leaving aside the Federal Emergency Management Agency (FEMA), are there specific coastal protection grant programs that Puerto Rico is not taking full advantage of right now? Or not even applying for? Why?

As presented in my testimony, Puerto Rico as most insular jurisdictions do not pursue federal funding opportunities. The great majority of coastal managers and staff salaries are funded 100% through federal funds, therefore limiting opportunities to use them In-kind matching and committing personnel to lead or implement new projects. Waving matching requirements or enabling mechanisms to allow the leverage of federal funds with other related and federally funded programs would aid in the pursuit of new federal funding streams.

In addition, as a Member of the Coastal States Organization (CSO) that represents the nation's coastal States and Territories I would like to touch on how this issue is affecting not just Puerto Rico. CSO conducted a survey of the state and territory coastal zone management programs and found that approximately a third of the states and territories had not applied to federal grant programs providing funding resources for coastal management related efforts (coastal resilience (NCRF), restoration, hazard mitigation, wetlands conservation, etc.) because of the inability, either actual or perceived, to meet the match/cost share requirements of the grant programs.

Other specific programs that states/territories noted that they had abstained from applying to for this reason include:

- FEMA Hazard Mitigation Grants (25% match requirement)
- FEMA Pre-Disaster Mitigation Grants
- USFWS Wetlands Conservation Grants (25%)
- EPA Wetlands Program Grants (25%)
- USACE CAP 103, beneficial use program (35%)
- NFWF Grants (National Coastal Resilience Grants) (50%)
- NOAA resilience grants (Regional Coastal Resilience Grants, Habitat Restoration Grants) (50%)
- NOAA Coastal Management Fellows (\$15,000 not in-kind, non-federal source)
- NOAA CELCP Grants (50%, waiver available for low-income, underserved, small, etc. communities)

2. What are some of the biggest obstacles you've faced in accessing these and other grants for coastal conservation efforts? I know in your testimony you discuss that providing the non-federal matching requirement can often be a challenge.

As noted above, match requirements present a significant challenge to accessing federal funding. Insular jurisdictions also face staff challenges to prepare competitive grant applications. I will expand on this issue as part of response to 3.a.

I would like to touch on a current, COVID-19 related issue with match requirements for the Coastal Management Grants that support the State and Territory CZM Programs, including Puerto Rico's program. Specifically, in the current COVID-19 pandemic there are disparate impacts upon the states and territories affecting their ability to meet their Coastal Zone Management Grant requirements which they match 1-for-1. At least 15 States have identified that they will, or are expecting that they will, not be able to meet their match requirements for the CZM grants due to the pandemic's impacts on state budgets and traditional sources of revenues used to meet this match requirement. And unlike many other grant programs, the Secretary of Commerce/NOAA is not authorized under the Coastal Zone Management Act to waive any portion of match requirements for any reason. As a result, the States will not only lose the funding that they would normally provide as match, but also the corresponding already appropriated federal funding. This not only erodes the ability of the programs to execute their mission to execute on the ground coastal zone management work that supports both the environment and local economies, but also in some cases is potentially threatening the long term viability of these programs in their states.

To address this issue, the Coastal States Organization supports the passage of language, such as was passed by the House in the most recent [Heroes Act](#) on October 1st, that would authorize the Secretary of Commerce to waive, in whole or in part, the matching requirements under sections 306 and 306A which they match 1-for-1, and the cost sharing requirements under section 315, of the Coastal Zone Management Act of 1972 (16 U.S.C. 1455, 1455a, and 1461 respectively) as necessary for fiscal years 2020, 2021, and 2022 upon written request by a coastal State.

3. Beyond meeting the non-federal match requirement, I believe one of the biggest challenges we face in Puerto Rico when it comes to accessing federal grants, particularly competitive grants, is that often communities and organizations on the Island are not even aware that a particular program exists or is available.

a. Is this something you've seen or experienced yourself? Please discuss.

Most coastal programs fund salaries through federal grants. Staff is typically committed 100% to implement specific grants' project activities, leaving little or no capacity to write proposals. Partnering with Academia and private nonprofit (PNP) organizations have proven to be an effective alternative to successful proposal writing.

b. In your opinion, should federal agencies invest more in raising awareness about funding opportunities, building capacity among potential applicants, and simplifying the grant application processes? Would such actions help increase coastal communities' access to federal grants?

There are several actions which the federal government could take to improve access to federal grants, particularly for underserved or disadvantaged communities.

Improving federal funding opportunities (FFO) notifications and simplifying grant applications would certainly reduce the burdens on these programs in attempting to access these federal resources. Additionally, staff within these CZM programs (as well as other external grant applicants) may not be trained in grant writing and may not know how to prepare proposals that can be competitive. Providing grant writing assistance through funding to hire grant writers for underserved communities or direct and hands-on technical assistance from the agencies, would help underserved communities to be able to compete for federal resources.

4. In your written testimony, you mention that the Puerto Rico Department of Natural and Environmental Resources (DNER) submitted two projects to FEMA under Section 428 (Public Assistance) and 44 Letters of Intent under Section 404 (Hazards Grant Mitigation Program) to repair and mitigate hazards through natural and nature-based infrastructure.

a. Could you provide my office the information on the two specific DNER/Puerto Rico Central Office for Recovery, Reconstruction, and Resiliency (COR3) project worksheets you mention in your testimony, to see how we can help follow up and expedite the process?

After Hurricane María, DNER prepared and submitted two applications for FEMA Public Assistance:

1. Restoration of Puerto Rico's coral reefs affected by hurricane forces – Section 428 - PA Category "G" for \$31,000,000. Status: FEMA prepared a Policy Advisory but has not determined eligibility of coral reefs for public assistance. Puerto Rico has played a key role within the U.S. Coral Reef Task Force in promoting coral reefs interventions to build coastal resilience and reduce the cost of future disasters.
2. Repair of Culebra's coral nurseries destroyed by Hurricanes Irma and Maria forces. Section 428 – PA for \$5,000,000. Status: DNER formally submitted this project to COR3 and this Office submitted the project to FEMA. FEMA has not made a final determination of eligibility on this project.

DNER also submitted 44 Letters of Intent (LOI) to COR3 under FEMA's Section 404 Hazard Mitigation Grant Program for a total of \$85,000,000. COR3 approved two (2) LOI to move forward:

1. San Juan Metro Coral Barrier Restoration - \$10,325,000
2. San Juan Sand Dunes Stabilization - \$500,000

b. You mention requests by DNER for FEMA funds – to your knowledge, is DNER also submitting proposals for the long-term Community Development Block Grant – Disaster Recovery (CDBG-DR) funding plan.

I have no personal knowledge of any DNER proposals submittals for long-term CDBG-DR nor CDBG-MIT funding. These programs offer great opportunities to build coastal communities' resilience and reduce risks, ameliorate coastal hazards and develop sea level adaptation strategies.

5. Over the past couple of years Puerto Rico has been allocated approximately \$2.5 million annually under Sections 306, 306A, and 309 of the Coastal Zone Management Act.

a. As Director of the Island's Coastal Zone Management Program, could you briefly discuss the importance of this National Oceanic and Atmospheric Administration (NOAA) funding program for coastal jurisdictions like Puerto Rico, and what kind of activities are you able to support and carry out because of these grants?

The Coastal Zone Management Program (CZM Program) is a partnership between the National Oceanic and Atmospheric Administration (NOAA) and coastal states and territories. The Puerto Rico CZM Program, like the other State and Territory Programs, takes the lead in managing coastal resources and works closely with local communities to:

- Provide planning, financial, and technical assistance
- Protect natural resources
- Manage development in high hazard areas
- Ensure coastal-dependent uses receive development priority
- Coordinate state and federal actions to create permit and regulatory efficiencies
- Plan and adapt to future sea level scenarios

The Puerto Rico CZM Program:

- Provides funding, technical assistance, planning, and implementation support for coastal communities to reduce disaster impacts, saving lives and money and defending a robust national economy from evolving coastal hazards. Manages the vital living resources that sustain our coastal economies through ecosystem conservation and management with prudent coastal development – ranging from working with industry to plan and site innovative aquaculture projects, to protecting the estuarine habitats that sustain commercial and recreational fisheries, to conserving the coral reefs and beaches that drive coastal tourism,
- Provides funding, planning support, technical assistance, and critical interagency coordination services for coastal communities to improve public access, restore natural coastal systems, and plan for multiple use of coastal resources. In each state and territory, these programs balance consumptive use with conservation to improve quality of life and economic vitality, and
- Leads the Puerto Rico Climate Change Council (PRCCC) in close collaboration with the USDA Climate Hub, Puerto Rico Sea Grant, and CARICOOS and over 100+ scientists, planners, engineers, architects, social scientists, federal and Puerto Rico agencies, public and private universities, not for profit organizations, private firms, and independent researchers. PRCCC has developed the first comprehensive State of the Climate Report (2013), The Road to Resilience: Adaptation Guide (2014), and the first stand-alone chapter of the U.S. Caribbean as part of the Fourth National Climate Report (2018). PRCZM and PRCCC projects and products can be found at:

www.pr-ccc.org;
<http://www.drna.pr.gov/oficinas/pmzc/>; and
<https://nca2018.globalchange.gov/chapter/20/>

b. Would you say that Coastal Zone Management Grants are important, not only for conservation and restoration efforts, but also to support the economy of coastal jurisdictions across the U.S. like Puerto Rico, particularly what we call the “blue” or “ocean” economy?

Please discuss.

State and Territory CZM Programs sustain the Blue Economy by assisting coastal communities to reduce risk, supporting maritime commerce, enhancing tourism and recreation, and managing living resources for sustainable development. For example:

- Between 2012 and 2017, State and Territory CZM Programs worked with 1,165 communities nationwide to undertake coastal hazard mitigation efforts, up 832% from the previous 5-year period.
- Between 2008 and 2017, 426 communities conducted port and waterfront redevelopment efforts with assistance from State or Territory CZM funding or technical assistance.
- Between 2008 and 2017, State and Territory CZM Programs provided technical and financial assistance to create or enhance 2,879 public access sites to support the recreation and tourism.
- Between 2008 and 2017, State and Territory CZM Programs restored 34,147 acres of coastal habitat, sustaining the natural systems that support coastal communities and the Blue Economy

The Coastal States Organization's document ["Coastal Zone Management Programs and the Blue Economy"](#) highlights examples of where State and Territory CZM Programs supported the blue economy through risk reduction, promoting maritime commerce, promoting tourism and recreation, and protecting living marine resources.

6. You also head the Puerto Rico Coral Reef Conservation and Management Program. You therefore know that coral reefs are crucial for our Island in a variety of ways, whether it is because of their ecological and environmental value, or their importance for our tourism and coastal economies.

However, coral reefs also provide protection against natural disasters. Could you elaborate on this and why coral reef conservation efforts are so important to build resilience and mitigate against the impacts of hurricanes and other phenomena?

Coral reefs provide substantial protection against natural hazards by reducing wave energy by an average of 97%. Reef crests alone dissipate most of this energy (86%). There are 100 million or more people who may receive risk reduction benefits from reefs or bear hazard mitigation and adaptation costs if reefs are degraded. We show that coral reefs can provide comparable wave attenuation benefits to artificial defenses such as breakwaters, and reef defenses can be enhanced cost effectively. Reefs face growing threats yet there is opportunity to guide adaptation and hazard mitigation investments towards reef restoration to strengthen this first line of coastal defense².

Immediately after Hurricane Maria (2017), I contacted Professor Julio Morell (CARICOOS), and Professor Ruperto Chaparro and Doctor Miguel Canals-Silander (UPRM) to discuss how unsheltered coastal areas of Rincon were devastated by direct storm wave attack while

² Ferrario, F., Beck, M., Storlazzi, C. *et al.* The effectiveness of coral reefs for coastal hazard risk reduction and adaptation. *Nat Commun* **5**, 3794 (2014). <https://doi.org/10.1038/ncomms4794>

the San Juan Metro area was affected by coastal floods, but not by direct wave attack. San Juan Metro's reefs had effectively protected the most densely populated city of Puerto Rico.

Corals must be protected given their high ecological value, but also because of their ecosystem services and proven functions. We collaborate as part of the Puerto Rico Climate Change Council (PRCCC) where over 100 scientists, planners, engineers, architects, economists, social scientists, work to integrate the best science and knowledge available about Puerto Rico's changing climate and oceans. Dr. Canals-Silander ran simulations using real Hurricane Maria's conditions (pressure, winds, and translation velocity), resulting on an impressive wave attenuation at reefs' shallow areas of 97%.

Professor Julio Morell (CARICOOS), Professor Ruperto Chaparro (Sea Grant), Professor Aurelio Mercado and Dr. Miguel Canals (UPRM), and Professor Ernesto L. Díaz (PRCCC coordinator), conduct sea level rise, ocean chemistry (sea surface temperature, ocean pH), high resolution wave climate analyses, beach erosion and resilience building initiatives funded in part by the Puerto Rico Coastal Management Program in support of PRCCC Working Group 1: Geophysical and Chemical Knowledge.

7. As I mentioned during the hearing, I've joined Senators Marco Rubio, Rick Scott, and Congressman Darren Soto in introducing the Restoring Resilient Reefs Act (H.R. 4160/S.2429), bipartisan and bicameral legislation to reauthorize and modernize the Coral Reef Conservation Act, which expired 16 years ago.

Among other things, this bill would authorize NOAA to provide State Block Grants to allow U.S. coral jurisdictions like Puerto Rico to apply for funding to meet the priorities they have set for restoration and management of their own coral reefs.

The bill would also qualify certain coral reefs to be eligible for public assistance under the Stafford Act, and would provide new avenues for the provision of emergency funds to address coral reef emergencies like disease outbreaks, invasive species, coral bleaching, natural disasters, among others.

I think these proposals would greatly help address some of the challenges Puerto Rico and other coral jurisdictions face in accessing federal funding. I would therefore be interested in receiving your views and comments about these and other provisions in the bill.

The Coral Reef Conservation Act is certainly overdue for reauthorization and we are supportive of the efforts to update and reauthorize this legislation. There are two points of concern within the proposed legislation – the burden imposed by the mandated plans and the restrictions imposed on how the block grants may be dispersed.

On the first point, the legislation requires numerous plans – State strategies, action plans, and evaluations; stewardship plans; federal management strategies and plans and emergency which will likely require state contributions. Many of the state and territory coral reef programs are very lean and these planning and reporting requirements would likely divert at least the full time of a staff member from implementation efforts.

On the second point, the legislation requires that the amount of Federal funds provided to a State as a block grant may not exceed the total amount of the annual expenditures of the State. As the hearing was focused on environmental justice for coastal communities and issues with access to federal funding based on match requirements, it is important to note here that the implication of this requirement is that if an underserved community can only provide a small amount of state funding they can only receive a small amount of federal funding, where as a more well off state that can dedicate more funding to the issue is

eligible to receive more federal funding. Further this ability to access funding may not be proportionate to the level of the coral reef issues in the state. This in essence perpetuates an issue of inequality in accessibility federal resources.

Thank you for the opportunity to provide further information about these important coastal issues,

Regards,

A handwritten signature in blue ink, consisting of a series of loops and a long horizontal stroke extending to the right.

Ernesto L. Díaz, MEM
Coordinator