NOAA in the Caribbean Newsletter - Summer Edition

Hello NOAA in the Caribbean Community,

Our Annual Partner Meeting will be held on October 4, 2022 from 9am ET to 12pm ET. The conversation will focus on a five-year post-Maria and Irma update and on climate and connectivity.

Over the past several years, our Steering Committee has grown in numbers and outgrown its original role of acting as a decisional body. As a result, we will be renaming the NOAA in the Caribbean Steering Committee to the NOAA in the Caribbean Community Group. If you are not currently part of this group, but would like to learn more about it or be more involved, please let us know through this form. We would love to have you join us for the Community Group bi-monthly meetings. You do not need to be a part of NOAA to join this group!

Please see the end of this newsletter for links and more information on numerous funding opportunities! If you have questions or want more information, please contact CaribbeanNews@noaa.gov. We hope to see you at our NOAA in the Caribbean Annual Partner Meeting on October 4!

Thank you,
The NOAA in the Caribbean Executive Team

Queen Conch Aquaculture Partnership in Puerto Rico Supported by NOAA Fisheries Grant

Adapted from article by: Randie Hovatter, Communications Specialist, NOAA

Queen conch aquaculture can provide Caribbean communities with the opportunity to support and restore this unique snail species. Queen conch are vital to seagrass ecosystems and are the second largest fisheries in the Caribbean. However, due to historic overfishing, current fishing pressure, coastal storms, and habitat changes queen conch numbers have declined. To combat this decline, a partnership in Puerto Rico is working to farm conch for release into the wild and for sustainable seafood production.

“The majority of Puerto Rico’s estimated 1,200–1,500 commercial fishers are dive fishers who depend on the conch fishery as a main source of income,” said Raimundo

Espinoza, Executive Director, Conservación ConCiencia. Espinoza represents one of three partners working through a NOAA Saltonstall-Kennedy Grant Program funded project to aid in the restoration of the economically and culturally important queen conch species. “Culturally, conch has deep roots in Puerto Rico dating back to the indigenous Taino who ate conch and used its shell for art, decorations, and the famous ‘Guamo’ the conch shell trumpet.”

The organizations partnering on this project include:

- Florida Atlantic University’s Harbor Branch Oceanographic Institute
- Conservación ConCiencia
- Naguabo Fishing Association

Through the grant, NOAA is supporting the renovation, installation, and operation of The Queen Conch Hatchery located in Naguabo. “The Naguabo Queen Conch Hatchery in Puerto Rico is the first of its kind in that it is located in a Fishing Association and the fishers assist with the operation of the hatchery,” said Megan Davis, Research Professor at Florida Atlantic University. This project is the first time that a conch hatchery is part of a fishing association. The fishers can diversify their income by assisting with the operation. “Fishers collect the egg mass sections from their known fishing grounds, help with installation of the facilities, and assist with the day-to-day work in the hatchery.”

(Caption: Inside Naguabo Queen Conch Hatchery in Puerto Rico. From left to right – Victoria Cassar, Hatchery Manager; Raimundo Espinoza, Executive Director, Conservación ConCiencia

and Co-PI on SK NOAA grant; Megan Davis, Research Professor, Florida Atlantic University Harbor Branch Oceanographic Institute and PI on SK NOAA grant.)

Working Together to Restore Conch

Along with the grant support and hatchery practices, a large portion of the restoration work and future success rests in the partnerships built across stakeholder groups in Puerto Rico. “All three partners bring complementary experiences and skills to the project,” added Davis. The lab’s hope is to deepen people’s understanding of marine life and the importance of harvesting from the ocean respectfully. “This project is built around the concept of inclusivity and collaboration which creates a welcoming space for all to learn about aquaculture, and have first-hand access to the fields of STEM,” added Hatchery Manager Victoria Cassar.

(Caption: Hatchery-reared Queen Conch juvenile from the Naguabo Queen Conch Hatchery on a seagrass blade. Age is approximately 1.5 month after metamorphosis and the conch size is about 4-5 mm.)

Providing accessibility and restoring an ocean-based economic opportunity allows local communities to remain working on the water while using the conch harvest skills passed down through generations. While daily operations continue under the direction of Hatchery Manager Victoria Cassar and Hatchery Assistant Marie Garcia, the partnership team is also working to educate the next generation of conch farmers. The hatchery’s latest addition to the team is local high school intern Hizdalimar "Dali"

Montañez. “Beyond the specifics of aquaculture education, this project shows the potential for future careers in STEM, as well as potential entrepreneurial opportunities that have not been seen before locally,” said Cassar.
Like many other aquaculture projects, queen conch aquaculture is working towards providing sustainable seafood, improving economic opportunities in coastal communities, and increasing aquaculture literacy. As U.S. aquaculture for commercial harvest and restoration continue to grow, partnerships like the Puerto Rico, Naguabo Queen Conch Hatchery will serve as an example of the work that can be accomplished with meaningful partnerships.

Read more about the Queen Conch Nursery in Hakai Magazine:
https://hakaimagazine.com/features/the-queen-conchs-gambit/
Watch the recording of the NOAA Science Seminar on “Community-Based Queen Conch Aquaculture in Puerto Rico” presented by Megan Davis and Raimundo Espinoza.
Follow them on social media:

- QueenConchLab on Instagram, LinkedIn
- Conservación ConCiencia on Facebook, Instagram
- FAU Harbor Branch on Facebook, Instagram, Twitter, LinkedIn

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Summary of Climate Change Indicators and Adaptation Alternatives for Puerto Rico Available in Spanish

Wanda I. Crespo-Acevedo, Climate Adaptation Program Specialist in support of the NOAA-RISA Program in Puerto Rico, prepared a Spanish language summary of the latest climate science for the island, implications, and adaptation alternatives. Climate change projections for Puerto Rico suggest higher temperatures, a greater number of extremely hot days during the year, droughts, warmer and more acidic waters, and more intense hurricanes with more associated rain.

(Caption: Coastline of Puerto Rico. Credit: Wanda I. Crespo-Acevedo)

The translation of findings from climate assessments such as the NOAA Sea Level Rise Technical Report, the Puerto Rico and USVI Climate Summary 2022, the 4th National Climate Assessment and the 2021 Puerto Rico State of the Climate Report aims to support the island's recovery process from hurricanes Irma and María.

The summary will make this climate science information available to residents, practitioners and decision-makers who speak Spanish, and is available online.

Uncrewed Systems Survey the Atlantic Ocean and Caribbean Sea during the 2022 Hurricane Season

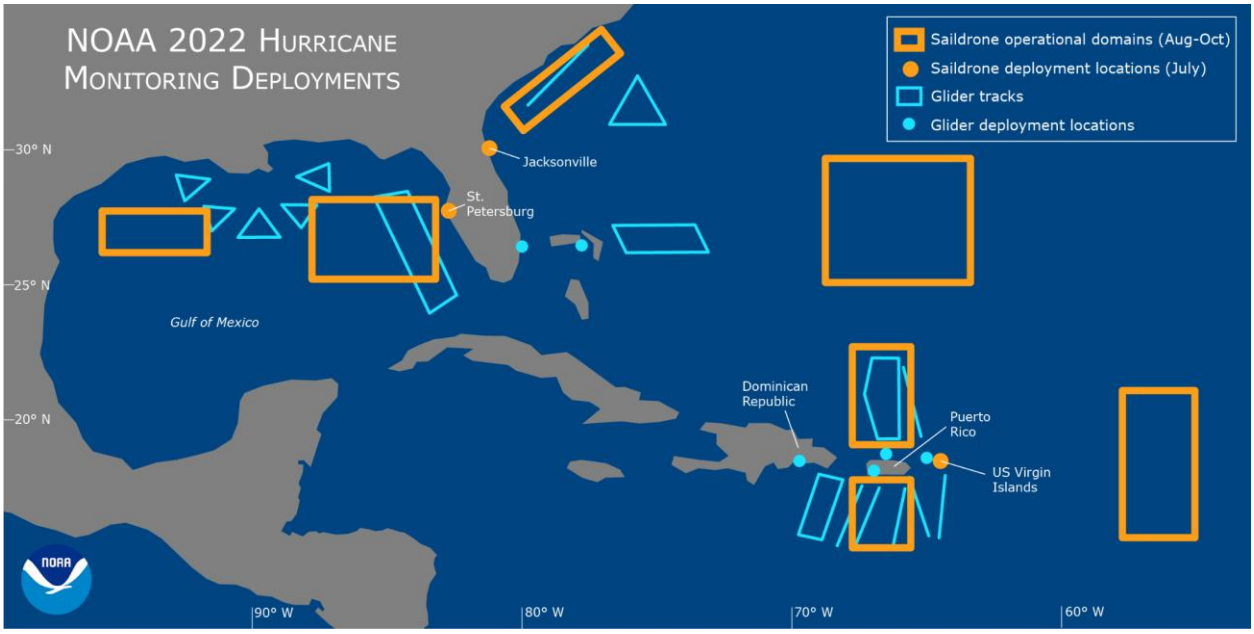
By: Rayne Sabatello, Communications Specialist at NOAA

NOAA and partners have successfully deployed saildrones and underwater gliders to survey the Atlantic Ocean and Caribbean Sea during the 2022 hurricane season. The saildrones were launched from the coasts of St. Petersburg and Jacksonville, Florida, Port Aransas, Texas, and the U.S. Virgin Islands, while the gliders were deployed from the coasts of Puerto Rico, the Dominican Republic, and the Bahamas.

One of the biggest challenges to hurricane forecasting is predicting rapid intensification, when hurricane wind speeds increase at least 35 mph over a 24 hour period. To fully understand how storms intensify, scientists collect data on the exchange of energy

between the ocean and atmosphere in the forms of heat and momentum. However, gathering data in this dangerous environment is best accomplished by uncrewed systems.

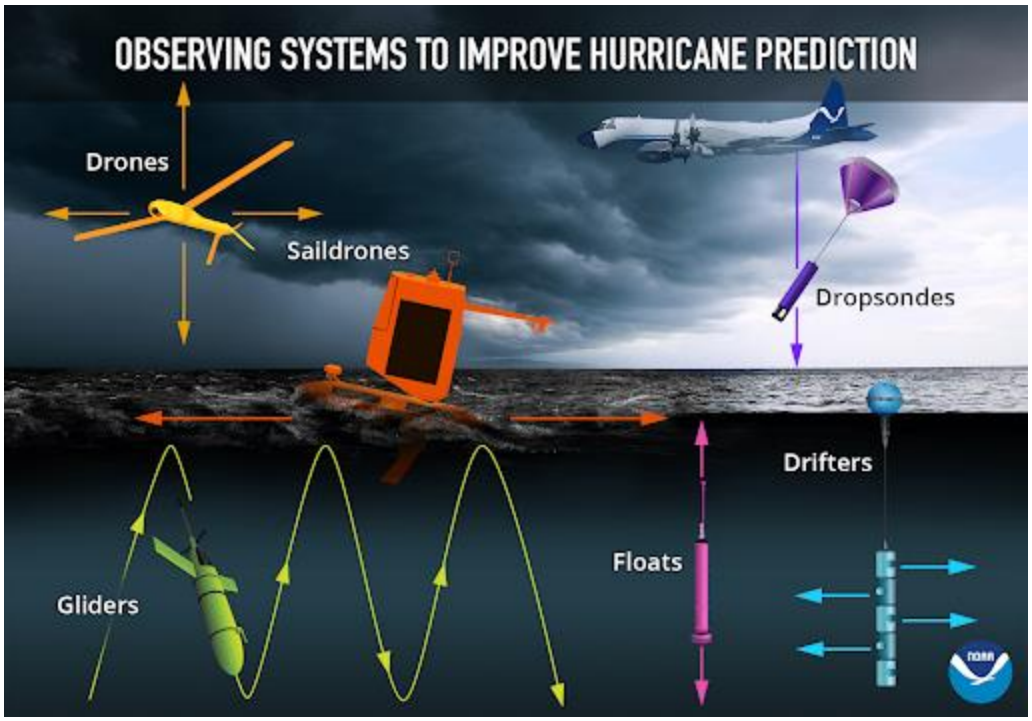
Seven saildrones and five underwater gliders will operate in the Gulf of Mexico, western Atlantic Ocean, and Caribbean Sea in areas frequented by tropical storms and hurricanes. This year, three of the saildrones will work together with underwater gliders to obtain nearly collocated measurements of the upper ocean and air-sea interface.



(Caption: Map of hurricane monitoring deployment sites. Credit: NOAA)

Saildrones are equipped with a special “hurricane wing” which looks like a hard sail to withstand the extreme wind conditions encountered in storms as they gather data from the near-surface ocean and atmosphere in real-time. The data are used to improve our understanding and prediction of tropical cyclone intensity changes and advance our knowledge of the ocean-atmosphere interactions that fuel them.

Underwater gliders are equipped with sensors that measure temperature and salinity down to a half mile below the ocean surface. Three were deployed in the Caribbean Sea, while two were deployed in the North Atlantic. These gliders provide high-volume, high-resolution data in areas where hurricanes frequently travel. Because of the strong interaction between the ocean and atmosphere during a hurricane’s passage, better representation of the ocean in weather models has led to more accurate intensity forecasts.



(Caption: NOAA will use several autonomous instruments this hurricane season to collect ocean and atmospheric data during hurricanes. Credit: NOAA PMEL)

"The air-sea interface is where energy is transferred from the warm ocean to hurricanes, but it's not the whole story," said Greg Foltz, a scientist at NOAA's Atlantic Oceanographic & Meteorological Laboratory. *"Conditions in the subsurface ocean and lower atmosphere affect the rate of energy transfer and the efficiency with which it can fuel a hurricane's intensification. To understand this flow and exchange of energy, coordinated measurements from multiple ocean-atmosphere observing platforms are needed."*

Data from saildrones, gliders, and other uncrewed systems will help forecasters better understand the forces that drive hurricanes to warn communities earlier.

Summary of the 18th Session of the Western Central Atlantic Fishery Commission

The 18th meeting of the Western Central Atlantic Fishery Commission (WECAFC) took place 26-29 July 2022. WECAFC operates in an advisory capacity to promote the effective conservation, management, and development of living marine resources in the Wider Caribbean, with 34 members, including the United States. At this meeting,

WECAFC endorsed a Data Collection Reference Framework, a Regional Plan of Action for the Conservation and Management of Sharks, as well as a Regional Fish Spawning Aggregation Fishery Management Plan focused on Nassau grouper and mutton snapper. A recommendation aimed at combating illegal, unreported, and unregulated fishing encourages members to strengthen fisheries governance, effectively control transshipment, and develop mechanisms for sharing fishing vessel information. WECAFC also reaffirmed its commitment to regional queen conch management, monitoring, genetic work and traceability. A new WECAFC Strategic Plan was established for 2022-2027.

Visit: https://www.fao.org/wecafc/fr/

For more information, contact Laura.Cimo@noaa.gov or Rachel.O'Malley@noaa.gov.

(Caption: Nassau grouper. Credit: Paddy Ryan)

NOAA and USACE Co-Sponsor "Resilience to Climate Change in Small Island Developing States (SIDs) in the Caribbean" Forum in Barbados

By: Andrea Miralles-Barboza, Research and Policy Analyst at NOAA

(Caption: Photo from the sky on the way to the "Resilience to Climate Change in Small Island Developing States (SIDs) in the Caribbean" forum. Credit: NOAA colleagues)

The "Resilience to Climate Change in Small Island Developing States (SIDs) in the Caribbean" forum, co-sponsored by NOAA and the U.S. Army Corps of Engineers (USACE), took place from June 13th-16th in Barbados. This three-day forum brought together experts from across U.S. and non-U.S. Caribbean territories to share their experiences and to provide insights on the various challenges and opportunities associated with action at local and regional levels for building resilience in the Caribbean. Regional participation in the forum ranged from researchers, decision-makers, individuals in governmental and non-governmental positions from the following Caribbean countries: Belize, Barbados, Dominica, Grenada, Jamaica, St.Kitts and Nevis, St. Lucia, Trinidad and Tobago and the U.S. Virgin Islands.

(Caption: A participant from Trinidad and Tobago discussing their organization's use of the Nature-Based Solution 'Vetiver Grass', and how it can be used throughout the Caribbean region to (1) reduce impacts from climate change and (2) provide economic benefit to those that use it. Credit: NOAA colleague)

The first half of the forum included presentations and discussions from Caribbean participants on a variety of topics related to risk and resilience in the Caribbean. The second half of the forum included the creation of small working groups on priority topics identified throughout the meeting, as well as the identification of next steps for collaboration. While there were many thoughtful discussions throughout, some highlights from the meeting included:

- An opening address from CANARI (a regional non-profit focused on participatory natural resource governance in the Caribbean) which emphasized: (1) that resilience should be thought of more comprehensively as a Caribbean philosophy as opposed to as a response to climate change, and (2) the importance of collaboration across the Caribbean for achieving this more resilient vision of the Caribbean.
- A session on Nature-Based Solutions with case studies from throughout (and beyond) the Caribbean such as a TNC/Red Cross partnership in Grenada to reduce coastal hazards, a Vetiver Grass System in Trinidad and Tobago to manage erosion and provide economic benefit as well as a "Ridge to Reef" project from the University of Virgin islands to inform risk-management strategies throughout the U.S. Virgin Islands.
- A presentation from the Climate Resilience Execution Agency for Dominica (CREAD) on how they became one of the first agencies in the world dedicated to climate resilience after Hurricane Maria and on their use of CAMS (an open-source critical asset management system) to help prepare the become more resilient in the face for unpredictable events and system failures.

Resilience in the Caribbean is not a new idea. Participants explained that there has been a strong push to create a “culture of resilience” across the region, and there are many lessons to learn as a result. Those involved in this meeting continue to collaborate on transforming the priorities they identified into resilience action for the Caribbean and hope for additional opportunities for peer-to-peer exchanges such as this one in Barbados.

For more information, contact Andrea Miralles-Barboza, andrea.miralles-barboza@noaa.gov

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NRCS and the US Forest Service are working together for the Joint Chief’s Landscape Restoration Partnership Initiative (JCI)

Sea Grant PR on the scene, providing education and outreach to the initiative

This article was originally published on the USDA Natural Resources Conservation Service (NRCS) Caribbean Area on July 11, 2022.

(Photo caption: Workshops of this nature are only possible and successful thanks to the collaboration of non-profit entities such as the NRCS, Fish & Wildlife, Sea Grant, etc. Image taken during the workshop at Finca La Zafra on July 7, 2022).

Extensionist Lillian Ramírez Durand represented Sea Grant Puerto Rico at the NRCS and its collaborators' workshop known as "Joint Chiefs Landscape Restoration Partnership Initiative (JCI)". The workshop was held on July 7, 2022, at Finca La Zafra in Gurabo, where 50 people from multiple regions of Puerto Rico participated. The purpose of this workshop is to provide guidance on conservation and restoration to improve ecosystem health and resilience in a significant manner. The objectives for this workshop were: to introduce the participants to the initiative and the collaborators of the project; promote the integration of new farmers and custodians of private land to the project; and encourage the exchange of knowledge among participants on conservation practices.

In collaboration, the Sea Grant Puerto Rico program oversaw project outreach, providing training workshops to farmers, private land custodians and community leaders in the watersheds of eastern Puerto Rico to promote understanding of the impact of implementing conservation practices and their contribution to the benefit of marine and coastal resources.

Working in partnership, and at this scale, helps reduce wildfire threats, protect water quality and supply, and improve wildlife habitat for at-risk species. Partners in this

project include: International Institute of Tropical Forestry (IITF), US Fish & Wildlife Service (FWS), Para La Naturaleza, Protectores de Cuencas, Envirosurvey Inc., Centro para la Conservación del Paisaje, Sea Grant, and Distritos de Conservación de Suelos y Aguas del Suroeste.

To read the full article, go to USDA Natural Resources Conservation Sevice Caribbean Area.

For more information about the workshop and the NRCS initiative,contact lillian.ramirez@upr.edu.

Announcements

NOAA Marine Debris Program Funding Opportunity

On June 29th, U.S. Commerce Secretary Gina Raimondo announced new NOAA funding to build a Climate Ready Nation under the 2021 Bipartisan Infrastructure Law. The objective of this initiative is to increase resilience through landscape-scale habitat restoration in coastal ecosystems nationwide and promote coastal resilience in underserved coastal communities as well as those most vulnerable to climate impacts. This initiative also includes the prevention, mitigation, and removal of marine debris from coastal communities and marine ecosystems. Funding for this initiative is part of the almost $3 billion NOAA received.

The announcement includes the availability of up to $56 million for multi-year projects that **remove marine debris** to benefit marine and Great Lakes habitats and communities. This competition focuses on two priorities: removing large marine debris and using proven interception technologies to capture marine debris throughout the coastal United States, Great Lakes, territories, and Freely Associated States.
The first priority will support partnerships for the development of large scale and high-value marine debris removal programs. These programs should focus on large marine debris, including abandoned and derelict vessels, derelict fishing gear, and other debris that is generally unable to be collected by hand. The second priority of this competition focuses on implementation of proven marine debris interception technologies in coastal riverine, shoreline, estuarine, and urban environments where trash, plastics, and other persistent, reaccumulating macro-debris can be captured and removed.

These two priorities will be reviewed as separate, parallel tracks under this funding opportunity, and they have different application requirements. NOAA expects to fund a small number of awards, depending on the merit of submitted proposals.

Proposals are due on Grants.gov on October 5, 2022, 11:59 p.m. Eastern Time. An applicant webinar providing an overview of the competition and additional guidance are now available. NOAA will select projects through a rigorous and highly competitive merit review process. For more information on grant opportunities, please visit Grants.gov and the NOAA Marine Debris Program's website. Please visit the MDP blog for more details as well.

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Two additional grant projects are being run through NOAA's Sea Grant program: the Marine Debris Challenge Grant Program (research to application projects, funding of up to $3 million over up to a 3-year time period) and Marine Debris Community Action Coalitions (projects up to $300,000 over up to a 3-year time period). Note that these Letters of Intent and proposals have to be submitted by one of the 34 state Sea Grant programs, and Sea Grant has to have a role in the proposal. If you are interested in one of these opportunities, reach out to the appropriate Sea Grant program's research or extension director as soon as possible!

Bipartisan Infrastructure Law Funding Opportunities

- Transformational Habitat Restoration and Coastal Resilience Grants
  - open through September 6, 2022
- Coastal Habitat Restoration and Resilience Grants for Underserved Communities
  - open through September 30, 2022
- Marine Debris Removal Grants
  - open through October 5, 2022
- Tribal Engagement in Regional Ocean Partnership Priorities
  - open through September 13, 2022
- Restoring Tribal Priority Fish Passage through Barrier Removal Grants
  - open through August 29, 2022

NOAA Fisheries Office of Habitat Conservation Funding Opportunities

NOAA Fisheries Office of Habitat Conservation has opened two restoration funding opportunities under the Bipartisan Infrastructure Law, with one focused on underserved communities. **This funding will go towards transformational habitat restoration projects for our nation's fisheries and protected resources, while also strengthening the resilience of coastal communities around the country.**

Transformational Habitat Restoration and Coastal Resilience Grants:
In collaboration with NOAA, selected partners will use these funds to implement locally-led habitat restoration actions that restore marine, estuarine, coastal, or Great Lakes ecosystems, using approaches that enhance the resilience of communities to climate hazards. Funding will prioritize habitat restoration actions that rebuild productive and sustainable fisheries, contribute to the recovery and conservation of threatened and endangered species, use natural infrastructure to reduce damage from flooding and storms, promote resilient ecosystems and communities, and yield socioeconomic benefits. The funding priorities and selection process of this opportunity emphasize support for underserved communities. There is no non-federal matching requirement for this funding. Proposals may include: planning and assessments; feasibility studies; engineering design and permitting; on-the-ground implementation; pre- and/or post-implementation monitoring; or any combination of phases. Proposals may also include capacity-building and stakeholder engagement to support the proposed restoration. Cost sharing and partnerships are encouraged and are considered within the evaluation criterion for selecting projects.

- Up to $85 million is available
- Federal funding requests: between $1 million and $15 million over the award period.
- Award periods up to 3 years (potential of up to 5 years if necessary)
- Application deadline: September 6, 2022.
- How to Apply: www.Grants.gov; Opportunity #: NOAA-NMFS-HCPO-2022-2007195
- For more information click here.

Coastal Habitat Restoration and Resilience Grants for Underserved Communities:
NOAA is concurrently releasing a separate Notice of Funding Opportunity to support opportunities for underserved communities, tribes, and/or tribal entities to meaningfully engage in coastal habitat restoration activities. The opportunity is focused on building organizational capacity and/or supporting restoration activities that benefit underserved communities and enhance their resilience to climate hazards. Meaningful engagement of underserved communities is intended to ensure that communities are integral to the visioning, decision-making, and leadership for coastal habitat restoration projects; to

ensure that the scope of such projects are inclusive of the priorities and needs of communities; and/or to ensure that the benefits of such projects flow back to underserved communities. Potential activities can include: 1) Capacity building, which may include participation in municipal or regional-scale resilience planning, project planning and feasibility studies, stakeholder engagement, proposal development for future funding, and outreach and education; and/or 2) Restoration project activities, including demonstration projects, which may include engineering and design, permitting, on-the-ground restoration, and pre- and post-project implementation monitoring.

- Up to $10 million available
- Federal funding requests: between $75,000 and $1 million
- Award periods up to 3 years (potential of up to 5 years if necessary)
- Application Deadline: September 30, 2022
- How to Apply: www.Grants.gov; Opportunity #: NOAA-NMFS-HCPO-2022-2007354
- For more information click here.

NOAA Webstory: https://www.fisheries.noaa.gov/feature-story/two-habitat-restoration-and-coastal-resilience-funding-opportunities-open-under

Please review our Resources for NOAA Restoration Center Grant Applicant Webpage for assistance on preparing grant materials. Please reach out to Lisa Vandiver (Lisa.Vandiver@noaa.gov) if you have any questions or require assistance.

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If you wish to submit any questions, comments, story ideas, artwork or photographs, please email us at CaribbeanNews@noaa.gov.

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