Questions for the Record from Democrat Members

Questions from Rep. Velázquez

1. Dr. Leonard, H.R. 8632 includes important provisions for the U.S territories, which have been heavily impacted by natural disasters during the last four years. Specifically, Section 704, requires the NOAA Administrator to provide technical assistance to improve data collection and forecasting for extreme weather. How will technical assistance like this benefit territories like Puerto Rico, which has limited resources and is still recovering from Hurricane Maria?

This year has already seen the greatest number of hurricanes in the Atlantic Ocean since NOAA began recording hurricanes in the 1850s.[1] Studies show that climate change is increasing the risk of severe weather events, and the brunt of that risk will be borne by areas already impacted by major tropical storms, typhoons, and hurricanes. Additionally, higher sea levels and atmospheric moisture increase levels of flooding associated with major oceanic weather events. Shifts in the range and severity of storm events weaken the reliability of existing predictive data, which has already proven insufficient to prevent tragic losses of life and billions of dollars in damage. Hurricane Maria was the wettest hurricane on record to hit Puerto Rico, and severe rainfall of that degree is now five times more likely to hit the island than it was 50 years ago.[2] In addition to causing at least 3,000 deaths, Hurricane Maria destroyed Puerto Rico's main weather radar used for hurricane forecasting, and significant investment is needed to both rebuild and improve the island's forecasting capabilities. For all U.S. territories facing the risk of natural disasters, more comprehensive data collection and weather forecasting is essential to supporting impacted-based decision services in and facilitating pre-disaster preparations.

Technological advances over the past decade have increased forecasting abilities, and additional funding is needed to both implement existing technology and continuing to develop new forecasting methods. NOAA's recent deployment of hurricane gliders to increase data availability on ocean conditions and improve the accuracy of hurricane forecasting is an example of the highly beneficial technology that can be implemented when sufficient funding is available. Minimizing uncertainty in forecasting means increasing the time that potentially impacted territories have to prepare for threats facing them. Section 704's grant program would ensure that territories can engage with and benefit from such technology to live-saving ends. Additionally, Section 704 would also provide needed resources to ensure technological advances are inclusive of Indigenous Knowledge from U.S. Territories.[3] A recent study by David-Chavez et al. (2020) found that resource limitations were a significant obstacle to Indigenous Knowledge mobilization in the Caribbean including Borikén (Puerto Rico). [4]

2. Dr. Leonard, climate change issues are deeply intertwined with injustice and human rights disputes. As you know, LMI and communities of color are unfairly exposed to, and impacted by, hazardous pollution and industrial practices. Can you explain how H.R. 8632 guards our nation's waters and

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[1] https://www.noaa.gov/news/2020-atlantic-hurricane-season-takes-infamous-top-spot-for-busiest-on-record

[2] https://www.nature.com/articles/d41586-019-01280-w

[3] David-Chavez, D. M., & Gavin, M. C. (2018). A global assessment of Indigenous community engagement in climate research. *Environmental Research Letters*, *13*(12), 123005.

[4] David-Chavez, D. M., Valdez, S., Estevez, J. B., Meléndez Martínez, C., Garcia Jr, A. A., Josephs, K., & Troncoso, A. (2020). Community-based (rooted) research for regeneration: understanding benefits, barriers, and resources for Indigenous education and research. *AlterNative: An International Journal of Indigenous Peoples*, *16*(3), 220-232.

redistributes resources, protection, and power to LMI and minority frontline communities where environmental injustices are most pervasive?

Multiple sections of the Ocean-based Climate Solutions Act prioritize the needs and interests of LMI and minority frontline communities in light of the disproportionate risk of harm from climate change that these communities face and the disproportionate burden of environmental and resource degradation placed on these communities by present and historic government practices.

Sec. 107 secures protections for coastal areas that buffer frontline communities from storm surges and requires increased agency consultation regarding actions that would impact areas designated under the section. Sec. 201 calls for the protection of marine habitats that mitigate threats to vulnerable coastal communities by protecting natural resources vital to health and economies of those communities. It also requires the section to be implemented in such a way as to increase access to nature for low-income and communities of color. Sec. 1005 creates a grant program for shovel-ready restoration of coasts and fisheries and prioritizes projects that would benefit communities without adequate resources. Sec. 1302 likewise creates a grant program for coastal and estuary resilience projects that advance environmental justice by reducing the disproportionate impact of climate change on frontline communities.

These sections, among others, both dedicate resources to increasing the resilience of vulnerable communities in the face of climate change and ensure the consideration of these communities in the development and implementation of federal policy.

Questions from Rep. Cox

1. The Chairman's bill would also establish a Blue Carbon Program at NOAA to improve the management of coastal carbon sinks. What benefits would this new program bring to the management of coastal carbon sinks? What existing management practices need to be improved?

Existing management practices can be improved through greater consultation of Tribal governments and inclusion of Indigenous Knowledge ensuring the best available science for decision-making in the management of coastal carbon sinks. Coastal ecosystems such as mangroves, sea grass, and tidal marshes, are essential to climate change resilience due to their roles in storm surge buffering and food security and their unique capacity for carbon storage. Coastal carbon sinks, referred to as blue carbon ecosystems, sequester more carbon per area unit than do terrestrial forests. They are also extremely threatened due to both climate change and anthropogenic forces. For example, the IUCN predicts that all mangrove ecosystems could disappear in the next century under a business-as-usual scenario. Destruction of coastal carbon sinks not only releases the carbon stored therein, but also reduces overall capacity to uptake carbon from the atmosphere.

The program established under Title I of this bill would ensure that the most valuable blue carbon ecosystems are identified, protected, and continuously studied and monitored to better understand their role in mitigating and adapting to climate change. The comprehensive blue carbon program would facilitate interagency cooperation and management of coastal carbon sinks, promote public understanding of these valuable resources, support partnerships between federal agencies, Tribes, state and local governments or NGOs, and increase protection from agency actions for areas designated under the program.

Importantly, the program would also assess the economic, social, and environmental impacts and co-benefits of carbon storage, such as reduced flood risk, maintenance of biodiversity, and healthy fisheries, as well as the makeup of communities served by these ecosystems. The program prioritizes funding for blue carbon restoration projects that would benefit communities of color, low-income, and Tribal Nation or Indigenous communities.