

House Committee on Natural Resources
Full Committee Hearing: *Ocean Climate Action: Solutions to the Climate Crisis*
November 17, 2020
Questions for the Record for Dr. Kelly Kryc

Questions from Representative Velázquez

1. Dr. Kryc, as the Chairwoman of the House Small Businesses Committee and a Representative of coastal communities, I'm deeply concerned about the impacts of climate change on small businesses located along our waterfronts. Can you explain the unique challenges faced by small businesses located in our coastal communities? How can small businesses utilize the climate change relocation initiative program in H.R. 8632 to better prepare for the effects of global warming.

As a small business located on the Boston waterfront, the New England Aquarium shares the Chairwoman's concerns. During a storm surge event in early 2018, flooding in the plaza in front of the Aquarium and at the Aquarium "T" stop forced the Aquarium to close to the public at a substantial loss in revenue from ticket sales. A little more than 50 years ago, the Aquarium was one of the first non-industrial businesses to establish a presence on the waterfront, which at the time was not as desirable a location as it is now due to water quality issues in the Boston Harbor. The Boston Harbor cleanup that was initiated in 1986 under the Clean Water Act helped to transform the Boston waterfront into the tourist destination and business hub it is now. Now, the Boston waterfront is facing a new threat from climate change and associated sea level rise. A 2013 report by the Organization for Economic Cooperation and Development ranked Boston as the world's eighth most vulnerable to flooding among 136 coastal cities¹. This has profound impacts on the residents of Boston and its businesses. As the COVID-19 pandemic has painfully demonstrated, small businesses in coastal communities (and elsewhere) simply don't have the resources to weather these storms in the absence of support from the U.S. government, state and local governments, and the communities themselves. While the New England Aquarium has a long-term plan to work with other Boston waterfront businesses and communities to develop a climate resilient waterfront, and the city of Boston is implementing a strategy to defend it from the impacts of climate change, we appreciate the actions detailed in Section 1006 of the Ocean-Based Solutions to Climate Act to proactively launch an initiative to coordinate Federal agency activities to identify and assist communities that have expressed interest in relocating due to health, safety, and environmental impacts from climate change.

2. Dr. Kryc, due to these unprecedented times, we have the opportunity for economic restructuring that incentivizes clean energy jobs. In your testimony, you discuss how offshore wind energy production promotes jobs for coastal communities and provides economic benefits across the country. As we work towards re-opening our economy, what role can clean energy jobs play in improving public health, labor productivity, and economic output?

Transitioning to a clean energy economy—whether powered by wind, solar, geothermal, or the ocean itself—is the critical first step in mitigating the impacts of climate change, which represents a threat to the health, well-being, and livelihoods of all Americans. The United States has not only gone through several energy transitions during its history, but led them by embracing innovation and change. Clean energy represents an opportunity for American citizens to benefit greatly from this transition. New England is leading the way on developing offshore wind resources off its coastline and demonstrating that these projects create high-paying jobs for local residents, provide the resources to revitalize aging coastal infrastructure in port cities, and contribute millions of dollars in economic impacts to the region annually. The 2018 Massachusetts Offshore Wind Workforce Assessment² estimates between 6,800 and 10,000 construction jobs will be created for the four planned projects off of Massachusetts. Ongoing operations and maintenance will contribute an additional 1,000 to 1,800 jobs annually. In addition, the Assessment estimates that the direct impact on the state's economic output resulting from these

¹ <https://www.worldbank.org/en/news/feature/2013/08/19/coastal-cities-at-highest-risk-floods>

² <https://files.masscec.com/2018%20MassCEC%20Workforce%20Study.pdf>

projects is estimated at \$678.8 million to \$805.1 million per year, with total economic gains of between \$1.4 billion to \$2.1 billion including direct, indirect, and induced impacts. Similar assessments for other regions of the United States demonstrate similar benefits to their local workforces and economies³⁴. The U.S. Offshore Wind Power Economic Impact Assessment⁵ published in 2020 by the American Wind Energy Association suggests that 20,000-30,000 megawatts of offshore wind capacity will be operational by 2030, which would support up to 83,000 jobs and produce as much as \$25 billion annually in economic output by 2030. In addition, the Assessment reports that wind developers have already announced investments of \$307 million in port-related infrastructure, \$650 million in transmission infrastructure, and \$342 million in U.S. manufacturing facilities and supply-chain development. All of these benefits translate to benefits to American households that will have access to clean, renewable energy at price parity with electricity generated from oil, gas, or coal with the added public health benefit of access to clean air and water. The Ocean-Based Solutions to Climate Act recognizes the need to transition to a clean energy economy and provides the framework for how the United States works to accelerate the responsible development of this resource in U.S. waters. The New England Aquarium supports offshore wind and is working with the developers and Massachusetts to conduct research that will be used to inform decision-making that aims to minimize impacts to marine ecosystems and wildlife.

Question from Representative Cox

1. The COVID-19 pandemic is far from over, as we have seen the number of cases skyrocket over the past few months. Not only are we dealing with a public health crisis, but COVID-19 has also created an economic fallout that we are still grappling with. With unemployment around 7% and an estimated 11 million unemployed, this crisis is not over. According to NOAA, in 2018, the ocean economy was responsible for \$373 billion to our GDP, while supporting 2.3 million jobs. How can we leverage ocean and coastal restoration and ocean-climate solutions to help individuals get back to work, while also helping us address the climate crisis?

The New England Aquarium and other cultural institutions across the United States have experienced the serious economic fallout of the COVID-19 pandemic first hand. According to the American Alliance of Museums, 1/3 of all museums in the United States may close permanently as funding sources and financial reserves are exhausted as a result of the financial crises brought on by the pandemic⁶. New England Aquarium is responsible for the health and welfare of 20,000 animals in our collection. To continue caring for our animals, the New England Aquarium has reduced as many costs as feasible, including reducing our staff by 42% since March 2020. As contributors to and beneficiaries of the ocean economy, we recognize the critical role that a healthy ocean plays in our own ability to deliver our mission to serve as is a catalyst for global change through public engagement, innovative scientific research, commitment to marine animal conservation, leadership in education, and effective advocacy for vital and vibrant oceans. Funding provided through the American Recovery and Reinvestment Act of 2009 (ARRA) provides an example of how impactful ocean and coastal restoration projects can be in helping individuals get back to work and supporting economic recovery and growth. ARRA provided \$167 million to NOAA that supported 125 habitat restoration projects. That funding and those projects created 2,280 jobs, restored 25,000 acres of habitat, and has generated \$260.5 million in economic output annually. Not only that, these projects opened river habitat, removed marine debris, reconnected tidal wetlands, and restored coral reefs. The provisions outlined in Section 1005 of the Ocean-Based Solutions to Climate Act build on the success of the ARRA coastal restoration program by authorizing \$3,000,000,000 to restore marine, estuarine, coastal, or Great Lake habitat that provides adaptation to climate change. The New England Aquarium supports this approach as both pragmatic and effective with the added benefit of producing co-benefits that support the economy and address climate change.

Question from Rep. Bishop

³ <https://www.nrel.gov/docs/fy13osti/57565.pdf>

⁴ <https://www.nrel.gov/docs/fy14osti/60445.pdf>

⁵ https://supportoffshorewind.org/wp-content/uploads/sites/6/2020/03/AWEA_Offshore-Wind-Economic-ImpactsV3.pdf

⁶ <https://www.aam-us.org/2020/07/22/united-states-may-lose-one-third-of-all-museums-new-survey-shows/>

1. Your testimony relies heavily on the premise that MPAs can help restore overfished fisheries. You push the approach hard for the U.S., but we have healthy, sustainably management fisheries in the U.S. Isn't your position inconsistent with the reality of how well-managed fisheries in the U.S. are?

The New England Aquarium strongly supports the Magnuson Stevens Act (MSA) and agrees with the ranking member that U.S. fisheries are some of the most well managed in the world. That said, implementation of MSA across the regions has yielded inconsistent results, and there is still room for improvement. For example, fisheries in New England have failed to attain the same success as fisheries in other regions under the MSA. The National Marine Fisheries Service's 2018 Status of the Stock Report⁷ reported that 91% of managed U.S. fish stocks are not subject to overfishing and 82% are not overfished. Of 43 stocks on the overfished list, 14 are in New England—the most of any region. Of 28 stocks on the overfishing list, 6 are in New England. At its core, MSA is a fisheries law and, while MSA does allow the Council to protect marine habitats “as practicable” for the benefit of the fisheries, the law prioritizes maximizing sustainable yields of fish stocks. Furthermore, MSA focuses on managing 479 fish stock or stock complexes, which represent less than 1% of the documented ocean species in U.S. waters. While fisheries management tools and laws play an important role in ensuring a healthy ocean, they were not meant to protect the full biodiversity of the ocean. For that, marine protected areas (MPAs) are necessary. Fully and highly protected MPAs support ecosystem health and resilience by protecting genetic diversity, and species abundance, size and fecundity⁸. Increased biodiversity has been shown to increase resilience in ecosystems to the impacts of climate change including lower pH, increased temperatures, and/or disease⁹. The New England Aquarium considers marine protected areas and well-managed fisheries to be complimentary to each other as tools to keeping the ocean (and its fisheries) healthy today and in the future. That's why we support the provisions in Title II of the Ocean-Based Climate Solutions Act. The ocean is a complex environment and requires a diverse and flexible arsenal of tools to balance the competing uses of its resources. For the ocean to continue providing those resources, it must be able to restore itself. For that, marine protected areas are needed.

⁷ <https://www.fisheries.noaa.gov/national/2018-report-congress-status-us-fisheries>

⁸ <https://tos.org/oceanography/article/planning-for-change-assessing-the-potential-role-of-marine-protected-areas>

⁹ <https://onlinelibrary.wiley.com/doi/abs/10.1111/ele.12598>