

Monica Medina
Assistant Secretary for
The Bureau of Oceans and International Environmental and Scientific Affairs
U.S. Department of State
Before the
House Select Committee on the Climate Crisis
June 9, 2022
Written Testimony

Chairwoman Castor, Ranking Member Graves, and members of the Committee, thank you for the opportunity to testify today, during National Ocean Month and the day after World Ocean Day, on the importance of protecting our ocean and its significance in the climate crisis. My name is Monica Medina, and I am the Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs at the Department of State. Our Bureau leads U.S. efforts to conserve and protect the global environment, including the ocean, for the prosperity, peace, health, and security of this and future generations. This mandate has never been more vital, and our work has never been more urgent, as the effects of climate change cause significant harm to communities around the world.

The ocean, in particular, bears the brunt of climate change, with tremendous implications for U.S. economic interests and global security. It absorbs approximately 25% of global carbon dioxide emissions and more than 90% of the excess heat trapped in the Earth system. This influences the most basic natural functions, like our weather and the changing seasons. Sea level rise, ocean warming, and ocean acidification already are destabilizing economies, ecosystems, communities, and cultures.

We need only to look at the world today to see that communities are already being strained by the effects of climate change on our ocean – including food shortages, drought, severe storms, coastal inundation, growing ocean dead zones, and escalating conflicts around shifting or dwindling ocean resources. At the State Department, we often hear from colleagues in the developing world about the impact that climate change is having on their economies and communities. I want to make clear that they do not see climate change as some future horror story. Climate change is happening today and exacerbating every other challenge we face — from overcoming COVID-19 to food and energy shortages.

Leaders I have talked to around the world want to work with the U.S. to address their current climate challenges. They worry about fresh water sources disappearing or becoming undrinkable, damages they cannot afford caused by more powerful storms, and where their food is going to come from. Some even worry whether the land on which they have lived for generations will remain above water as sea level rises. These are existential threats, and though they seem localized, the ripple effects are felt worldwide, from food shortages to mass migrations. These are not theoretical future problems – this is now. And we will see even more terrible disruptions from climate change in the future.

I also want to stress that these countries — many of which are struggling to recover from both climate and COVID shocks — are being aggressively wooed by our competitors. The People’s Republic of China (PRC) is seeking to enlist developing countries in its Belt and Road Initiative, offering to build power plants, aquaculture facilities, transit systems, and ports. They are offering to help these countries build climate resilience. But our competitors do not offer these countries the sustainable solutions they need to thrive in a warming world. It is not offering them the technical know-how to achieve a climate resilient, sustainable ocean-based economy, or “blue economy,” or the capacity to understand the impacts that a changing ocean may have on their food systems, water, and health. By contrast, the United States is deploying our expertise to build the capacity of our international partners and allies to do all these things. And we can - and must - do more to help our friends and allies prosper amid a changing ocean and to build a more secure, climate-resilient world. We are the partner of choice for these nations — and the more we can work with them, the stronger we will be as a nation both at home and abroad.

The ocean also offers sustainable solutions to the climate crisis, many of which the United States is pioneering and wants to share. For example, we are advancing renewable offshore wind energy and decarbonization of the shipping sector. We are rallying countries, ports, and other actors in the shipping value chain behind our vision to create green shipping corridors: maritime routes that showcase low- and zero-emission lifecycle fuels and technologies with the ambition to achieve zero greenhouse gas emissions across all aspects of the corridor.

And through the Infrastructure and Jobs Investment Act, passed by Congress and signed by President Biden last fall, we are allocating billions of dollars to support

coastal restoration and resilience in the face of climate change. In places like the Gulf Coast, where communities are already seeing the devastating effects of climate change, these funds are implementing proven nature-based solutions, restoring eroded wetlands that are critical protectors in the face of storms as well as key carbon sinks. In tackling these ocean issues, our national strengths in environmental science, maritime domain awareness, and technology are a tremendous strategic advantage. They give our nation an edge in an increasingly competitive world.

In my testimony today, I would like to highlight three ways in which the United States has the capacity to combat the ocean-climate crisis and the implications of how we deploy that capacity for our security. First, the United States is a global leader in climate forecasting and observing. Second, we possess unparalleled technical expertise in climate resilience strategies. And third, we are – and can continue to be – a global leader in understanding and implementing ocean-based climate solutions.

The United States enjoys unmatched climate forecasting and ocean observing capabilities. The data provided by our wide network of ocean sensors, including buoys, satellites, and ship-based observing systems help us understand and prepare for the impacts of climate change on our ocean and coasts. These capabilities will be critical to achieving the goals of the UN Decade of Ocean Science, which seeks to deliver the science we need for the ocean we want and is an opportunity to demonstrate our commitment to fulfilling the UN Sustainable Development Goals. The Ocean Decade is a critical framework for identifying and aligning resources toward ocean science that can address the pressing challenges of our time.

And those challenges are indeed pressing. We know that increasing volatility in the Earth's climate system, coupled with ocean warming, is leading to more frequent and more extreme storms. In 2021, weather and climate disasters cost the United States \$148 billion, according to NOAA's National Centers for Environmental Information. Globally, losses were over \$300 billion, according to the 2021 Weather, Climate and Catastrophe Insight report by Aon, a professional services firm. And 2021 was the seventh consecutive year in which ten or more billion-dollar disaster events occurred in the United States.

These storms have far-reaching consequences for safety and security. In addition to being an acute threat to the safety of coastal communities, hurricanes result in the decimation of coastal infrastructure, military installations, and key institutions like hospitals, schools, and roadways. The response to hurricanes also requires a massive effort across agencies, shifting focus from other security concerns.

Sea level rise, due to melting ice sheets and glaciers and the expansion of seawater as it warms, is another key stressor that ultimately increases international instability. Rising seas are an existential threat for low-lying island countries and coastal communities. About forty percent of the global population lives in coastal areas threatened by rising sea level and storm surges. Around the world, sea level rise is likely to result in population displacement, shrinking maritime zones, and threats to human health, as it increases the incidence of waterborne diseases and threatens access to water for drinking, sanitation, and hygiene.

One way we are helping to combat these threats is by expanding international ocean observing systems that collect key ocean-climate data. The United States partners with other countries in using Earth observing technology to understand and respond to climate change impacts on the ocean. For example, Sentinel-6-Michael Freilich is a U.S.-Europe joint satellite mission launched in November 2020 to measure sea levels at a global scale with millimeter-level accuracy. This U.S.- European partnership of developing satellite radar altimeters to measure global sea levels goes back to 1992.

We also support capacity building efforts around the world to help other countries improve their ocean observing systems, and support scientists in the collection of globally shared data. Each year, the Department of State facilitates international marine scientific research, processing 20 to 30 applications for foreign scientists conducting marine scientific research in waters under U.S. jurisdiction and supporting U.S. scientists in conducting 300 to 400 cruises in waters under foreign jurisdiction. The data collected during these cruises include measures of key ocean metrics like temperature, salinity, oxygen, and pH, as well as studies of biodiversity, marine geology, fisheries, corals, and so much more. Supporting the collection and sharing of such data across academic and government institutions is crucial to building a global understanding of our changing ocean. These exchanges also help ensure that data are transparent and accessible, in line with our democratic values.

This vast data collection effort - undertaken largely through the work of our colleagues at NOAA - has informed the development of climate and ocean models that are helping the United States and our allies better predict and prepare for how a changing climate will impact coastal communities.

We are also using ocean observing data – from satellites, buoys, and more –to anticipate health threats like cholera outbreaks, harmful algal blooms, and mosquito-borne diseases, which are increasing in incidence as the ocean warms. Our Bureau is working to link these datasets with those from health and demographic sources to protect public health, including through our cooperative agreement with the Pacific Islands Health Officers Association to develop a climate-based dengue fever early warning system. And we are taking similar steps to address climate-sensitive health risks in coastal communities with partners from the Arctic, Africa, and Southeast Asia.

Next, I'd like to highlight that the United States has enormous technical expertise in climate and ocean resilience. Sharing our expertise with our partners and allies can strengthen our alliances and help build a better world.

As the impacts from the climate crisis worsen, supporting international partners as they adapt and build resilience will be critical for promoting security and stability at home and abroad. According to the UN Environment Program, adaptation costs for developing countries are projected to be between \$140-300 billion annually by 2030. The need is great, and how the United States responds will have lasting implications on our diplomatic posture and the world's geopolitical landscape in general.

The President's Emergency Plan for Adaptation and Resilience, PREPARE, is a whole-of-government effort that seeks to help more than 500 million people in developing countries adapt to and manage the impacts of severe storms, droughts and sea level rise. PREPARE, jointly coordinated by the State Department and USAID, will help get early warning and climate information into the hands of those who need it; integrate and support adaptation in key sectors such as water, infrastructure, health and food security; and improve access to and mobilize finance, including from the private sector, for adaptation. PREPARE will also support locally-led adaptation that enables Indigenous peoples, vulnerable

communities, and marginalized populations to meaningfully participate in and lead adaptation-related efforts.

President Biden announced his intention to work with Congress to provide \$3 billion in U.S.-supported funding included in the FY 2023 Request. We hope you will approve this funding. This committee and your congressional colleagues have a key role to play in ensuring that we fund PREPARE in the coming budget cycles so that our U.S. resources can be used effectively and efficiently to strengthen U.S. leadership abroad.

What happens an ocean away has economic and security implications for our country. While it may seem abstract or distant from this hearing room today, ocean challenges across the globe will affect our economy, threaten our security, and impact our future. We must address these challenges, and I'd like to share with you now a few ways in which the State Department is already doing so.

First, I am proud to report that, working with Congress and subject to completion of domestic procedures, the United States intends to provide \$1 million to support the Ocean Risk and Resilience Action Alliance, and looks forward to participating in its work. The Alliance's mission is to drive at least \$500 million of investment in ocean nature-based solutions.

We are also working to protect the health and productivity of marine ecosystems. Seafood, among the most traded of all commodities, offers a lifeline out of poverty and a source of healthy protein for billions in developing economies. But many fish stocks around the world are under threat from climate change and other stressors on the marine environment. Warming ocean temperatures and related changes to ecosystems are affecting the distribution and abundance of living marine resources, with the potential to undermine the food security of vulnerable communities and exacerbate social and political conflict.

As the ocean changes and fish stocks with it, sustainable fisheries management – including the data and tools to anticipate and adapt to the impacts of climate change on fish stocks - will be key to ensuring future resilience and food security. The threat is especially acute in the developing world and in the tropics, where people consume two to four times more fish than in other regions.

Overfishing, illegal, unreported, and unregulated (IUU) fishing, and other harmful fishing practices are compounding stressors on dwindling fish stocks that are already under pressure due to climate change. IUU fishing creates market distortions that put law-abiding fishers at a disadvantage. And, it is often connected to a web of other security challenges and criminal activity, from forced labor to trade in illicit goods.

But critically, this is a challenge we have the tools and expertise to combat right now. By halting bad actors and destructive practices today, we are reducing the stress on fisheries in the future.

At the Our Ocean Conference in April 2022, the U.S. announced plans totaling nearly \$250 million to combat IUU fishing via policy initiatives, strengthened governance, on-the-water assets, technical assistance, and innovative forms of monitoring and traceability. We are helping partners and allies implement the Port State Measures Agreement, the first binding international agreement to specifically target IUU fishing. And with the Food and Agriculture Organization, we launched the Global Record of Fishing Vessels, Refrigerated Transport Vessels, and Supply Vessels, which, as the first (and only) global, publicly accessible database of fishing vessels, is an essential tool for increasing transparency and enabling States to verify the identity and history of fishing vessels seeking access to their waters and their ports. And we are seeking enforceable counter-IUU fishing provisions in our Free Trade Agreements.

Of course, securing the productivity of marine resources is about more than IUU fishing. It is also about creating transparent ocean governance and encouraging sustainable economic development opportunities for communities. During the World Leaders Summit at COP26 in Glasgow, the United States announced that we would join the High-Level Panel for a Sustainable Ocean Economy, known as the “Ocean Panel.” This group of sixteen countries accounts for about 45% of the world’s coastlines, 35% of the world’s exclusive economic zones, 25% of the world’s fisheries, and 20% of the world’s shipping fleet. Ocean Panel members have committed to develop and be guided by Sustainable Ocean Plans within five years, with the aim of sustainably managing 100 percent of our ocean area under national jurisdiction. This group provides the United States with a new forum to promote marine conservation in areas of the world that are strategically important to the United States, in collaboration with likeminded allies and partners.

And, there is still more we can do.

The United States is both an Atlantic and a Pacific nation. We plan to increase our collaborations with our Atlantic and Pacific neighbors to help solve common challenges and seize opportunities to develop sustainable blue economies.

Atlantic nations face shared ocean challenges, including IUU fishing, lawlessness at sea, and climate change threats to coastal communities. Lives and livelihoods are at risk and overall economic development will lag if we fail to address these challenges. We will be better able to solve problems that affect us all by working together, based on shared principles, to preserve the Atlantic as a stable, sustainable resource for Atlantic nations.

We also see opportunity with our Atlantic neighbors. The blue economy is estimated to double from \$1.5 trillion in 2010 to \$3 trillion in 2030. Stronger partnerships across Atlantic countries can be a mechanism to share knowledge, spread best practices, and identify activities that will provide sustainable economic returns from the ocean now and preserve it as a resource for future generations.

We are also a Pacific nation, with strong cultural and historical ties to our neighbors throughout the Pacific region. We have a strong interest in a prosperous, secure, and free and open Pacific community. The Pacific Islands countries are amongst those most at risk from climate change, and some of the strongest global voices on the need to work collectively to combat the climate crisis. They are looking to the United States to lead the world on this issue.

Our neighbors in the Pacific depend heavily on healthy ocean ecosystems to support fisheries and tourism industries that drive their economies, which face continuing economic impacts from the pandemic. The United States seeks to partner with the Pacific Islands to help them strengthen their economies, increase their resilience to climate change and environmental threats, improve their security, and overcome barriers to accessing adequate financing for these solutions.

Similarly, countries in Central and South America are seeking our help in protecting their waters. Costa Rica, Colombia, Ecuador, and Panama are working together to strengthen the Eastern Tropical Marine Corridor (CMAR). This corridor supports critical fisheries for tuna and other valuable species and is an

important swimway for blue whales, hammerhead sharks, leatherback sea turtles, and giant manta rays. Countering IUU fishing in the region could also help the U.S. combat narcotrafficking, with which it has become deeply intertwined.

We are also working globally to protect and enhance the resilience of valued marine ecosystems. Coral reefs annually provide over \$3.4 billion of economic benefits, including by supporting tourism and supporting fisheries, and close to \$94 million in avoided flood damage. NOAA Fisheries estimates that the coral reefs of the United States alone have a commercial value of over \$100 million. However, these critical elements of many healthy coastal ecosystems are existentially threatened by ocean acidification and increasing sea surface temperature. It is estimated that over the last 40 years, half of the world's coral reefs have disappeared, and the majority of those remaining could be gone by 2050. This year alone, warming waters resulted in coral bleaching in 91% of reefs surveyed along the Great Barrier Reef, marking the fourth large-scale coral bleaching event in the last seven years.

The United States remains at the forefront of coral reef conservation and is committed to advancing efforts to protect and restore coral reefs. To that end, the United States is a strong supporter of the International Coral Reef Initiative (ICRI). We currently serve as chair of ICRI and were among its founding partners. Established in 1995, ICRI is a unique public-private partnership of governments, international organizations, scientific entities, and non-governmental organizations committed to reversing the global degradation of coral reefs. The United States and ICRI have demonstrated a clear commitment to prioritizing coral reef conservation and restoration and to reversing the twin crises of climate change and biodiversity loss, with all the tools and assets we can assemble.

Finally, the United States is taking an active role in galvanizing ocean-based climate solutions globally.

Ocean-based climate solutions have the potential to provide up to 20% of the emissions reductions needed to keep the 1.5-degree goal within reach. These solutions include protecting and restoring coastal ecosystems, expanding offshore renewable energy, and decarbonizing the shipping sector. Scaling up these efforts at home takes effective steps to combat the climate crisis, and supporting other countries in doing the same helps them build critical technical capacity.

As the co-hosts of the Our Ocean Conference in Palau in April 2022, the United States showcased our leadership in advancing ocean-based climate solutions. For example, the United States collaborated with Denmark and the Marshall Islands to more than double the number of countries participating in the Declaration on Zero Emission Shipping by 2050, which we worked together to launch at COP26. These new participants include shipping powerhouse Cyprus as well as several small island states: Palau, Tuvalu, and Vanuatu. This initiative and others represent key steps towards decarbonizing the global shipping sector, which currently has an emissions trajectory that is incompatible with the goals of the Paris Agreement.

We are also growing capacity at home and abroad for offshore renewable energy. At the Our Ocean Conference, we highlighted our goal to deploy 30 gigawatts of offshore wind by 2030 and announced technical assistance, subject to domestic procedures, and other required resources to advance climate goals and create good jobs. We also spurred countries including the UK, Norway, Belgium, and Sri Lanka to make their own offshore renewable energy announcements at the conference, which will add approximately 30 gigawatts of capacity.

Lastly, the United States is committed to conserving at least 30% of our land and waters by 2030, because we know that conservation of natural spaces is key to both adapting to and mitigating climate change and its effect on the ocean. Just this year, we have established a new national marine sanctuary in Lake Michigan, Wisconsin and a new national estuarine research reserve in Connecticut.

And we are supporting other countries as they take steps to conserve their own ocean resources. At the Our Ocean Conference, we announced a new global Ocean Conservation Pledge, encouraging countries to commit to conserve, protect, or restore at least 30 percent of waters under their national jurisdictions by 2030. We are also working with partners globally to finalize an ambitious and effective agreement for the conservation and sustainable use of high seas biodiversity that would create, for the first time, a coordinated and cross-sectoral approach to establishing high seas marine protected areas and help us achieve our goal of conserving 30 percent of the global ocean by 2030.

Taking these steps to advance ocean-based climate solutions in the United States and support other nations with the resources to do the same is key to security worldwide. These mitigation and adaptation initiatives reduce the risk of future

global instability as a result of the climate crisis and help us protect marine resources for generations to come.

In sum, the threats we face at the ocean-climate nexus are daunting, and the scale of our response must be equal to the size of our challenges. The ocean is a global system, essential to the well-being of all life on our planet. The steps we take today to address and adapt to climate change and its impacts such as sea level rise, extreme weather, and food insecurity are critical to American security and stability for generations to come. This is the year to turn the tide on oceans — to tackle the challenges and make the investments needed to ensure that oceans are central to solving the climate crisis.

From the Our Ocean Conference, which generated over \$16 billion in ocean commitments, to the upcoming UN Ocean Conference, G7 Ministerial, Convention on Biological Diversity meeting, and COP27, the United States has many opportunities this year to position ourselves as a global leader on ocean-climate issues, support our partners abroad as they seek sustainable solutions to ocean challenges, and pursue bold steps needed to reverse the decline of our ocean. We must continue this pace of urgent action and maintain this momentum. This is our chance to work together with our partners around the world to build a future for our children and grandchildren that is in harmony with the ocean and free from climate conflict. If we act now, we can achieve a healthy ocean that will continue to meet their needs – surely a future we all wish to see.