United States input for the 17th Informal Consultation of States Parties to UN Fish Stocks Agreement: “Sustainable Fisheries Management in the Face of Climate Change”

The United States welcomes the opportunity to share information related to climate change and sustainable fisheries management in support of the 17th Informal Consultation of States Parties to UN Fish Stocks Agreement. This document summarizes U.S. efforts to assess and address the impacts of climate change on fisheries, implement ecosystem-based fisheries management and the precautionary approach, and incorporate economic, social and cultural aspects into sustainable fisheries management. The document concludes with a brief discussion of future actions to advance climate change adaptation in international fisheries, including related to the need for increased action within regional fisheries management organizations/arrangements (RFMO/As) and other regional fisheries bodies (RFBs), as appropriate.

The United States is actively developing methods to assess the impacts of climate change on fisheries, with an emphasis on user-friendly tools and interdisciplinary research.

The U.S. National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS or NOAA Fisheries) uses Climate Vulnerability Assessments (CVAs) to assess the vulnerability of

The Distribution Mapping and Analysis Portal (DisMAP) is a user-friendly and interactive website designed to provide visualization and analysis tools to better track, understand, and respond to shifting distributions of marine species. DisMAP, launched in the spring of 2022, provides distribution information for over 400 marine fish and invertebrate species caught in fishery-independent surveys conducted by NOAA and its partners. The portal allows users to quickly identify species that have experienced changes in their distributions and abundance over time. Users can explore maps of species distributions, view time series plots showing changes in spatial indicators (e.g., center of biomass), and download data for exploration outside the portal in 9 U.S. regions: Eastern Bering Sea, Northern Bering Sea, Aleutian Islands, Gulf of Alaska, Main Hawaiian Islands, U.S. West Coast, Gulf of Mexico, Southeast U.S. Shelf, and Northeast U.S. Shelf.

Broadly, ongoing U.S. research aims to support climate informed management by reviewing available management approaches, documenting and predicting changes in productivity and regime shifts, and understanding the on-ramps for climate science into the fisheries management process (e.g., Klaer et al. 2015; Morrison and Termini, 2016; Holsman et al., 2019; Link et al., 2021; Szuwalski et al., 2023). U.S. scientists are identifying and integrating ecosystem indicators into stock assessments through research that aims to incorporate environmental information into the standardization of indices of abundance and ecosystem status reports (e.g., Schirripa and Goodyear, 2016; Shotwell et al., 2022; Lucey et al. ,

Current System (Future Seas) and U.S. west coast groundfish fisheries (GC5).

The United States aims to address the impacts of climate on fisheries through the development and implementation of scientific and management strategies, predictive tools, and regional scenario planning.

The NOAA Fisheries Climate Science Strategy (Link et al., 2015), which was developed to meet the growing demand for information to better prepare for and respond to climate-related impacts on U.S. living marine resources and resource-dependent communities. The Strategy is intended to tailor and prioritize ongoing federal fisheries research toward seven key priorities that range from building science infrastructure to identifying climate-informed referen9 (c)0.7 (t)6.2.8 (e)7.3 .6 (e)7.

NOAA Fisheries has recently launched the NOAA Climate, Ecosystems, and Fisheries Initiative (CEFI) which aims to build a nationwide, operational ocean modeling and decision support system to provide marine and coastal resource managers with the actionable information and capacity they need for climate-ready decision making, including forecasts of ocean conditions, risk assessments and evaluation of alternative adaptation strategies. Central to this effort is a recognition that without adaptation efforts, fisheries management is likely to become less sustainable as the distribution and abundance of fish stocks change

regulations have been implemented. Because these areas have been closed to fishing, there is little data to determine if they are performing as intended. Using PRiSM, NOAA Fisheries generated metrics to assess the

Fisheries Strategies for Changing Oceans and Resilient Ecosystems by 2030 (FishSCORE 2030) is an endorsed Programme under the UN Decade of Ocean Science to help sustain fisheries as a global source of food and jobs, while protecting ocean ecosystem health and enhancing equitable benefits from fisheries. The endorsed Decade Programme brings together scientists, fishers, resource managers, community practitioners and policymakers to move marine fisheries towS0 cs 6 600.36 425n -0 0 144 Tm [(p

approaches to organizing governance structures. The United States strongly encourages that RFMO/As should proactively plan for changes in fish distribution and abundance, among other impacts of climate change.

There is no one-size-fits-all solution to the challenges that climate change creates for international fisheries. International collaboration and cooperation are vital to ensure sustainable management of fisheries. Recent years have seen a substantial increase in global focus on climate change and the urgent need for mitigation and adaptation. Efforts through the UNFCCC Ocean and Climate Change Dialogue and other international meetings (e.g., through FAO, RFMO/As and other multilateral organizations) offer opportunities to share best practices and lessons learned across the fishing sector. These opportunities and meetings like the 17th Informal Consultation of States Parties to UN Fish Stocks Agreement – are critical venues for information exchange and consensus-building. Mitigation and adaptation will only be possible with diverse, comprehensive approaches. With that in mind, the tools, strategies, and initiatives listed here present a starting point to define what sustainable management of fisheries looks like in the face of climate change.

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