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 chang and sustainable fisheries management in support of the 17th Informal Consultation of States Parties to UN Fish Stocks AgreenTibist document summarizes U.S. efforts to assess and address the impacts of climate change on fisheries, implement ecosystemsed 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 i 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 developingethods to assess the impacts of climate change on fisheries with an emphasis on useriendly tools and interdisciplinary research.

The U.S. National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS or NOAA Fishesies <u>Climate Vulnerability Assessmen</u>(©VAs) to assess the vulnerability of The Distribution Mapping and Analysis Portal (DisMAis) a user friendly and interactive website designed to provide visu**tib**raand 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 fishein dependent 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 plotshowing changes in spatial indicatoes 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 (CMexico, Southeast U.S. Shelf, and Northeast U.S. Shelf.

Broadly, ongoing U.S. research aims to support climate informed managementby reviewing available management approaches, documenting and predicting changes in productivity and regime shifts, and understanding the oramps for climate science into the fisheries management process (e,gKlaer et al.2015; Morrison and Termini, 2016; Holsman et al2019; Link et al2021; Szuwalski et a2023). U.S. scientists are identifying and integrating ecosystem indicators into stock assessmentbrough research that aims to incorporate environmental information into the standardization of indices of abundance and ecosystem status reports (eSghirripa and Goodyear, 2016; Shotwell et al2022; 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.

TheNOAA Filseries Climate Science Strate(tyinket al., 2015), which was developed to meet the growing demand for information to better prepare for and respond to climatelated impacts on U.S. living marine resources and resourcependent communities. The Strategy is intended to tailor and prioritize oroging federal fisheries research toward seven key priorities that range from building science infrastructure to identifying climatenformed referen9 (c)0.7 (t)6.2.8 (e)7.3 .6 (e)7. NOAA Fisheries has recently launched the NOMAate, Ecosystems, and Fisheries Initiative (CEW) hich 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 climateady 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 20130an 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 bringsherg 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 onsizefits-all solution to the challenges that climate change creates for international fisheries. International collaboration and cooperation are vital to ensure sustainable maement 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 meetingse(.g.,through FAO, RFMO/As and other multilateral organizations) offer opportunities to share best practices and lessonslearned across the fishing sector. These opportunitiand meetings like the 17th Informal Consultation of States Parties to UN Fish StocksAgreement- are critical venues for information exchange and consensusbuilding. Mitigation and adaptation will only be possible with diverse, comprehensive approaches. With that in mind, the tools, strategies, and initiatives listed here present a strar point to define what sustainable management of fisheries looks like in the face of climate change.

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