ABSTRACT

By 2100, ocean waters are expected to be substantially warmer than they are today, with profound effects on fisheries. One of the most commonly observed impacts of climate change is through shifts in species distributions, and recent evidence suggests that marine fish and invertebrates closely follow climate velocity (the rate and direction that isotherms move across the seascape). Despite broad recognition of impacts, however, incorporating climate considerations into fisheries management has been challenging. Here, we describe a new web-based tool that will help managers, scientists, fishermen, and the public track shifts in the distribution of the nation’s marine fish and other animals with changing ocean conditions. The OceanAdapt website is the result of a partnership between NOAA Fisheries and Rutgers University that annually aggregates marine biological survey data from around North America. The effort is part of the growing trend towards open science and can help in the preparation of climate vulnerability analyses or in the prioritization of species for more focused adaptation efforts.

BIOGRAPHIES

Dr. Malin Pinsky is an Assistant Professor in the Department of Ecology, Evolution, and Natural Resources at Rutgers University. His research focuses on the responses of coastal marine communities to climate change and variability, both in temperate North America and on tropical reefs of the western Pacific. Much of his work uses long-term ecological datasets or population genomic methods. He is an Alfred P. Sloan Fellow in Ocean Sciences, was a David H. Smith Conservation Research Fellow at Princeton University, received his Ph.D. in Biology from Stanford University, and holds an A.B. in Biology and Environmental Studies from Williams College.

Dr. Jonathan Hare is the director of the NOAA Narragansett Laboratory and oversees the operational oceanography programs for the Northeast Fisheries Science Center. He is also involved in regional and international ocean observing activities and climate change studies. Jon received a BA in Biology from Wesleyan University. He earned a PhD in Oceanography from SUNY Stony Brook. His research has focused on fisheries oceanography: understanding the interactions between the ocean environment and fisheries populations with an aim of contributing to assessments and management. Jon also examines the effect of climate change on fish population dynamics. This work involves coupling the output of IPCC-class climate models with fish population models to simulate the effects of climate change on population dynamics.