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Experts Release Latest Science on How California Can Prepare Fisheries for Climate Change

OAKLAND, Calif. -- In an analysis of the potential impacts of climate change on California fisheries in the next few decades, a 13-member team of experts has provided the State with a report on the best-available science on impacts to fisheries, including commercially important species such as crab, squid, and sardines.

To address a gap in scientific information that will benefit sustainable fisheries management, the report includes new information on climate change that is directly applicable to California fisheries management, detailing changes that could impact all fish stocks and fishing communities in California. The report presents four future scenarios and identifies seven management strategies to prepare for impacts and opportunities, including actions that can be implemented immediately.

The new report was requested by the California Department of Fish and Wildlife and funded by the California Ocean Protection Council. The experts who synthesized the findings as a working group of the Ocean Protection Council's Science Advisory Team, led by California Ocean Science Trust, represented fisheries economics and ecology, oceanography, human dimensions, and climate science fields. Fisheries managers were also included on the working group. The group was co-chaired by Francisco Chavez of The Monterey Bay Aquarium Research Institute and Christopher Costello of University of California, Santa Barbara.

The findings emphasize that climate change will result in more variability and unpredictability for both fish stocks and fishing communities. Changes already underway will affect not only commercial, recreational, and subsistence fishermen, but also buyers, processors, wholesalers, retailers and consumers; support industries such as equipment, fuel and ice suppliers; families and community networks.

Three key points are made in the report:

- Climate change has linked ecological, social and economic consequences for California fisheries.
- There are approaches to fisheries management that can help fishing communities and fish and invertebrate stocks prepare for, adapt to, and respond to climate variability.
- Some fisheries are now adopting these flexible, adaptable management strategies as they experience the effects of a changing climate. Lessons learned from these fisheries can be leveraged to allow management to adapt to climate impacts throughout the state.

"We are already seeing impacts on California fisheries from climate change", said Christopher Costello, co-chair of the climate change and fisheries working group and Professor of Environmental and Resource Economics at the Bren School of Environmental Science &

Management at UC Santa Barbara, "This report provides managers with the ability to take action now to adapt to the kinds of changes that we are anticipating."

The seven management strategies proposed in the report *Readying California Fisheries for Climate Change* include: 1) Manage for ecological resilience, 2) Manage for social resilience, 3) Expand cross-boundary coordination, 4) Increase research and management capacity, 5) Increase management flexibility, 6) Support fisheries transitions, and 7) Strengthen monitoring and forecasting.

This report responds to an urgent need to provide scientific information and guidance for California's fisheries to adapt and respond to climate change. This guidance will serve as a resource for state managers and may inform the process to amend the Marine Life Management Act (MLMA) Master Plan for Fisheries

"It is a critical time for us to support The California Department of Fish and Wildlife as they confront changing ocean conditions and the vulnerabilities that poses for human communities throughout California," said Leila Sievanen, the California Ocean Science Trust lead on this working group. "Ocean Science Trust is grateful that our state agencies are working with us to keep making decisions with the best and latest science and place California at the forefront of innovative fisheries management."

For information on upcoming community engagement opportunities or to read the report 'Readying California Fisheries for Climate Change' visit <http://www.oceansciencetrust.org/projects/climate-change-and-california-fisheries/>.

About the California Ocean Science Trust:

The California Ocean Science Trust is a nonprofit organization established by the State of California to build trust and understanding in ocean and coastal science. Serving as a liaison between governments, scientists, and citizens, the Ocean Science Trust supports decision-makers with sound, independent science. For more information, go to www.oceansciencetrust.org.

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