

## Department of Environmental Science and Policy Seminar Series

### Short and long-term effects of climate change on marine social-ecological system dynamics

*Owen Liu, National Oceanic and Atmospheric Administration*

**DATE:** Friday, 11/05/2021 **Time:** 10:30 am **Room:** SLAB103

**Zoom:** <https://bit.ly/3ntliZi>



**Abstract:** Climate change can drive both press disturbances, like long-term temperature change, and pulse disturbances, like marine heatwaves. These disturbances in turn can cause changes in the distribution and behavior of humans and animals alike. This talk will describe two projects from the US west coast that investigate the dynamics of marine social-ecological systems under climate change. In the first portion of the talk, I will explore how Dungeness crab fishers responded to a multi-year marine heatwave from 2014-2018 that caused unprecedented changes in the fishery. In the second portion, I will describe a new project that links downscaled ocean climate models with species and fishing distribution models to project likely changes in the west coast groundfish fishery over the next 80 years. Throughout, the talk will consider how sustainable management of marine ecosystems requires an interdisciplinary approach to research.

**Bio:** Owen Liu is a National Research Council Postdoctoral Research Associate at the Northwest Fisheries Science Center, a research group within the National Marine Fisheries Service and the National Oceanographic and Atmospheric Administration (NOAA). He investigates marine ecosystem dynamics using data-driven, quantitative approaches from fisheries science, data science, and ecology. He seeks to understand and predict how climate change and other human impacts like fishing ripple through ecosystems and affect vulnerable species and human communities, in order to inform sustainable management. Owen received his Ph.D. in 2019 from the Bren School of Environmental Science and Management at the University of California, Santa Barbara.