Implications of climate change for fisheries: The human dimensions

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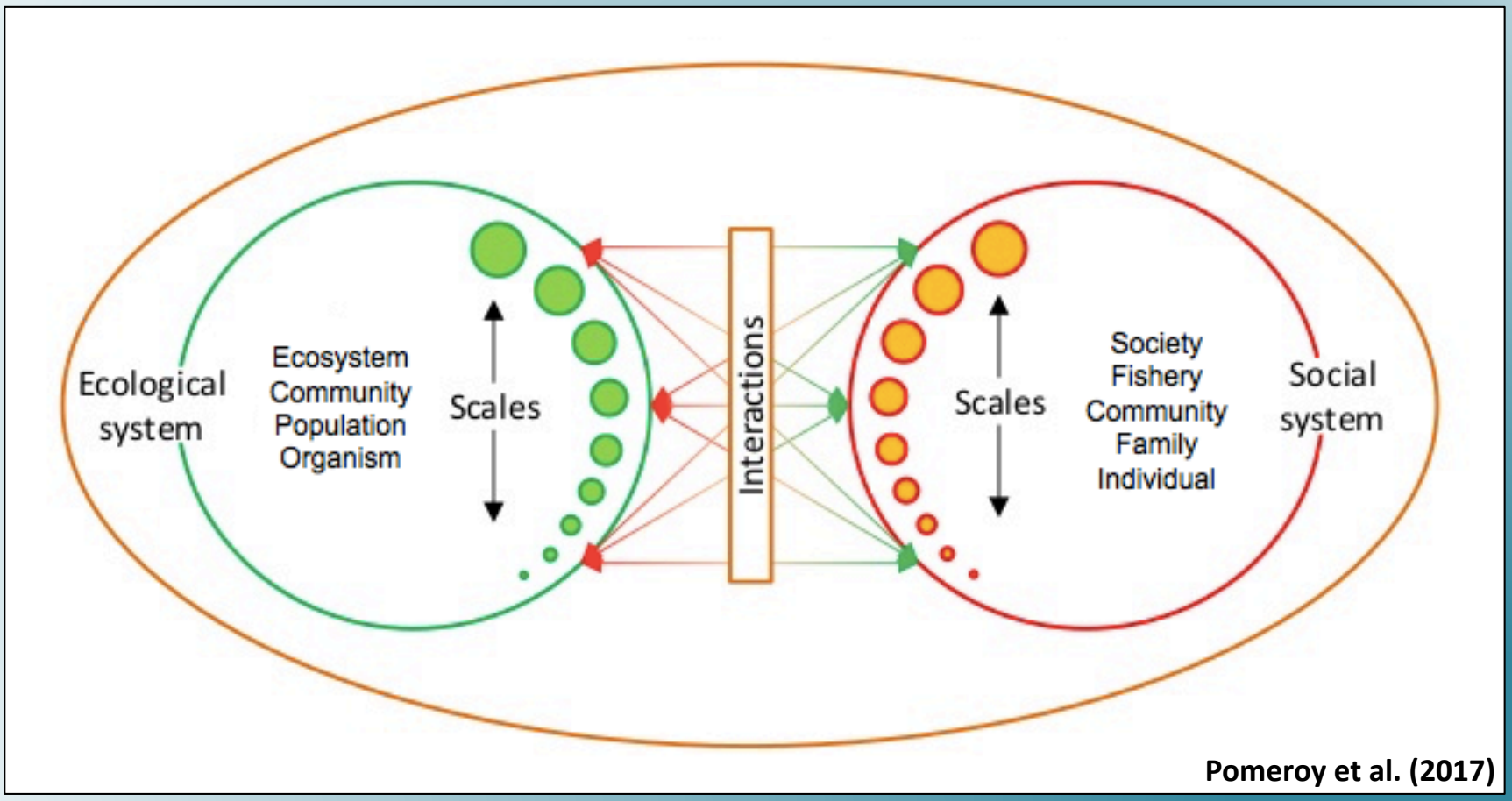
Fisheries as integrated social-ecological systems

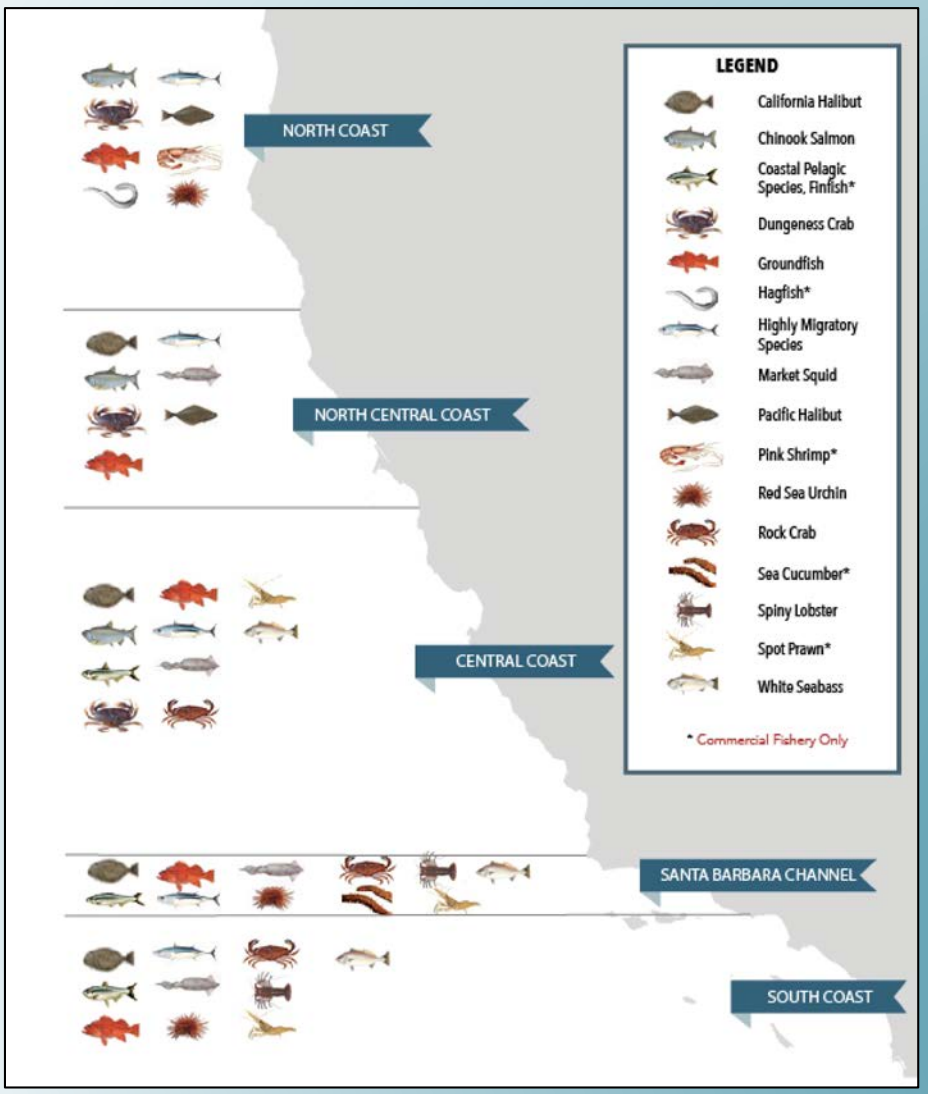


Pomeroy et al. (2017)

Safe, Sustainable & Secure Seafood Supply

Resilient Coastal Communities & Economies

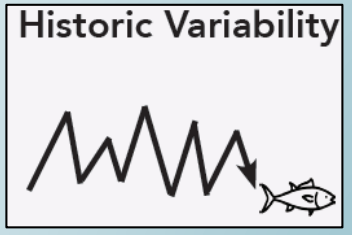
Diverse fisheries, participants, and communities

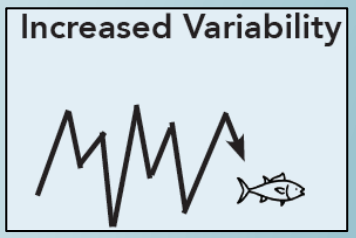


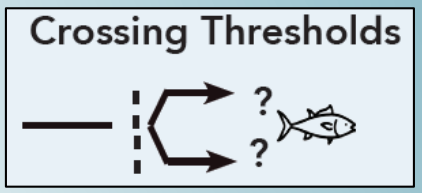
The most common commercially- and recreationally-caught species in each of California's five coastal regions. (Chavez et al. 2017)

Readying California Fisheries for Climate Change

Four climate change scenarios







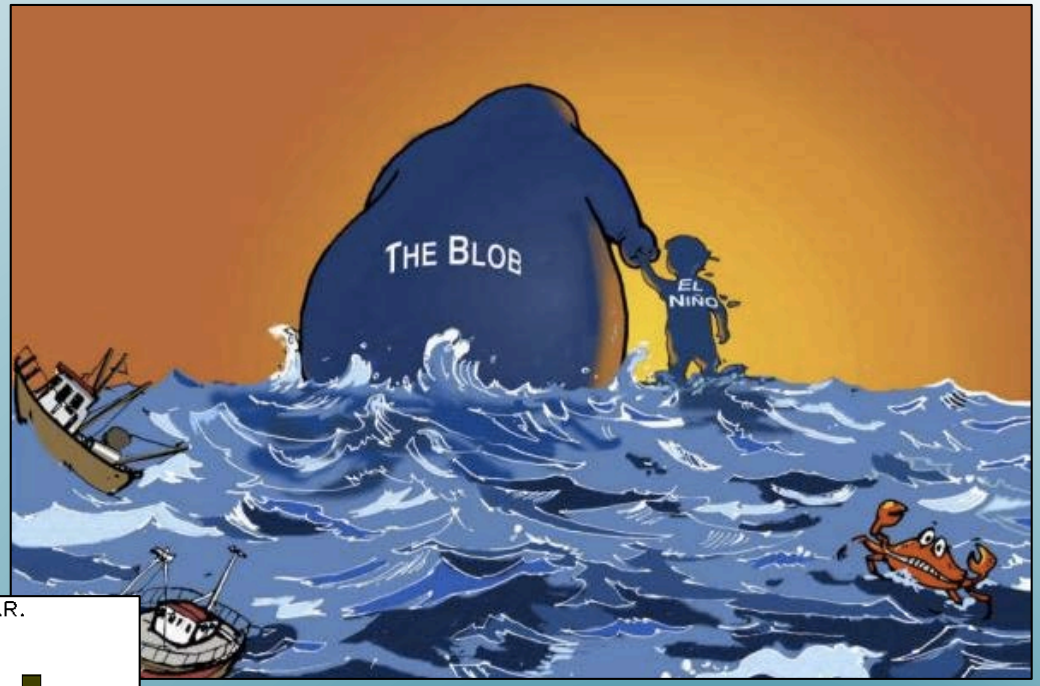
Responses and impacts

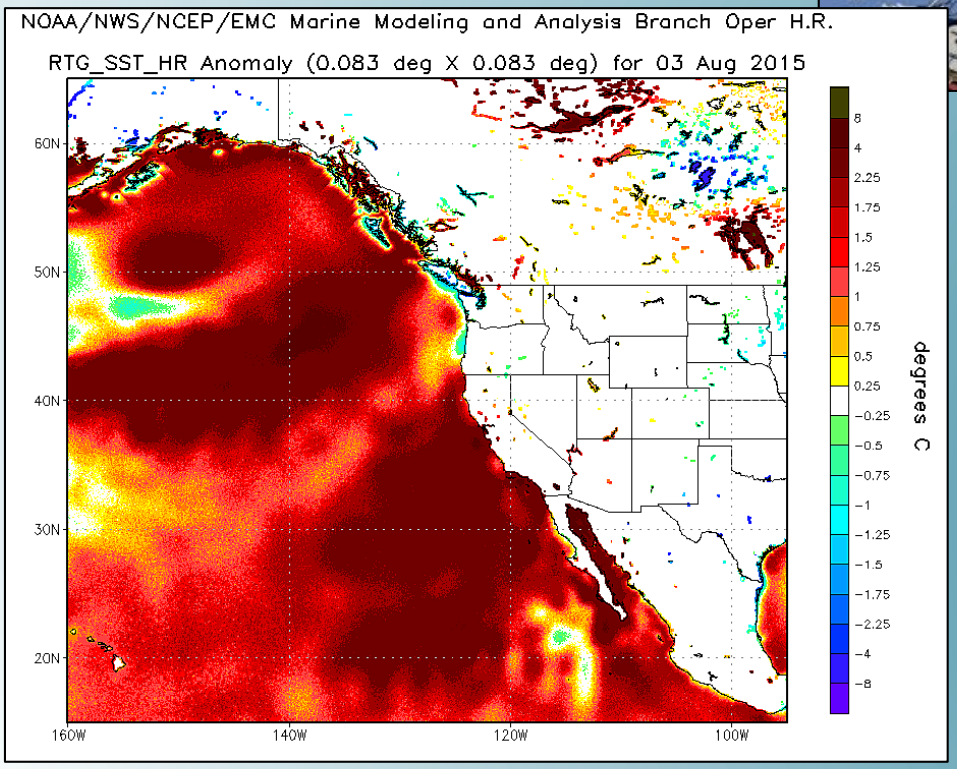
- Ecological impacts
- Potential human responses
- Potential social and economic implications

Vulnerabilities

- fish and invertebrates
- fishing communities

US West Coast 2015-16





- Persistent, widespread, harmful algal bloom (HAB)
- Elevated levels of domoic acid (DA) toxins

The First Challenge: Protect Public Health

Health risk: Serious

- Amnesic shellfish poisoning (ASP)

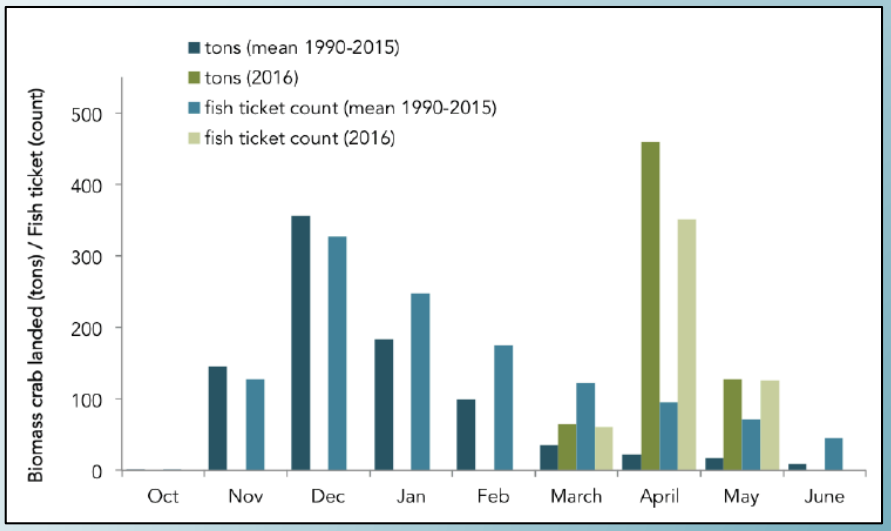
Exposure risk: Highly variable

- Timing and geographic distribution
- Among and within species
- Handling, preparation & consumption

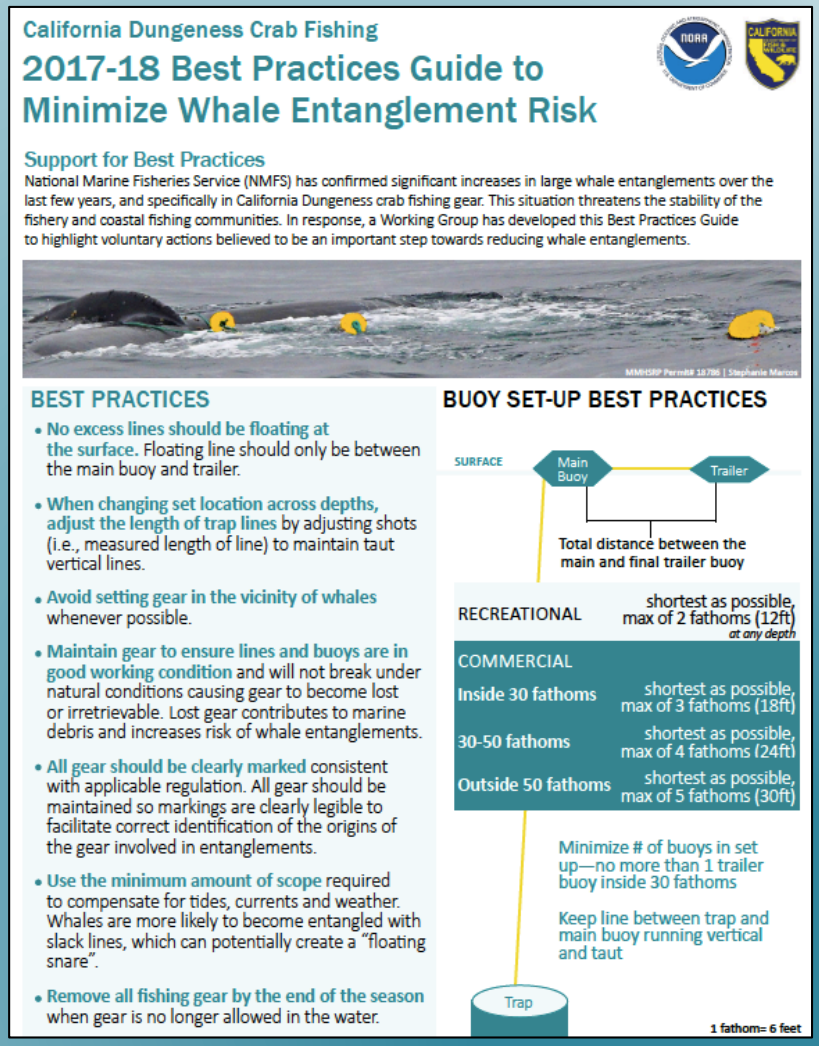
Risk management: Tricky

- Fishery closures/delayed openers
- Seafood consumption advisories

The Second Challenge: Protect Ecosystem Health



Chavez et al. 2017



Implications for the fisheries social system

Looking to the future

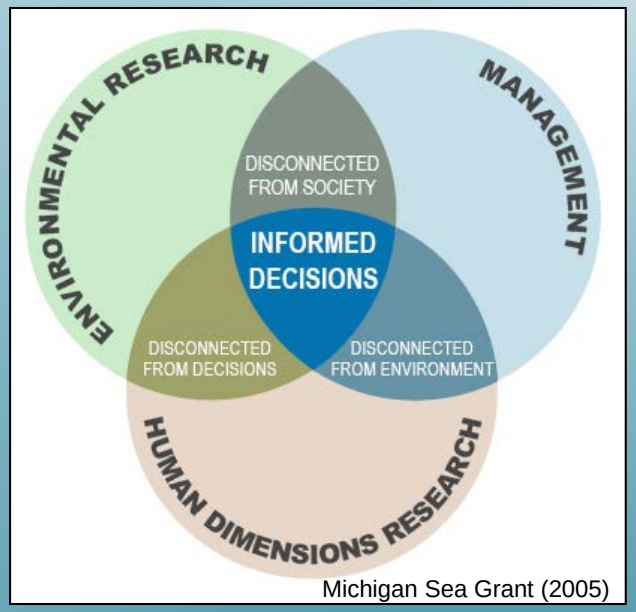
Fisheries are

- complex, dynamic social-ecological systems
- natural resource *and* food systems

Climate change has linked ecological, social, cultural, and economic consequences for fisheries and communities

Better understanding is key to

- avoid unintended consequences
- ensure ecological *and* human health and well-being



Michigan Sea Grant (2005)

Thank you!

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