Rethinking the blue planet: New Approaches to Social-ecological Resilience for Marine Protected Areas in a Climate-changing World

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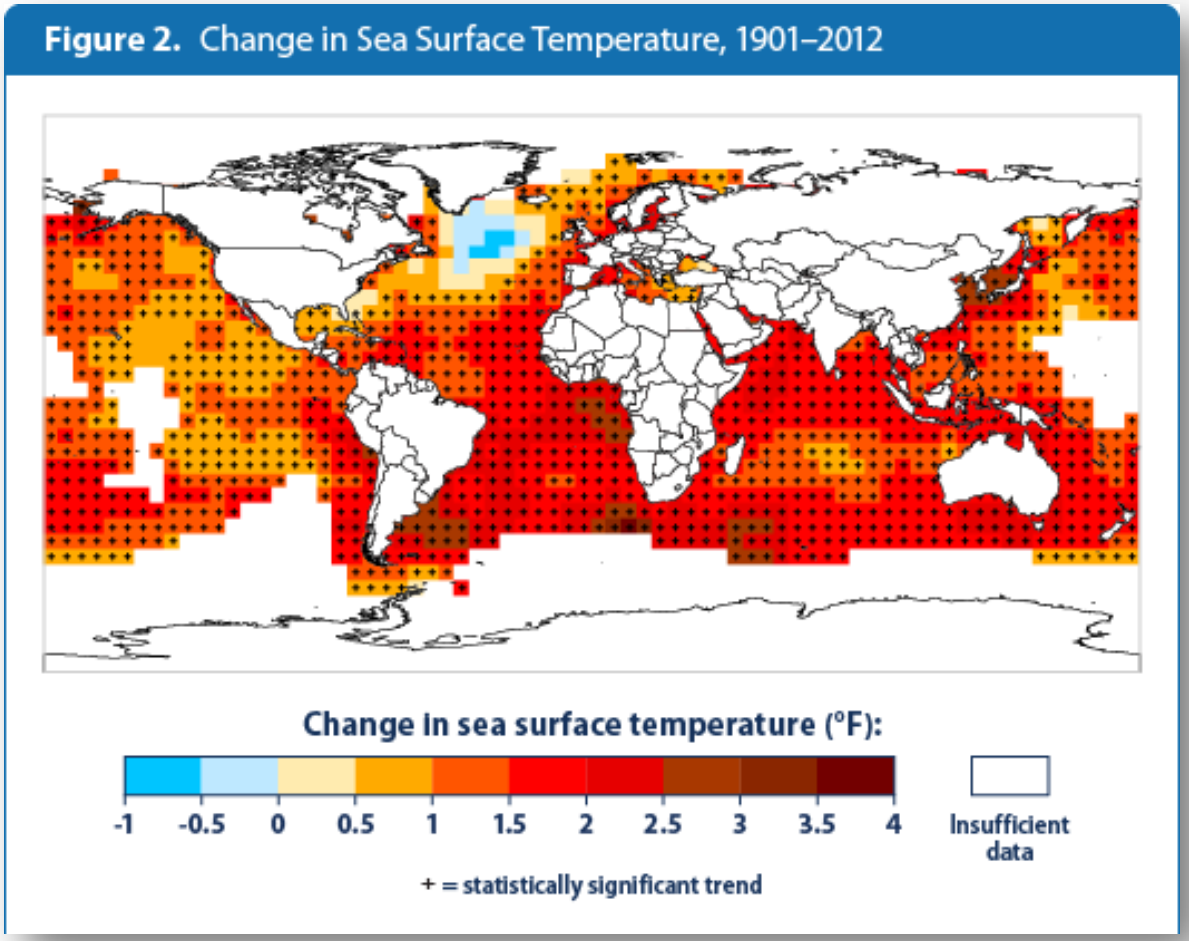
Traditional design and management of MPAs has particular characteristics

DESIGN – biodiversity, cultural values, livelihoods

THREATS – Resource exploitation, habitat loss, pollution

New threats, drivers, and combinations



- Direct effects of climate change
- Interactions between existing threats and climate change impacts

Credit: IPCC, 2013. Source: www.epa.gov

Increasing recognition of importance of resilience

- Increasing recognition of importance of social-ecological systems in MPA planning
- Growing interest in MPAs designed and managed to build resilience to climate change, but emphasis on **ecological** resilience only
- Important need for further integration of social science in how MPAs can build **social-ecological** resilience to **climate change**
- The role of human agency is key

What is resilience?

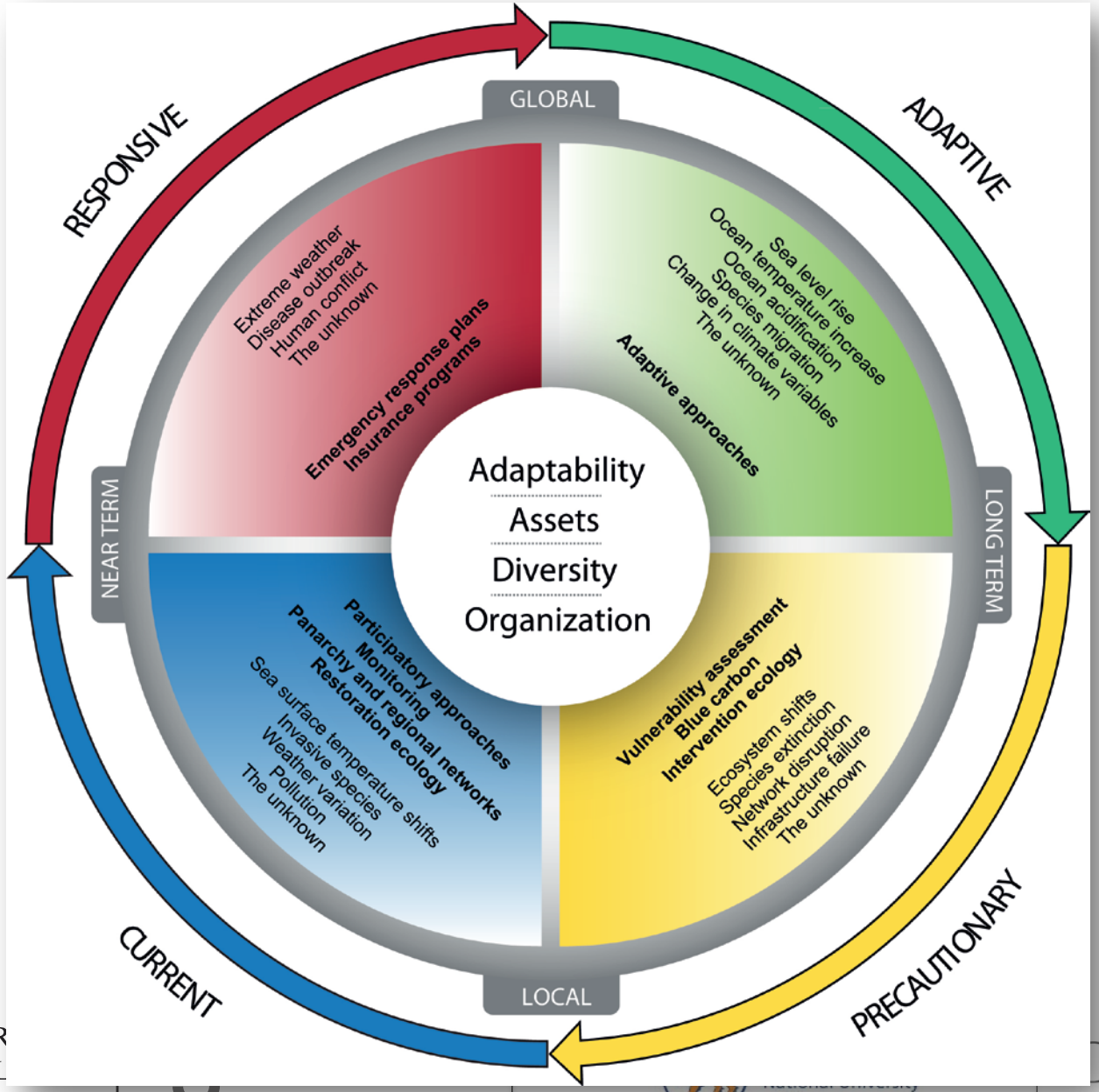
Resilience is the “ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or **improvement** of its essential basic structures and functions.” (IPCC 2012:5)

Spatial and temporal nature of climate change related drivers and impacts on MPAs

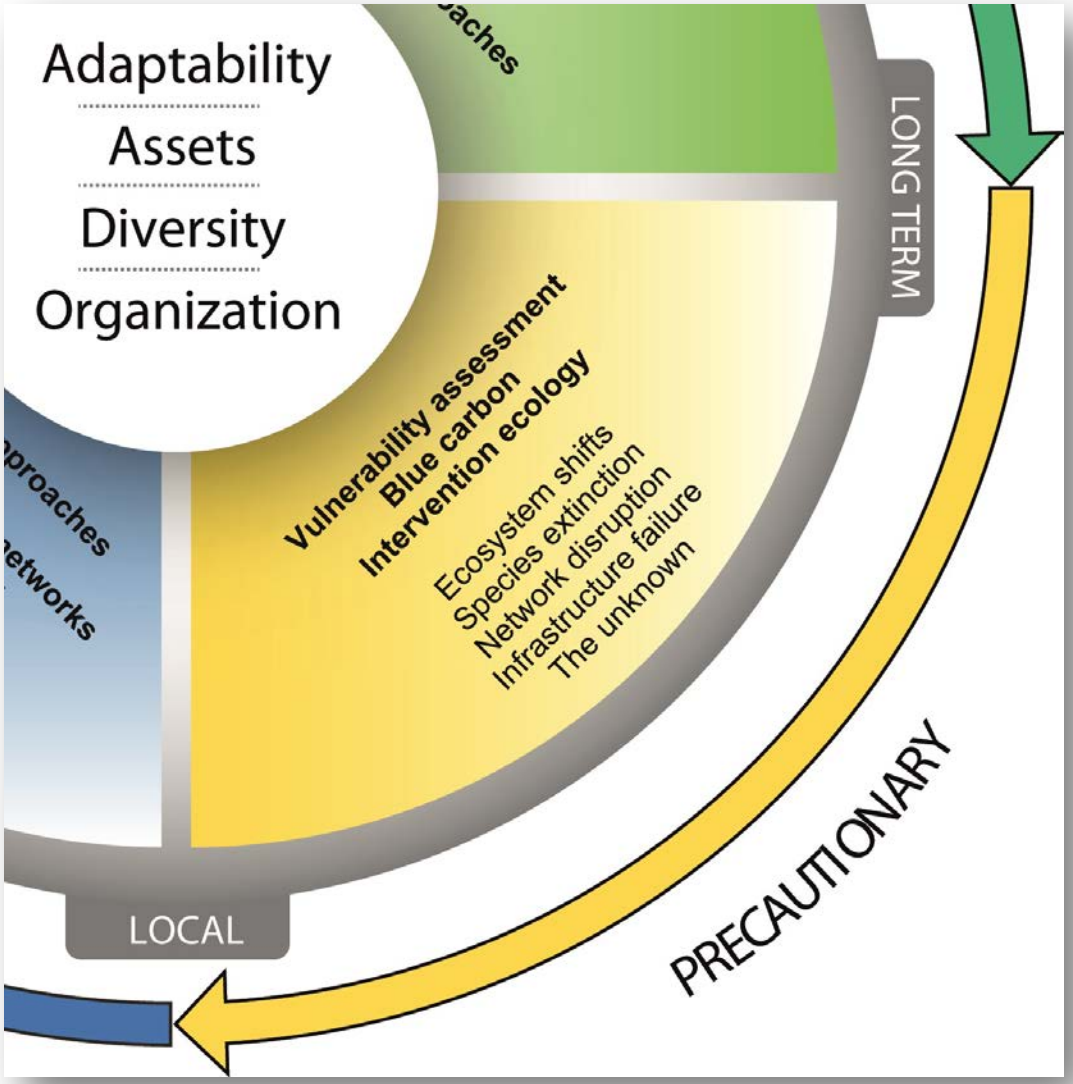
- Drivers of change in MPAs occur at different spatial scales
- Impacts on MPAs occur at different temporal scales
- What are the management implications?

Bleached coral, Great Barrier Reef. Source: www.wikipedia.org

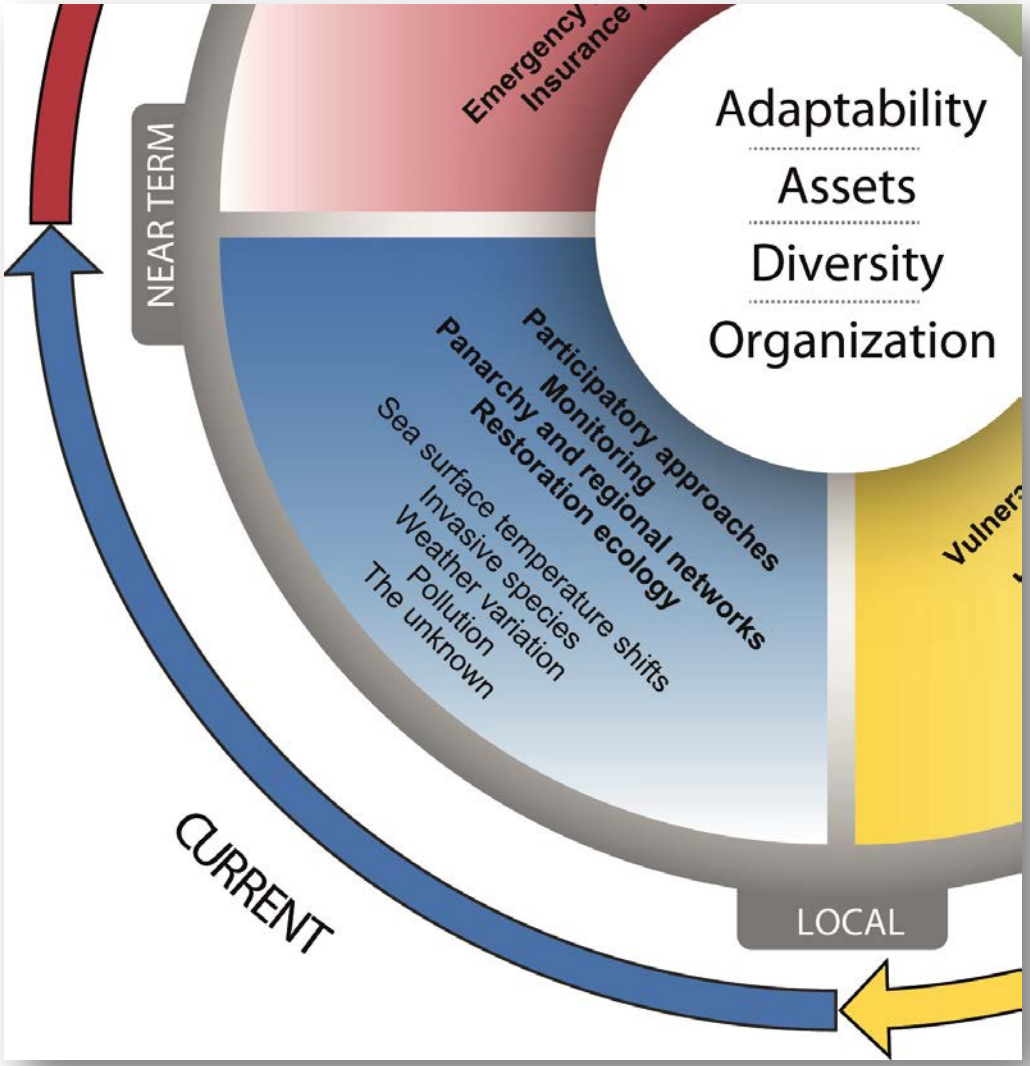
The Framework



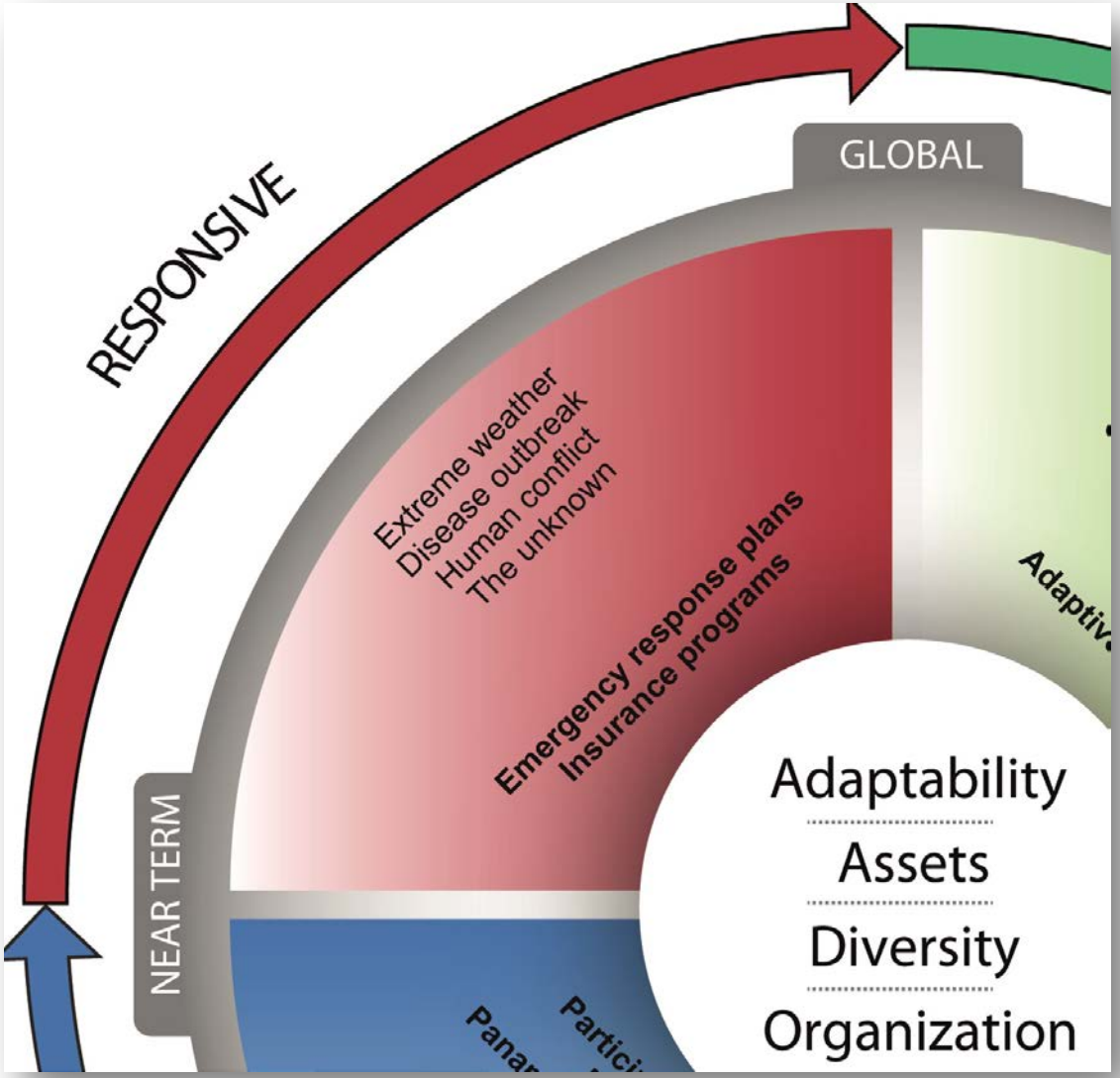
Precautionary Dimension



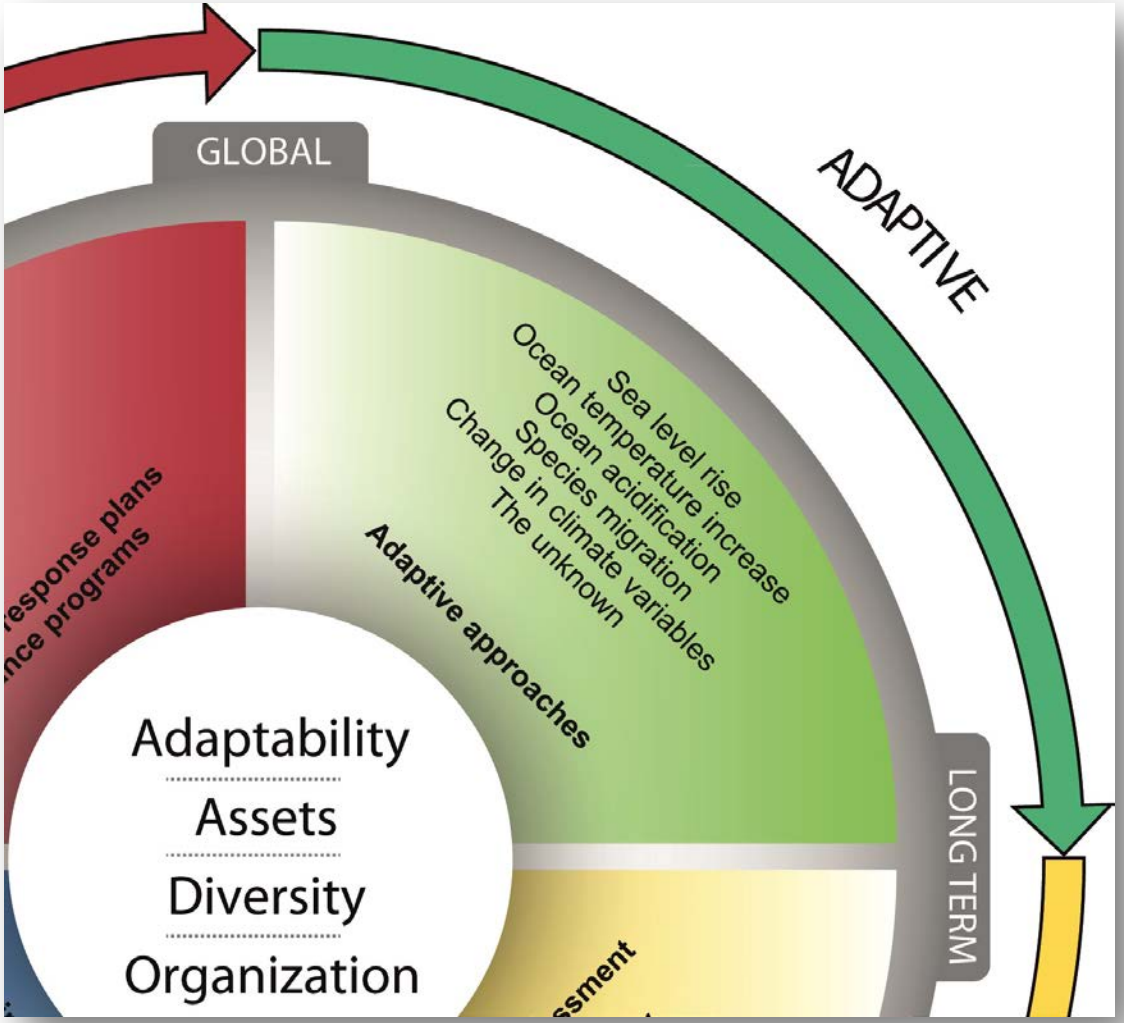
Current Dimension



Responsive Dimension



Adaptive Dimension



Key messages

- Climate change, human pressures, and failures of traditional methods imply the need for new thinking about MPA design and management.
- Social-ecological perspectives that recognize the critical importance of human agency are needed.
- Resilience can include proactive interventions that acknowledge the inevitability of change.
- MPA management can build the components of social-ecological resilience – assets, adaptability, diversity, organization – by understanding the spatial scale of drivers and the temporal scale of impacts, and the combinations of these.

Thank you