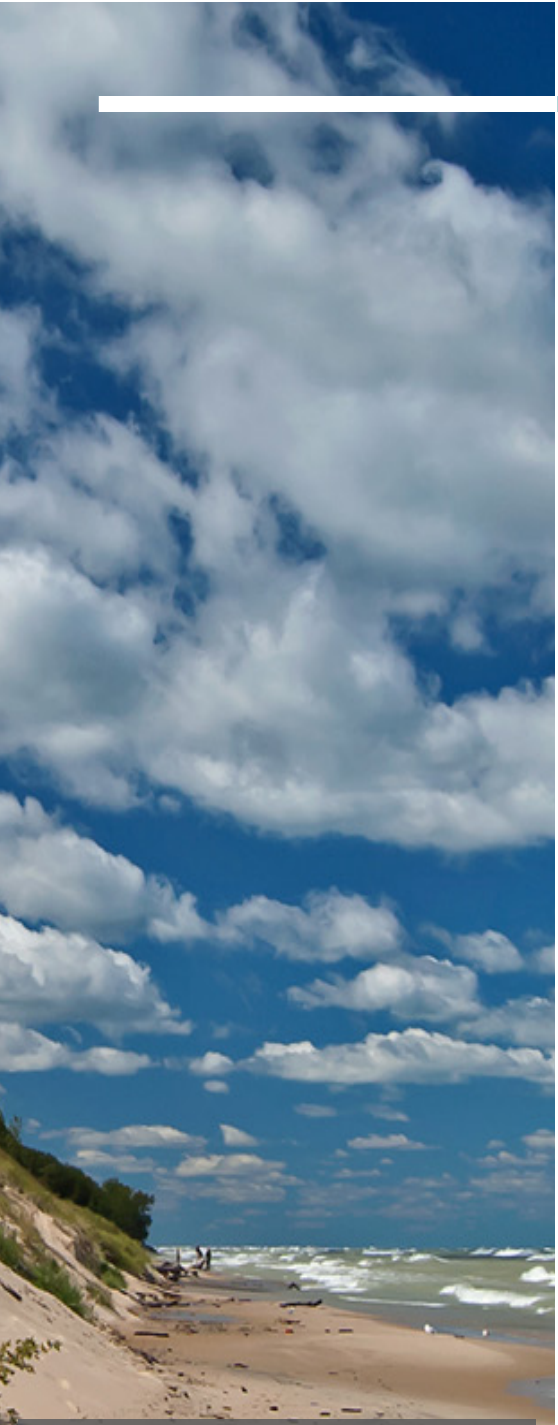


WHO WE ARE

The **Center for Ocean Solutions** is a collaboration among the Stanford Woods Institute for the Environment and Hopkins Marine Station, the Monterey Bay Aquarium, and the Monterey Bay Aquarium Research Institute. The Center's mission is to work towards solving the major problems facing the ocean and prepare leaders to take on these challenges.

The **Natural Capital Project** is a collaboration among the Stanford Woods Institute for the Environment, University of Minnesota, World Wildlife Fund and The Nature Conservancy. The Natural Capital Project works to integrate the value nature provides to society into all major decisions.

Stanford Law School is a well respected legal institution with a historic background in research and application of policy—particularly through the Environmental and Natural Resources Law & Policy Program.

Integrating Coastal Vulnerability Modeling and Land Use Planning

Prioritizing nature-based strategies for a resilient coast

Rising sea levels, population growth along coastlines and increasing hazards associated with coastal storms have set coastal communities on a collision course with the risks posed by climate change.

Yet management decisions on coastal development and defense operate at short-term temporal scales that often fail to adequately account for long-term climate impacts and recognize the potential role of natural infrastructure in protecting people and property from rising seas and storms.

Our proposed spatial approach to connecting coastal vulnerability modeling with land use planning can provide a critical framework and set of tools to enable successful adaptation to a changing climate in California and beyond.

Our interdisciplinary team of scientists, analysts and legal scholars from the Center for Ocean Solutions, Natural Capital Project, and Stanford Law School will work with California coastal decision makers to co-produce an online decision-support tool that will highlight where natural habitats in coastal California play the greatest role protecting people, property and other coastal assets.

In addition, the tool will recommend restoration projects that meet the least legal and political resistance, explore any legal impediments to using nature-based strategies, and provide examples of where such strategies have been successfully implemented.

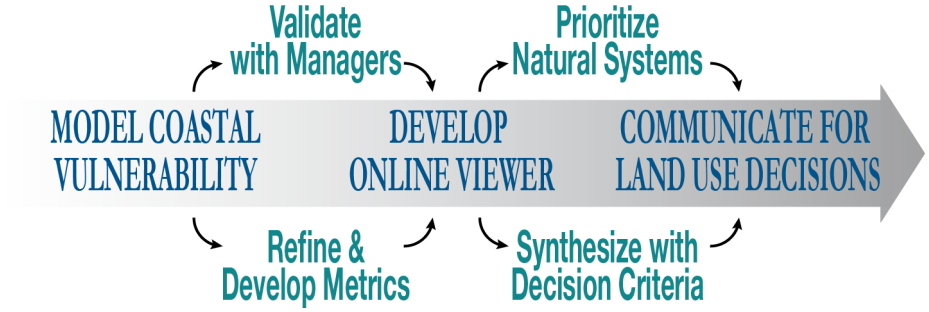
Coastal armoring often succumbs to erosion and wave action.

Coastal dunes provide natural protection from storms and runup.

Project Objectives:

- Conduct multi-scale coastal vulnerability modeling in California
- Identify, with state and local coastal managers, the coastal areas highly dependent on natural ecosystems for protection
- Create, where needed, new biophysical and socio-economic metrics for decisions
- Develop an online viewer with a mapping interface to visualize modeling results and to synthesize decision-relevant metrics
- Communicate investment and policy opportunities to guide decisions

How we will develop solutions:



Through iterative, interdisciplinary engagements with coastal managers, we will build a transferable approach to bridge climate impact science with applicable land use decisions.

Our Audiences:

State and Federal Goverment Agencies:

- California Coastal Commission
- Ocean Protection Council
- State Coastal Conservancy
- NOAA Office for Coastal Management

Coastal Planners:

- County-level Governments
- Local Resource Management Agencies

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