Incorporating Natural Capital into Climate Adaptation Planning

Interdisciplinary approach to resilient coastal planning

Eric H. Hartge[1], Suzanne M. Langridge[2], Erin E. Prahler[1,3], Katie Arkema[2], Gregg Verutes[2], Lisa M. Wedding[1], Sarah M. Reiter[1], Molly L. Melius[1], Mary Ruckelshaus[2], Anne Guerry[2], Margaret R. Caldwell[1].

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Who & What?

Interdisciplinary team applying best available ecosystem services science

Scientists, lawyers, engineers, economists, and analysts partnering with **coastal decision makers** to include multiple benefits of natural infrastructure into coastal adaptation planning.

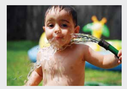
Why?

Preservation of coastal habitats for future generations

- Climate impacts threaten coastal habitats
- Loss of habitat decreases beneficial services
- Adaptation strategies that include the role of habitat increase benefits

Flood Protection


Recreation


Water Quality


Fisheries


Biodiversity

How?

Iterative collaboration with coastal planners

- Identify coastal habitats relevant to the planning region
- Refine data, models, and approach to reflect regional processes
- Communicate results to resonate within local decision contexts

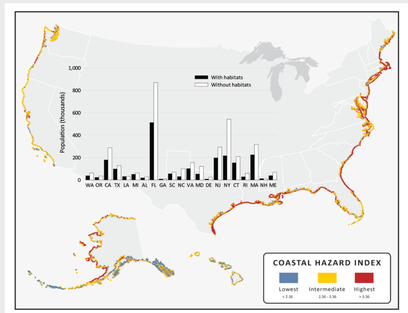
Spatially explicit ecosystem service decision support tool

InVEST integrated valuation of environmental services and tradeoffs

InVEST Coastal Vulnerability model provides quantitative estimates of the role of natural habitats in reducing vulnerability through erosion and inundation.

www.naturalcapitalproject.org/invest.html

Geographic Downscaling from National to Local



National Level

Arkema et al. coastal vulnerability analysis for the entire U.S.

Regional Level

Multi-county analysis in central California to transfer lessons between jurisdictions

County Level

Sonoma County analysis to inform adaptation strategy selection for Local Coastal Program

Increasing analysis resolution for local decision making context

Iterative Approach through Interdisciplinary Engagements

Conduct Due Diligence → Run Initial Analysis → Adjust Analysis → Revise (Extend) Analysis Using Scenarios → Incorporate Information into Planning Process

Consult with Planners

Consult with Planners and Oustide Influencers

Through these efforts, we are building a transferable approach to include the benefits from coastal habitats in different coastal climate adaptation contexts.

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1. Center for Ocean Solutions, Stanford University
2. Natural Capital Project, Stanford University
3. California Coastal Commission

Poster design by Eric Hartge
ehartge@stanford.edu