

Adaptation Planning Frameworks for Resilient Natural Resources

BOSC SC Meet the Scientists

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Progress for a Stronger Future

Natural resource managers, decision makers, regional partners and interagency working groups have expressed the need for:

- Improved methods for using vulnerability information to design effective adaptation options in the context of climate change
- Assistance with better integrating adaptation design concepts into existing management planning processes
- A streamlined synthetic framework for organizing, understanding and integrating resilience-based knowledge into decision analysis and project design



Adaptation Design Tool

What:

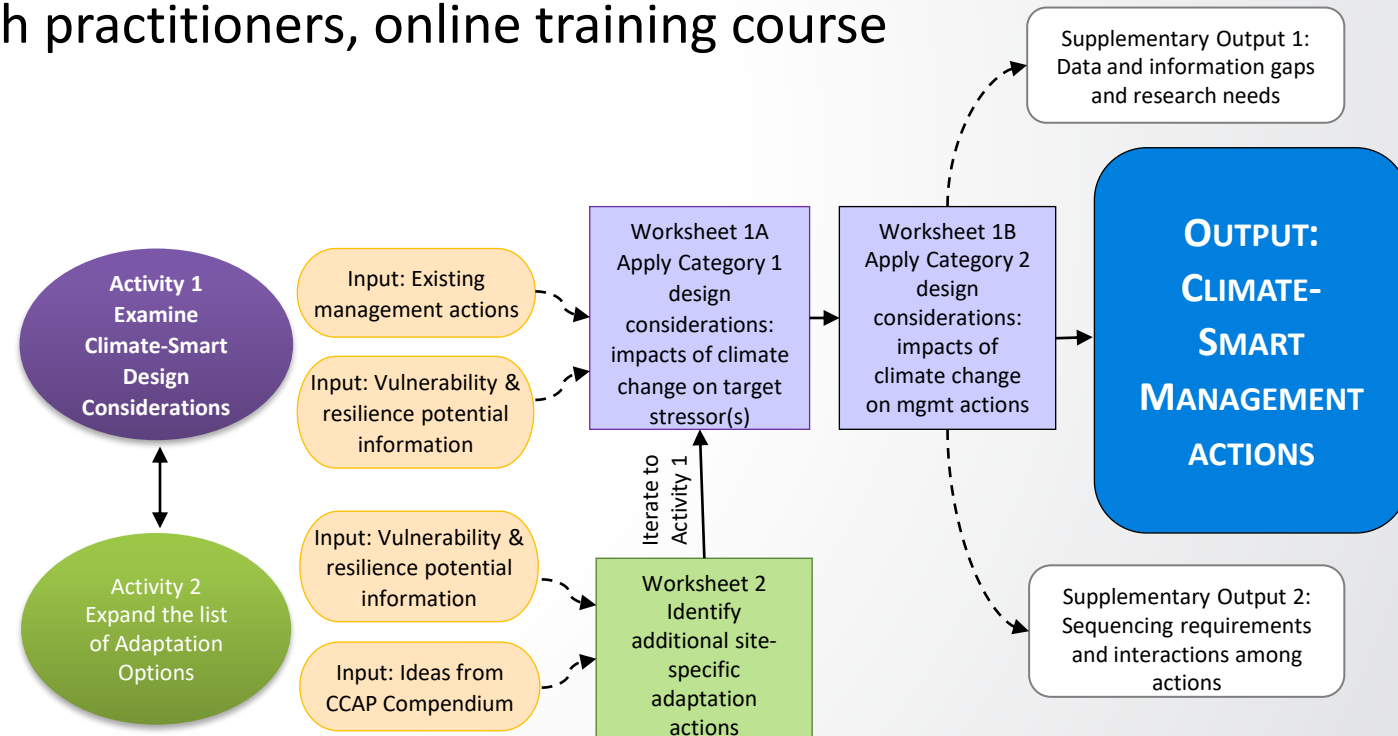
- Tool that guides users through a systematic process to (1) adjust current management actions to be more climate-smart and (2) brainstorm and craft additional adaptation options
- Collaborative development and testing with practitioners, online training course

Impact:

- Used by partners in Puerto Rico, Hawaii, Florida, Chesapeake Bay, New Caledonia
- Has helped practitioners progress beyond understanding vulnerability, to adaptation design for more robust decision making

Next steps:

- EPA Regions 9 and 3 are exploring use for program planning and permitting design



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Manager's Guide to Restoration Planning & Design

What:

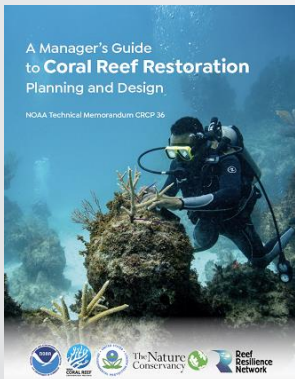
- Adaptive process viewed through a climate-smart lens; the first four steps are goal-based planning
- Mentored online training and tailored action planning workshops with Pacific coral reef jurisdictions

Impact:

- Action plans completed by teams in American Samoa, Northern Mariana Islands, Guam, Hawaii
- Completed action plans are being used by teams to propel implementation

Next Steps:

- Peer-to-peer webinars for information sharing, technology transfer and feedback on action plans



Restoration Process Steps:

1. Set Goal and Geographic Focus
2. Identify, Prioritize, and Select Sites
3. Identify, Design, and Select Interventions
4. Develop Restoration Action Plan
5. Implement Restoration
6. Monitor and Evaluate Progress



Step 3 parts:

- 3A. Identify an Array of Intervention Options
- 3B. Apply Climate-Smart Design Considerations
- 3C. Evaluate and Select Interventions

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Synthetic principles for adaptation & decision analysis

What:

- An organon that helps stakeholders link to examples of how to organize, translate and integrate concepts of adaptation and resilience into existing decision-making processes
- Synthesizes results from ORD research on coral reefs, coastal wetlands and riverine systems to derive universal themes

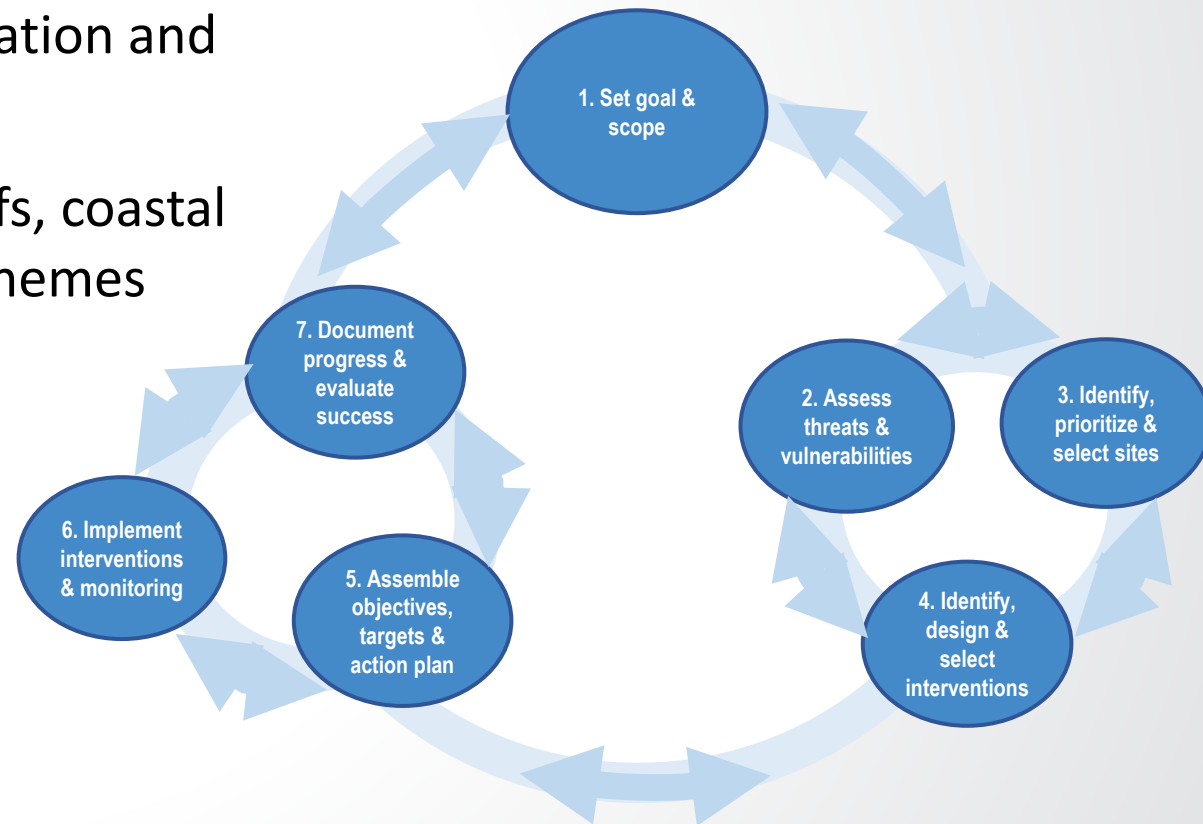
Impact:

- A technical advisory group of OW, Regional and ORD colleagues who work with stakeholders interested in resilience have affirmed the utility of the draft organon and asked for broader sharing

Next Steps:

- With team, design and implement a collaborative study to beta-test the organon in an applied setting

Adaptation Organon for Resilient Natural Resources





Partners and Collaborators

Contact: Jordan West (west.jordan@epa.gov)

Adaptation Design Tool

- David Cuevas, Region 2
- Hudson Slay, Region 9
- State of Hawaii; Territory of Puerto Rico
- Chesapeake Bay Program
- NOAA; DOI
- The Nature Conservancy
- Government of New Caledonia

Restoration Guide

- David Cuevas, Region 2
- Hudson Slay, Region 9
- State of Hawaii; Territories of American Samoa, Guam and Commonwealth of the Northern Mariana Islands
- James Cook University, Australia
- NOAA; USGS
- The Nature Conservancy

Adaptation Organon

- Susan Jackson, OW-OST
- Rochelle Labiosa, Region 10
- Regina Poeske, Region 3
- Hudson Slay, Region 9
- Britta Bierwagen, ORD-CPHEA
- Ted DeWitt, ORD-CPHEA
- Joe Ebersole, ORD-CPHEA
- Emily Eisenhauer ORD-CPHEA
- Peg Pelletier, ORD-CEMM
- Cathy Wigand, ORD-CEMM





Adaptation Design Tool

- West et al. (2016) [Principles of climate-smart adaptation planning](#) (*Env Mgmt*)
- Parker et al. (2017) [User guide](#) (hosted on NOAA website)
- [Online training course](#) (2017) (hosted on TNC website)
- West et al. (2018) [Adaptation Design Tool](#) (*Env Mgmt*)
- Gibbs and West et al. (2018) [How to improve your “climate-smart IQ” using the Adaptation Design Tool](#) (Coast Guard magazine)
- [Chesapeake Bay Program report](#) (2018)
- Gibbs and West (2019) [Resilience assessment of Puerto Rico’s coral reefs](#)
- Gibbs and West et al. (2021) [Incorporating adaptation and resilience into an integrated management plan](#) (PLOS ONE)

Restoration Guide

- [A Reef Manager’s Guide to Coral Reef Restoration Planning and Design](#) (2020):
- [Online training course](#) (2019)
- [Webinar presentation on the guide](#) (2020) with Guam and American Samoa user testimonials
- In prep: EPA report demonstrating how to use the guide workbook to produce a Restoration Action Plan, using a case study example for the goal of coastal protection services

Organon for Resilient Natural Resources

- Interactive slide deck and four webinar presentations available on request