

# Developing Wetland Restoration Priorities for Climate Risk Reduction and Resilience in the MARCO Region

Environmental Law Institute

January 24, 2017

Webinar

# Mid-Atlantic Regional Council on the Ocean (MARCO) – Climate Change



# Analytic Approach

- Literature Review and Identification of Tools
- Interviews
- Expert Panel Meeting – January 2016 (Washington, DC)
- Development of Conceptual Framework
- Expert Panel Meeting – May 2016 (Trenton, NJ)
- Draft Report
- Review and Final Report

# Developing Wetland Restoration Priorities for Climate Risk Reduction and Resilience in the MARCO Region



**Analysis for the Mid-Atlantic Regional Council on the Ocean (MARCO) to  
support a Framework for prioritizing wetlands as Natural and Nature-Based  
Features for Climate Risk Reduction and Resilience**

Environmental Law Institute  
December 2016



**MARCO**  
MID-ATLANTIC REGIONAL  
COUNCIL ON THE OCEAN

# Definitions

- **Climate risk reduction** – protecting coastal communities and infrastructure from flooding, storms, erosion, salt-water intrusion, and direct injury.
- **Climate resilience** – conserving or restoring sufficient natural assets to allow ecological systems to function and adapt under continuing climate impacts.
- **NNBF-** Natural and Nature-Based Features useful in climate risk reduction and resilience (USACE).

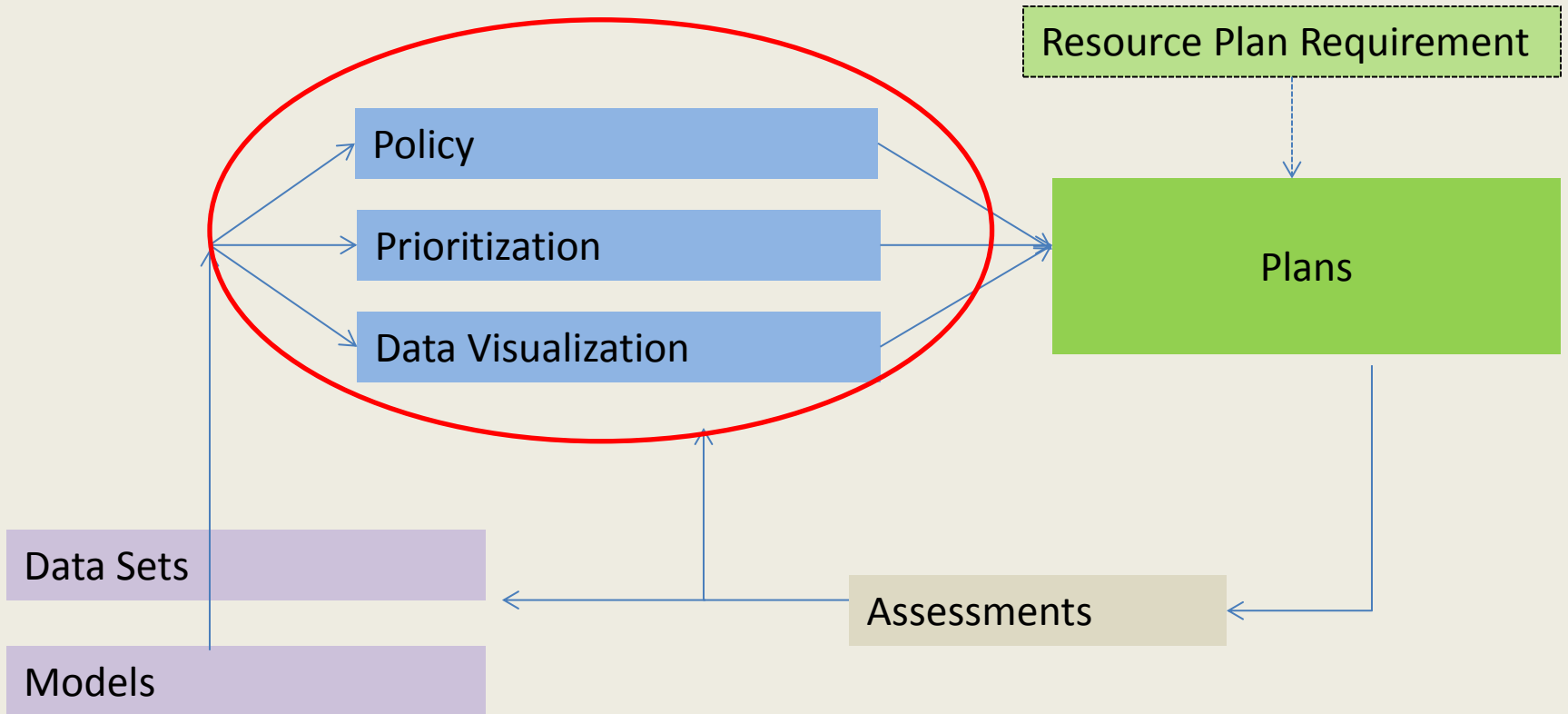
# Types of Tools Identified

- Statewide policies
  - Regulatory requirements
  - Statewide vulnerability assessments
  - Local vulnerability assessments
  - Habitat classification systems
  - Wetland plans
  - Climate action plans
  - Open space plans
  - Wildlife action plans
  - Forest plans
  - Storm recovery plans
  - CELCP plans
  - Infrastructure plans
  - Climate, coastal, and adaptation research agendas
  - Models
  - Data repositories
  - Data visualizations
  - Monitoring/Assessment
  - Communications tools
- [ELI and research team identified over 70 tools in use across the MARCO states]

# Goals for Framework

- A simple set of defined program elements for attention as states seek to improve wetland prioritization for risk reduction and resilience
- Opportunity for continuous improvement by disparate actors at discontinuous rates.
- Maximum opportunity for learning among state participants, and adoption of approaches as they are seen to work.

# Common Framework





# Three key framework elements

## **Policy**

Articulate one or more policies concerning use of wetlands as natural or nature-based features in achieving risk reduction and resilience.

Policies should drive toward greater specificity and prescriptiveness as experience is gained.

# Three key framework elements

## **Prioritization**

Systematic priority-setting should (1) include climate risk reduction and resilience objectives, and (2) make distinctions among potential choices for expenditures and staff attention among geographies, wetland types, shorelines, and over defined time horizons.

Priority setting schemes are most useful where they can generate a reproducible outcome – viz. the methodology is reproducible and transparent

# Three key framework elements

## **Data Visualization**

- Commitment to data visualization is an essential element to ensure implementation and program continuity over a long time horizon.
- It is critical to public communication and outreach.
- It makes spatially explicit choices visible to other government agencies, legislators, local officials, and nongovernmental actors.

# Policy Examples

- Conservation and restoration of key wetland complexes in place
- Marsh migration corridor protection
- Living shoreline requirements/preferences
- Coastal infrastructure requirements/preferences
- Habitat diversity policies for resiliency

# Prioritization Examples

Numerous examples in MARCO region, including:

- NYC Tidal Marsh Systems Analysis
- Coastal Land Conservation in Maryland

(Today's panelists will discuss these and others – focusing on their development and use in decision making).

**All tools are linked in the Report**

# Data Visualization Examples

- NOAA's Digital Coast (and Viewers)
- SLAMM-View
- TNC's Coastal Resiliency Toolkit
- NY Coastal Risk Areas
- NY Coastal Resilience Map
- DE Sea Level Rise Inundation Map
- Maryland's GreenPrint
- Virginia's Comprehensive Coastal Resource Management Portal

# Best Practices – Process Improvements

- **Policies to use wetlands as NNBFs should be clearly stated by each MARCO state to support risk reduction and resilience across all programs.** Adopted policies should specifically address: conserving identified existing wetland complexes, conserving/restoring marsh migration corridors and areas for future wetlands, and targeting support for living shorelines in the right places.
- **All prioritization schemes for wetland conservation, restoration, and management for risk reduction and resilience should articulate what goals they seek to achieve and what threats they seek to offset or mitigate.** The ability to harmonize use of data and models across the region is most relevant where the outputs are aimed at communicating the “why” as well as the “where” and “when.”
- **MARCO states should mandate wetland NNBF priority setting in all updates of related resource planning programs.** Each required update of a resource management plan offers an opportunity to advance risk reduction and resilience using the funds and planning resources then available to the program that is updating the plan.
- **Build a data visualization component into each priority-setting action.** A well-thought-out data visualization tool supports policy and priority-setting approaches and makes the tradeoffs and choices apparent.

# Best Practices - Harmonization

- **Develop a vision for the entire region with respect to what future wetland NNB conditions are desired.** Policies and plans should be improved, working toward a converging regional vision with attention to regional, local, and parcel-level spatial scales.
- **MARCO states and collaborators should adopt time-scales for goal setting and monitoring that are consistent across the region.** In standardizing time horizons, it is important to address near-term risk reduction, middle-term climate adaptation, and long-term resilience.
- **Support the continuing harmonization of data and information analysis methods.** Cooperative exchanges, events and science webinars should be supported to address the needs of managers for actionable information. Common data sets and tools should focus on *vulnerabilities*, and on developing regionally consistent analytic methods to define and measure risk reduction and resilience *opportunities* and performance measures.
- **MARCO and regional partners should develop technical best practices to assist marsh migration.** Targeting and priority setting that has a marsh migration focus must be supported by research supporting enhanced technical capacity to support acquisition, planning, and managing expectations for wetland adaptation areas including addressing design and decision challenges.
- **Establish monitoring protocols to evaluate progress in achieving NNB goals with wetlands.** Accountability and learning can occur across at least four measures: measuring progress by each state as to its fulfillment of the goals it has set for itself, making data available to independent researchers, determining performance using the dates applied for targeting and vulnerability assessments, and determining whether technical specifications need to be adjusted in light of measured experience.



James McElfish, Rebecca Kihslinger,  
Jessye Waxman  
Environmental Law Institute

[www.eli.org](http://www.eli.org)