Evaluating Ecological and Community Resilience Benefits from DOI's Hurricane Sandy Program

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Hurricane Sandy Evaluation Approach

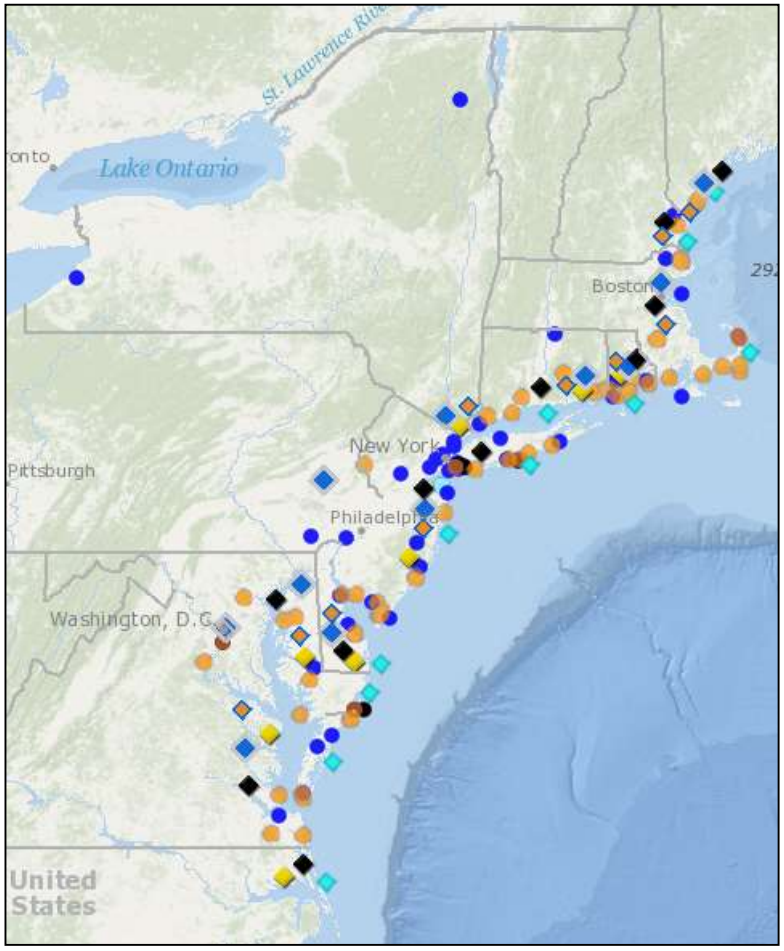
Project Implementation: 2013-2018

Core Metrics Established: 2015

Phase I Evaluation: June ’16 - April ‘18

Long(er)-term Monitoring: 2017-2023

Phase II Evaluation: Dec. ‘22 – Dec. ‘23



Phase I Evaluation: Impact

- **To what extent did projects do what they said they were going to do?**
- **What ecological benefits were realized individually and collectively?**
- **What socioeconomic benefits were realized individually and collectively?**
- **How cost effective were the resilience activities in achieving ecological and socioeconomic resilience benefits?**



Phase I Evaluation: Six Case Studies

1. Regional benefits from projects concentrated in targeted geographies
2. Benefits of scientific data and tools
3. Ecological benefits of priority restoration activities
   - ✓ marsh hydrology restoration
   - ✓ beach and dune restoration
   - ✓ living shoreline restoration
4. Impact of community resiliency planning
5. Resilience benefits of dam removals and culvert replacements
6. Cost effectiveness of green vs. gray infrastructure

Case Study #4:
Community Resilience Planning

To what extent have planning projects impacted community awareness?

To what extent have they led to on-the-ground action to improve resilience?

City of Hoboken, NJ - Transforming Hoboken's Block 12 into a Green Infrastructure Asset (NJ)

Case Study #5:
Aquatic connectivity and flood resilience

To what extent have dam removal and culvert replacement projects led to improved ecological and social resilience outcomes?

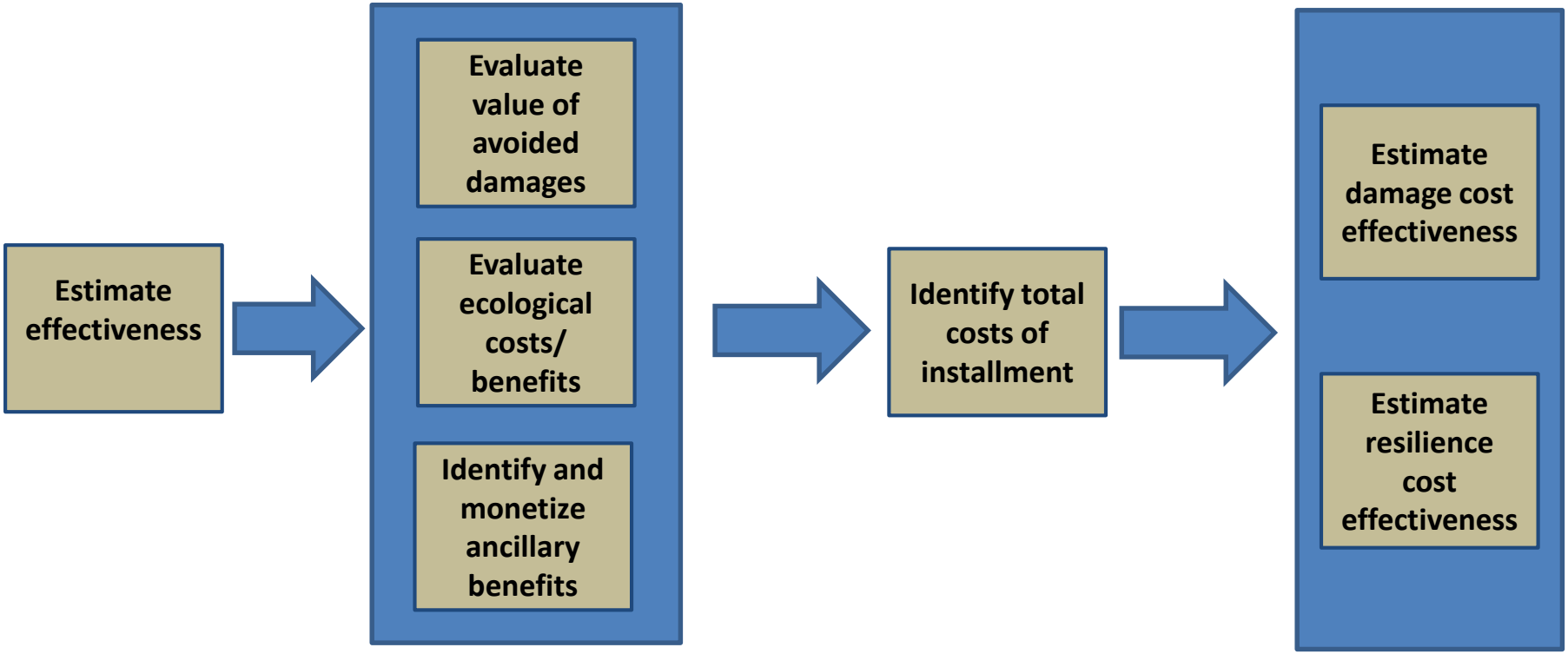
MA Fish & Game Division of Ecological Restoration – Turner Dam

Case Study #6:

Cost Effectiveness of Green vs. Gray Infrastructure

What is the cost-effectiveness of green infrastructure compared to gray infrastructure alternatives for reducing flooding?

Evaluation steps:



Long(er)-term Monitoring: 2017-2023

Marsh Restoration Projects (19)

Beach and Dune Restoration Projects (8)

Aquatic Connectivity Projects (9)

Living Shoreline Projects (8)

Timeline of Evaluation Products Available to the Public

- ✓**Core Ecological Metrics of Resilience (available)**
- ✓**Core Socioeconomic Metrics of Resilience (available)**
- **Resilience Monitoring Database (Dec. '17)**
- **Phase I Evaluation w/Seven Case Studies (April '18)**
- **5-7 Years of Monitoring Data (annually 2017-2023)**
- **Phase II Evaluation (Dec. '23)**

www.nfwf.org/hurricanesandy

www.doi.gov/hurricanesandy

Final Thoughts

"If resilience is built through a project, and no perfect resilience metric is around to measure it, does it have an impact?"

Anonymous, National Adaptation Forum, St. Louis, MO 2015