

ANALYZING THE PERFORMANCE OF OYSTER REEFS FOR SHORELINE PROTECTION



ABOUT

Nature-based solutions (NBS) enhance resilience to coastal hazards, such as storm surge and erosion, while providing co-benefits like habitat and biodiversity conservation.

Oyster reefs are often promoted as NBS for shoreline protection; however, the evidence for this is mixed and based largely on short-term performance evaluations.

WHAT WE'RE DOING

We are evaluating oyster reef NBS shoreline protection performance five or more years post restoration. We will focus on how reef characteristics (e.g. reef dimensions) and biophysical processes (e.g. wave energy) influence performance.

We will compare current reef and shoreline conditions to as-built surveys and initial project monitoring data. We will also conduct an economic analysis by assessing the associated costs and related benefits of oyster reef NBS.

2023

REEF SITE SELECTION

COLLABORATE WITH STAKEHOLDERS TO IDENTIFY PROJECT SITES

2024

SITE EVALUATIONS & HISTORICAL DATA COLLECTION

ASSEMBLE AS-BUILT SURVEYS AND COLLECT REEF, SHORELINE, AND BIOPHYSICAL DATA

2025 - 2026

PERFORMANCE ANALYSIS

COMPARE CURRENT CONDITIONS TO AS-BUILT SURVEYS

WHY IT MATTERS

This project will help us understand what factors lead to increased oyster reef persistence and shoreline protection. Results will guide site selection and design of both natural and eco-engineered reefs. They will also provide a framework for managers to incorporate cost-benefit analyses that inform where we can expect oyster reefs to perform successfully as NBS.

This information is needed by funding agencies to guide funding decisions, regulatory agencies charged with permitting NBS projects, and practitioners doing on-the-ground work to implement projects.

EXPECTED OUTCOMES

For oyster reefs as NBS we will:



Identify critical performance elements



Fill knowledge gaps on long-term performance



Determine the costs and related benefits



Enhance NBS evaluation guidance



Improve decision support

WANT TO HELP?

If you are researching, permitting, or restoring oyster reefs, or are a regulating or funding agency, we would love to talk with you to identify priority projects, performance indicators, and monitoring metrics. Your information and needs are essential to making our products useful. See contact information below.