



**NOAA  
FISHERIES**

Office of  
Habitat Conservation

# Oyster Habitat Restoration Monitoring



## Background

The NOAA Restoration Center is working with partners to develop an oyster monitoring handbook for the eastern oyster (*Crassostrea virginica*) and the Olympia oyster (*Ostrea lurida*), which will be completed by summer 2013. The handbook will include recommendations for monitoring metrics and techniques that will allow for more consistent assessment of restored reefs and beds across regions, tidal elevations, and restoration methods. This factsheet will give applicants preliminary guidance on what will be included in the handbook to help with the development of restoration proposals. Our staff will work with successful applicants on finalizing monitoring plans that follow the handbook guidelines.

## Guidance

The oyster monitoring handbook will recommend universal metrics and environmental variables, which should be monitored for every project no matter what the restoration goal. The handbook will also outline additional goal-based metrics that could be monitored depending on the current state of the science and information gaps, availability of additional funding, capacity, and expertise. And, finally, we will provide guidance on monitoring other variables that—while not required—could be considered to further understand factors that may be affecting restoration performance.

Listed on the following page are the recommended universal metrics and environmental variables, as well as the categories the additional goal-based metrics and restoration variables will fall under.



### Universal Metrics

- Reef Areal Dimension (two metrics)
  - Project footprint = the maximum areal extent of the reef/bed footprint
  - Reef/bed area = the actual area (summed) of patches of living and non-living oyster shell (or other hard substrate) within the project footprint
- Reef Height
- Oyster Density
- Oyster Size-frequency Distribution

### Universal Environmental Variables

- Water temperature
- Salinity
- Dissolved oxygen (subtidal only)

### Additional Goal-based Metric Categories

- Broodstock and oyster population
- Resident and transient species
- Adjacent habitats (e.g., shoreline marsh)
- Water quality

### Additional Restoration Variables

- Disease and Pathogens
- Predation and Competition
- Oyster Reproductive Status

