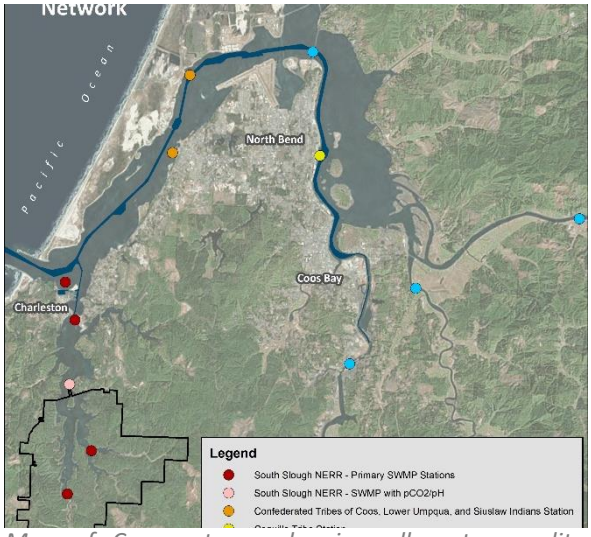
Environmental Monitoring

Monitoring sites throughout the Reserve and Coos Bay allow researchers to track changes to environmental conditions over time.



Map of Coos estuary showing all water quality stations

System-Wide Monitoring Program

The Reserve is a System-Wide Monitoring Program (SWMP) site, part of a nationally coordinated effort between all research reserves to track estuarine conditions. There are 12 monitoring sites throughout the Reserve and Coos Bay.

Water quality-Stations monitor water temperature, salinity, dissolved oxygen, pH, turbidity, and water depth. Map of water quality stations.

Weather-The Reserve's SWMP weather station measures air temperature, relative humidity, barometric pressure, wind direction and speed, precipitation, solar radiation, and photosynthetically active radiation.

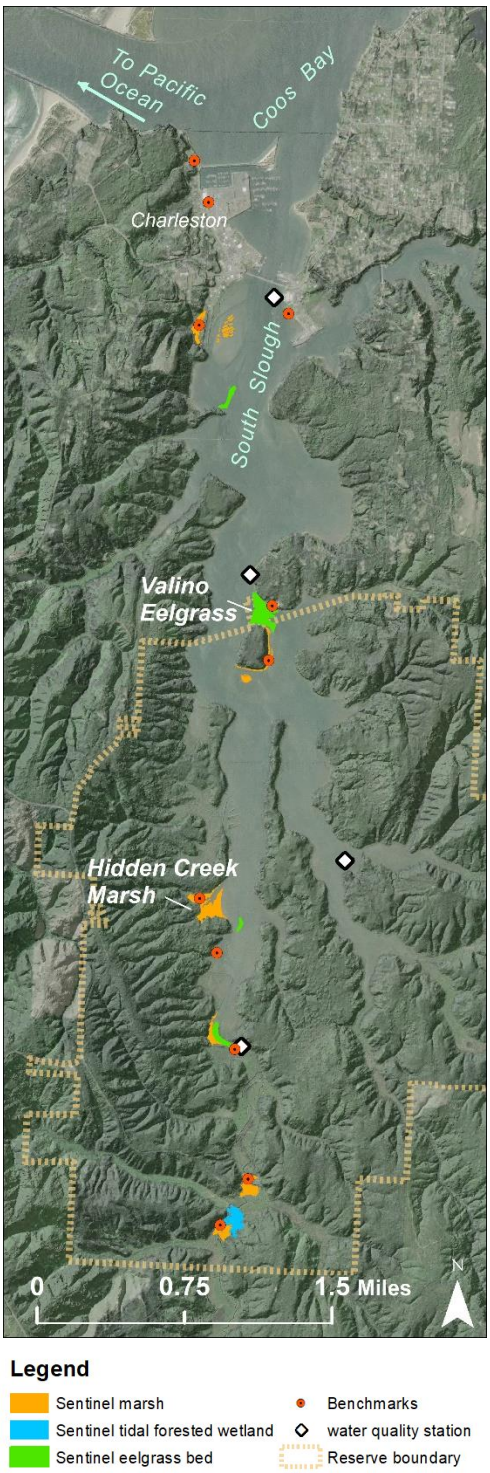
Climate Change-A National Oceanic and Atmospheric Agency (NOAA)'s Climate Reference Network station monitors climate trends and supports climate-related research by measuring air temperature, precipitation, relative humidity, wind speed, solar radiation, infrared surface temperature, and soil conditions (temperature, moisture). Latest measurements.

How is the SWMP Data Used?

- Reserve use for Research and Restoration projects
- Reserve use for Education programs: Teachers on the Estuary (TOTE), Oregon Marine Science and Educator Alliance Program (ORSEA), SWMP Visitor's Center Entryway Exhibit
- Local and regional use by scientists, coastal managers, public
- Students at University of Oregon/Oregon Institute of Marine Biology, Oregon State University, Portland State University utilize data for their graduate student research
- Regional and National SWMP Data Syntheses: Marsh Resilience to Sea Level Rise (2016), Tidal and Watershed Forcing of Nutrients and Dissolved Oxygen Stress within Four Pacific Coast Estuaries (2007)
- Real-time water quality data access (nvs.nanoos.org; nerrsdata.org)

Sentinel Sites Program

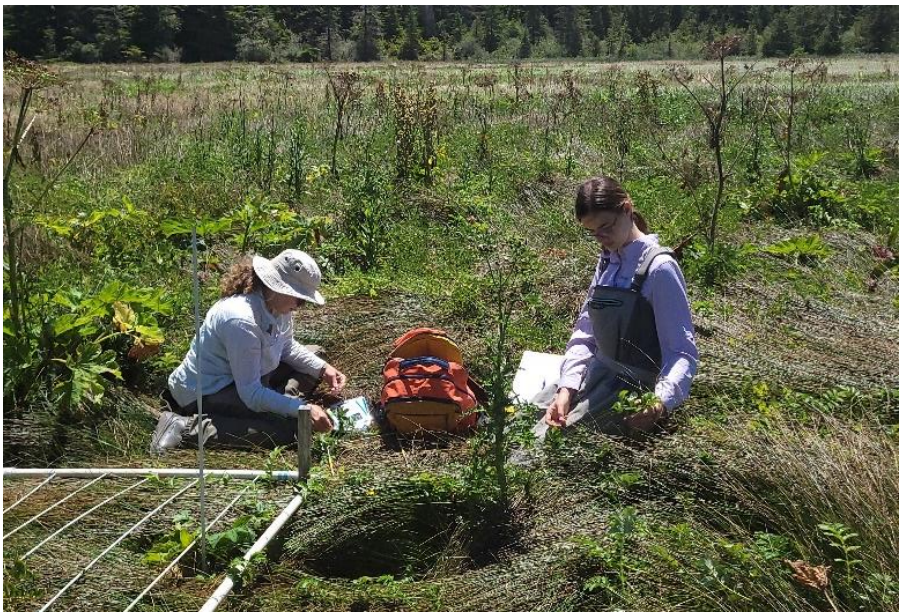
Tidal wetlands are among the most productive habitats in the world, providing valuable services such as water filtration, carbon storage, flood mitigation, sediment stabilization, habitat for economically important species, and shoreline protection.



Climate change and sea level rise are threatening wetlands. Salt marshes around the Coos estuary are already reduced from historic times with an estimated 66% loss due to levee creation. There is a 96% loss of tidal forested swamps from historic times.

South Slough Reserve has been part of the National Sentinel Site program for twelve years. Six Sentinel Sites throughout the Reserve monitor marsh accretion rates, changes in salinity, changes in sea level, vegetation change, and changes in ground water.

How is the Sentinel Site Data Used? At five coastal locations, NOAA has established "Sentinel Site Cooperatives". These five Cooperatives have diverse geographies, from rocky shorelines to expansive salt marshes, and their unique geographic settings make them ideal places to study and address the effects of sea level change on coastal communities. The strength of this program is that it brings together a network of people, expertise, and resources that are focused on the common needs of specific places that people care about. Sentinel Site Cooperatives bring together science, management, and technology to address the impacts of sea level changes on coastal communities.



SOUTH SLOUGH NATIONAL ESTUARINE RESEARCH RESERVE
61907 SEVEN DEVILS ROAD, CHARLESTON, OR 97420 | 541-888-5558