



An Ocean of Possibilities: Issues and challenges for MPA's in the Pacific Northwest



Carol Bernthal, Sanctuary Superintendent



Our National Marine Sanctuaries



● National Marine Sanctuary

★ Marine National Monument

OLYMPIC COAST NATIONAL MARINE SANCTUARY

Contact Information: Headquarters
 2000 10th Avenue, NE
 Olympia, WA 98502
 (360) 371-0222
www.nmfs.gov/olympic

Key Species:
 - Chinook Salmon
 - Coho Salmon
 - Herring
 - King Salmon
 - Pacific Herring
 - Sturgeon
 - Walleye
 - White Sturgeon

Map Key:
 - National Marine Sanctuaries
 - National Park
 - National Monument
 - National Historic Landmark
 - National Wildlife Refuge
 - National Forest
 - National Preserve
 - National Battlefield
 - National Cemetery
 - National Shrine
 - National Battlefield
 - National Cemetery
 - National Shrine

Map Key:
 - National Marine Sanctuaries
 - National Park
 - National Monument
 - National Historic Landmark
 - National Wildlife Refuge
 - National Forest
 - National Preserve
 - National Battlefield
 - National Cemetery
 - National Shrine
 - National Battlefield
 - National Cemetery
 - National Shrine

Map Key:
 - National Marine Sanctuaries
 - National Park
 - National Monument
 - National Historic Landmark
 - National Wildlife Refuge
 - National Forest
 - National Preserve
 - National Battlefield
 - National Cemetery
 - National Shrine
 - National Battlefield
 - National Cemetery
 - National Shrine

Map Key:
 - National Marine Sanctuaries
 - National Park
 - National Monument
 - National Historic Landmark
 - National Wildlife Refuge
 - National Forest
 - National Preserve
 - National Battlefield
 - National Cemetery
 - National Shrine
 - National Battlefield
 - National Cemetery
 - National Shrine

Map Key:
 - National Marine Sanctuaries
 - National Park
 - National Monument
 - National Historic Landmark
 - National Wildlife Refuge
 - National Forest
 - National Preserve
 - National Battlefield
 - National Cemetery
 - National Shrine
 - National Battlefield
 - National Cemetery
 - National Shrine

Map Key:
 - National Marine Sanctuaries
 - National Park
 - National Monument
 - National Historic Landmark
 - National Wildlife Refuge
 - National Forest
 - National Preserve
 - National Battlefield
 - National Cemetery
 - National Shrine
 - National Battlefield
 - National Cemetery
 - National Shrine



OLYMPIC COAST NATIONAL MARINE SANCTUARY

Protected Area Designation:
 July 1984

Location:
 Northwest corner of the Olympic Peninsula, Washington's western coast















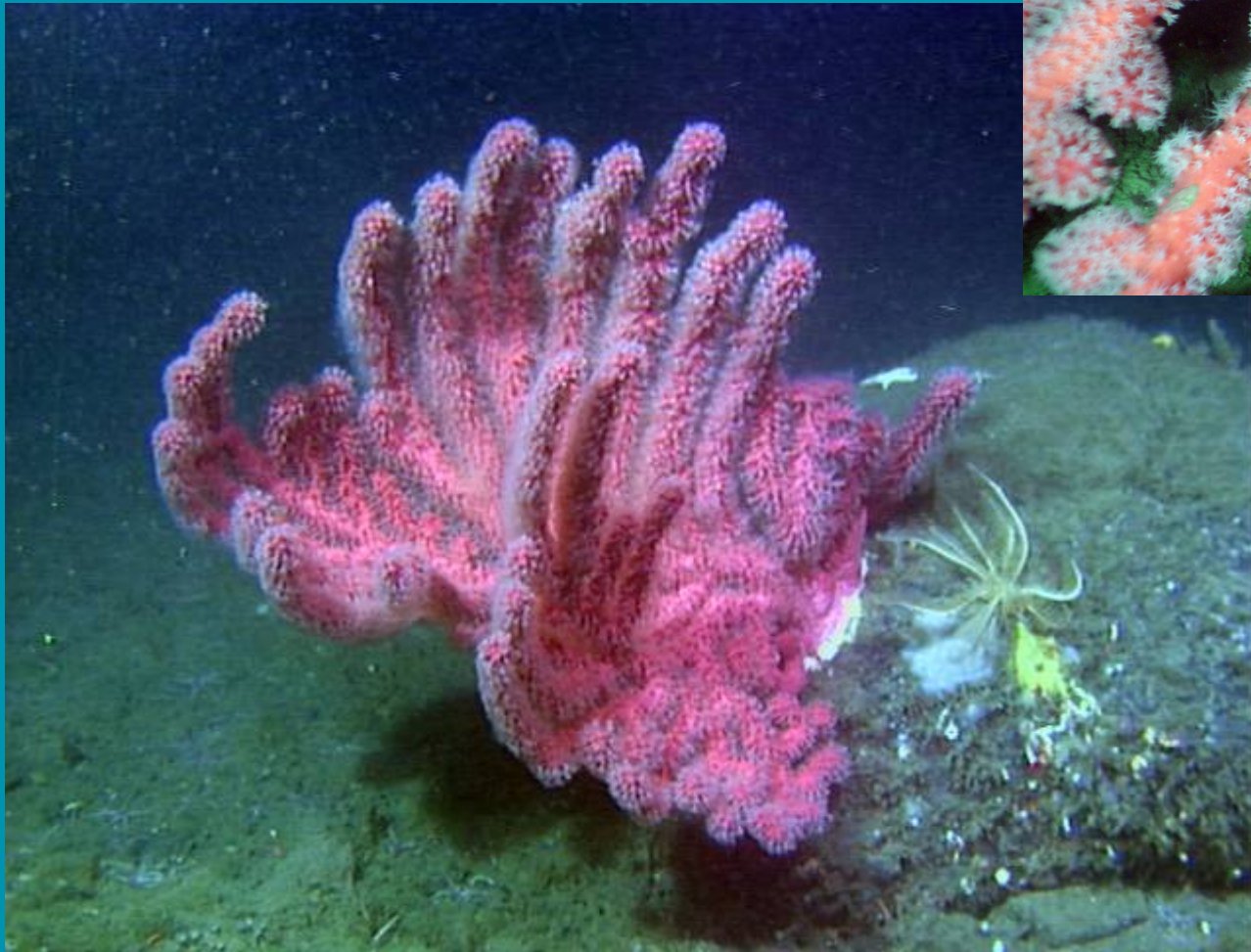
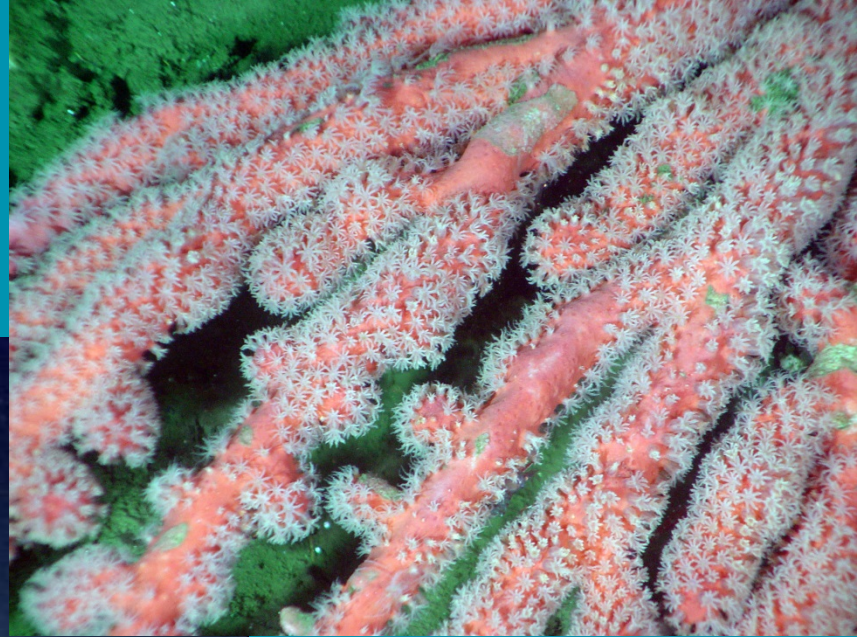












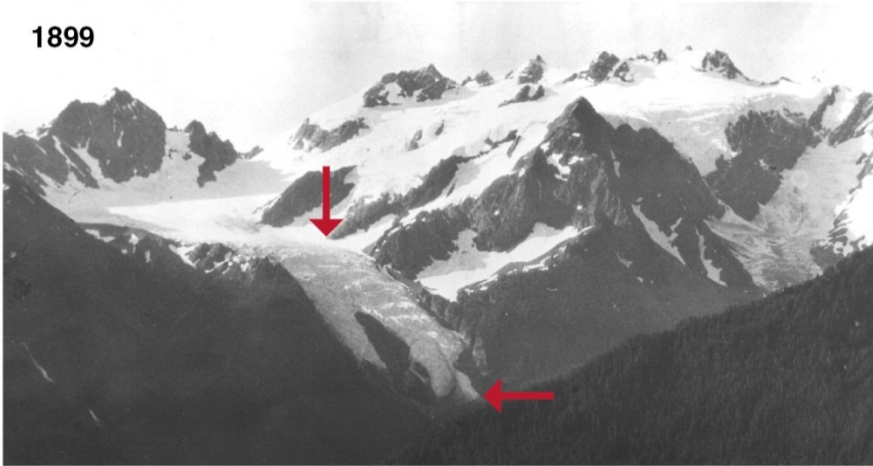
Challenges and Successes



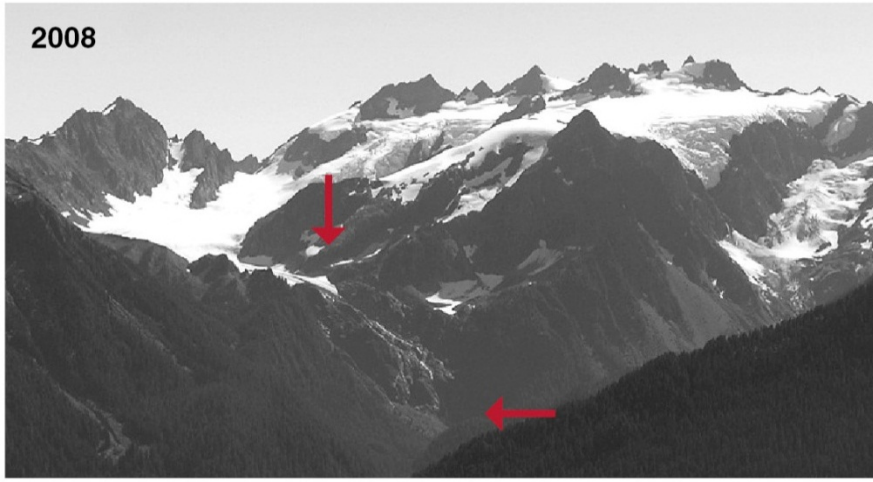
Climate Change

Olympic National Park - Blue Glacier

1899



2008



Olympic National Park - Anderson Glacier

1936

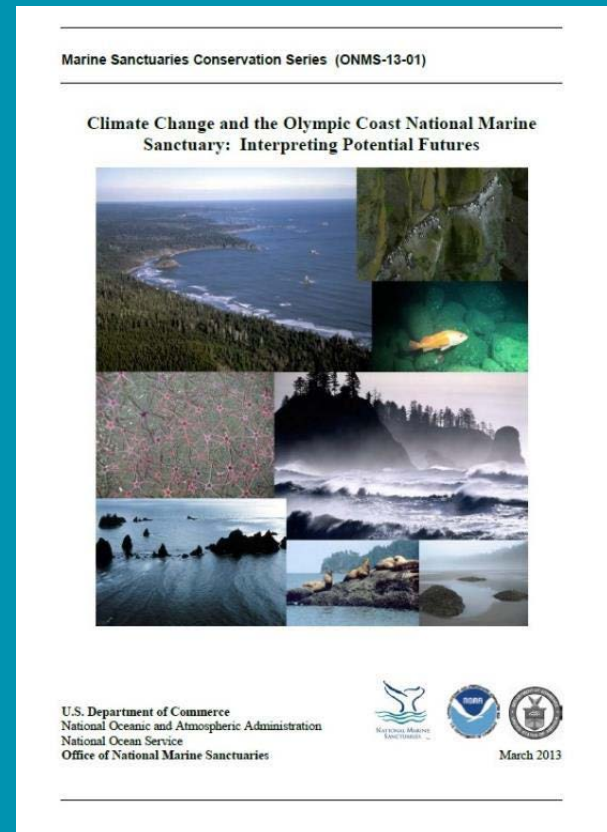


2004



Projected Climate Change for Olympic Coast

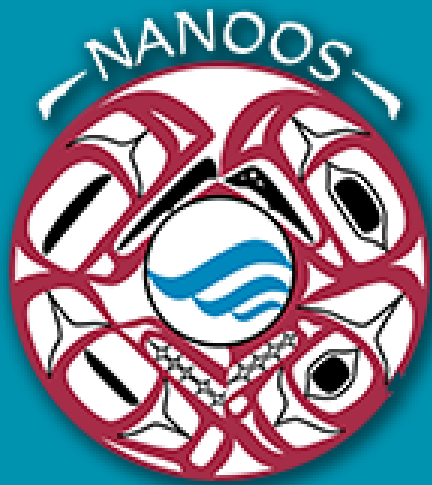
- Sea level rise ~1.0 meter
- Warmer ocean temperatures
- Increasing pH
- Increasing storm frequency, coastal erosion
- Unclear impact on coastal upwelling events
- Decreasing dissolved oxygen levels
- Increased rainfall, increased winter flooding
- Changes in animal migration patterns, range, abundance varies by species



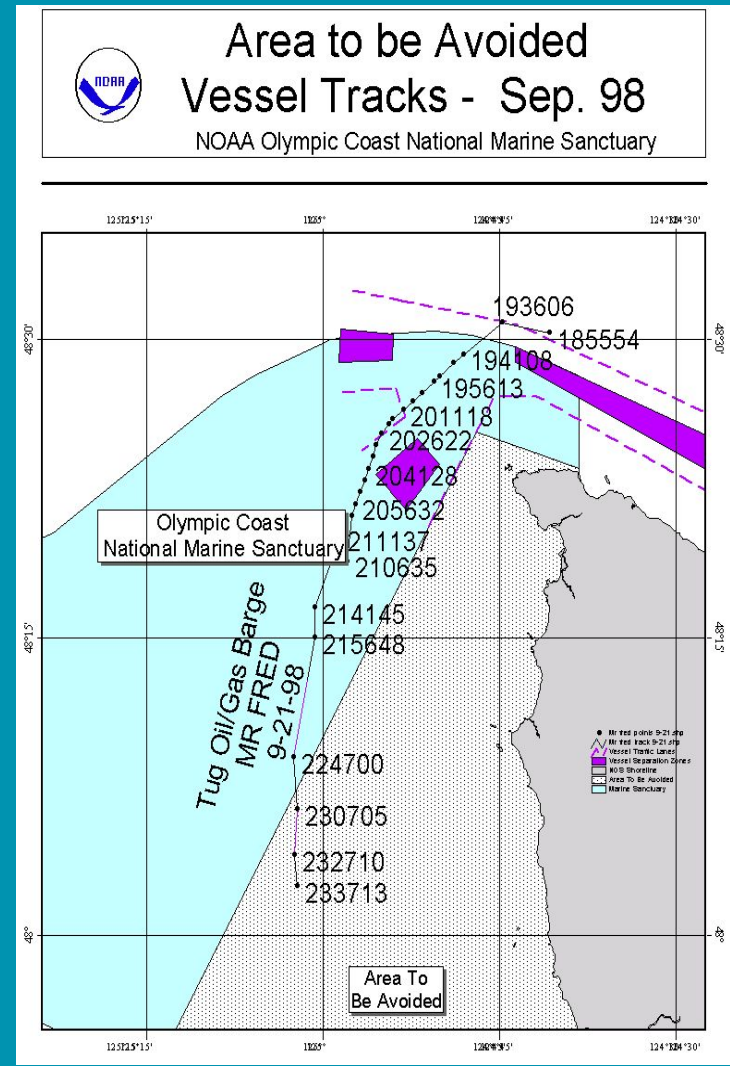
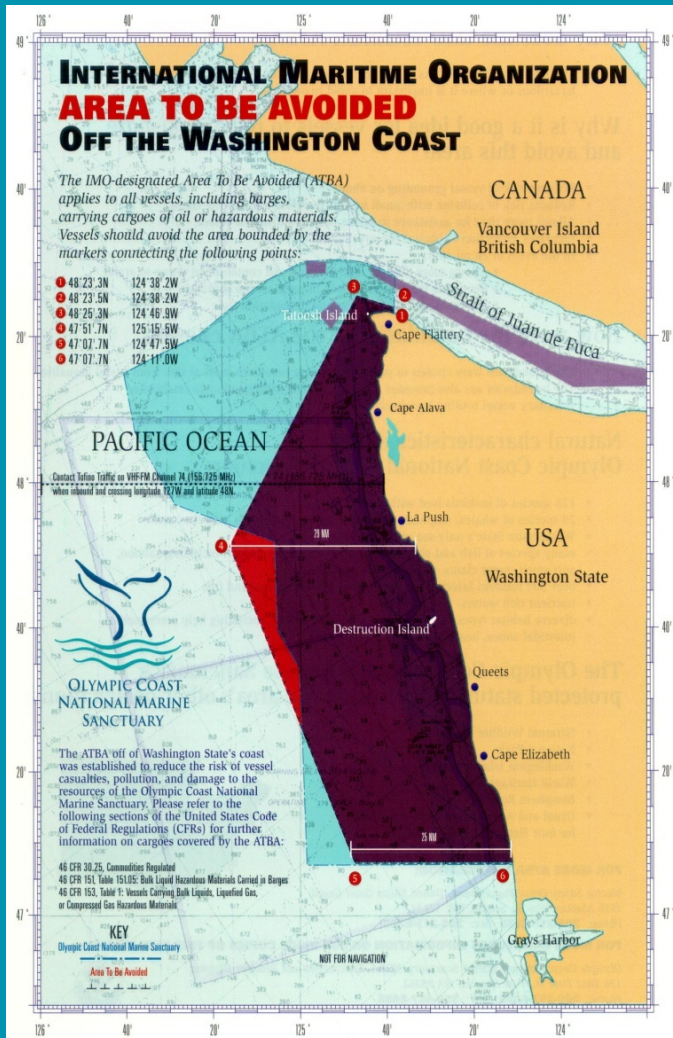
COASTAL PEOPLES ADDRESS CLIMATE CHANGE

FIRST STEWARDS











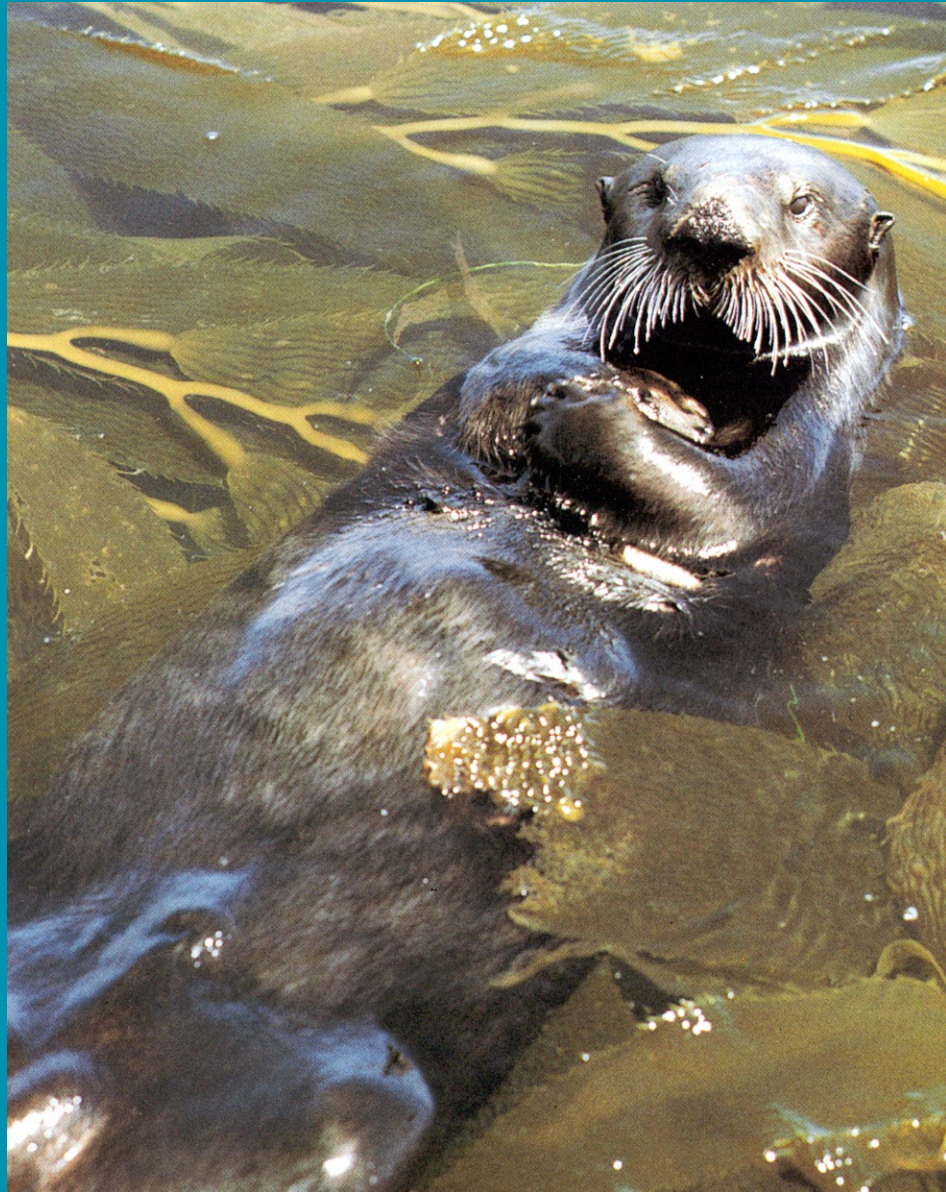












National Marine Sanctuaries
National Oceanic and Atmospheric Administration



NATIONAL MARINE
SANCTUARIES

OLYMPIC COAST

<http://olympiccoast.noaa.gov>