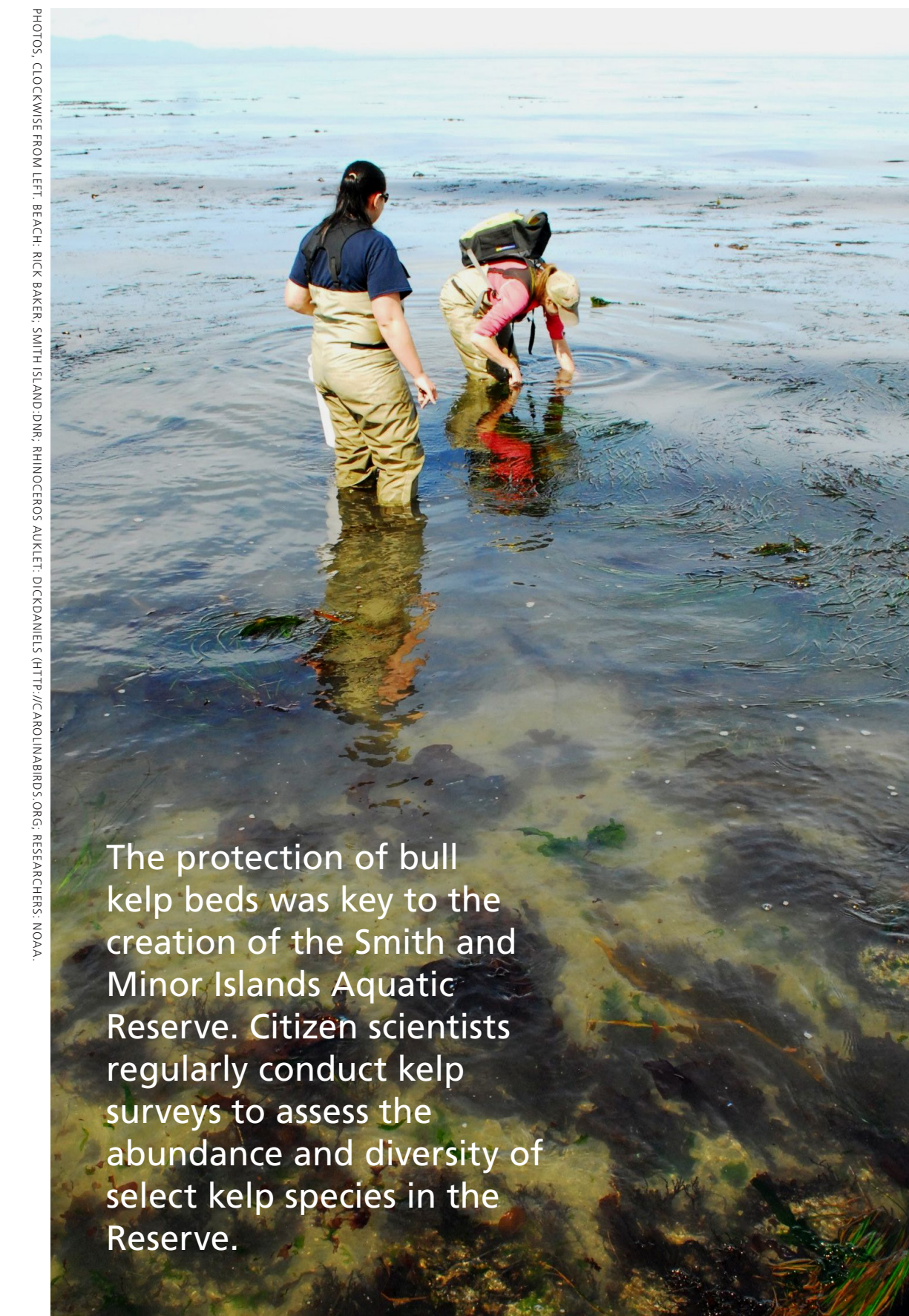


# Smith and Minor Islands Aquatic Reserve

## VAST SEAWEED FOREST SUPPORTS A WIDE ARRAY OF MARINE SPECIES CRITICAL TO THE HEALTH OF PUGET SOUND



The protection of bull kelp beds was key to the creation of the Smith and Minor Islands Aquatic Reserve. Citizen scientists regularly conduct kelp surveys to assess the abundance and diversity of select kelp species in the Reserve.



Smith Island

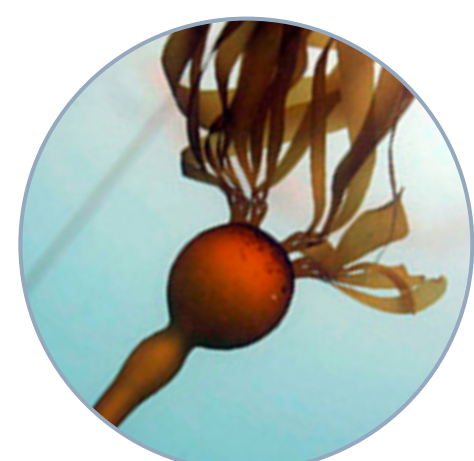


Rhinoceros Auklet  
(*Cerorhinca monocerata*)



The waters west of Smith Island are home to the largest persistent bull kelp bed in Washington State. Bull kelp is an annual plant that can grow over 100 feet in a single season creating layered habitat resembling an underwater forest. Creatures, including tiny shrimp and young rockfish, use these areas for shelter, nursery habitat and feeding. Bull kelp anchors itself with a root-like structure onto rocks and other hard surfaces. Each year, stormy winter weather rips up kelp and tosses it ashore where it decomposes and provides food and shelter for beach-dwelling creatures like beach hoppers and kelp flies. The following spring, a new generation of bull kelp grows.

Bull kelp also provides various "ecosystem services," or benefits provided to humans by nature. As the tides ebb and flow through the Strait of Juan de Fuca, they sometimes hammer the shores of Whidbey Island with intense wind-generated waves. The presence of bull kelp beds helps slow these currents and reduce wave action, creating calmer areas in the kelp forest and along the shoreline, which diminishes shoreline erosion. Kelp is also being studied for the amount of carbon it can "fix," or store in its tissues, which may reduce the amount of carbon dioxide in the air and water and help lessen the acidification of local waters.



Bull kelp  
(*Nereocystis luetkeana*)



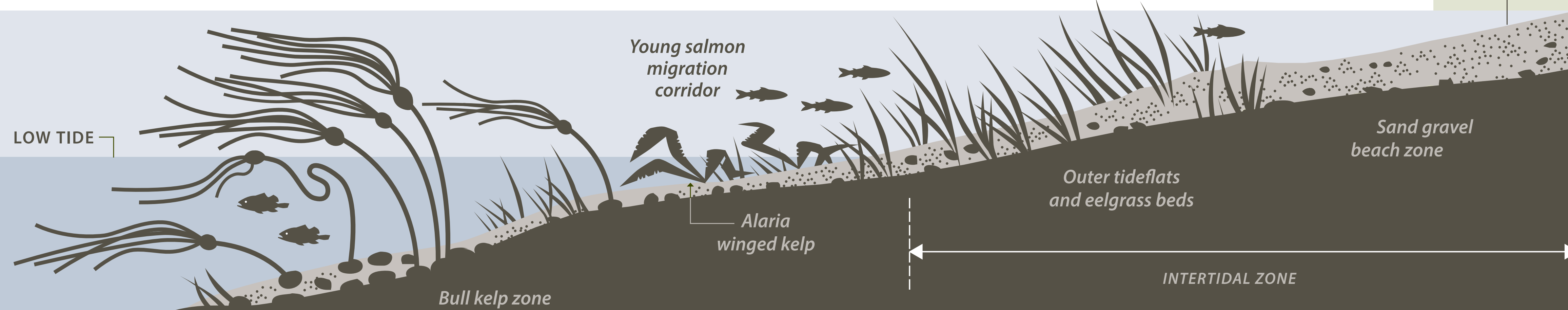
▲ A Citizen Stewardship Committee organizes volunteer beach surveys of kelp, wildlife, and human disturbance in the Reserve. The Committee also works to educate others about nearshore species and ecology, the Aquatic Reserve's condition, and planning issues that affect the Reserve.

FOR MORE INFORMATION ON AQUATIC RESERVE CITIZEN COMMITTEES, VISIT: [AQUATICRESERVES.ORG](http://AQUATICRESERVES.ORG)

► Bull kelp grows and thrives in rough and tumble coastal waters and forms extensive beds along much of the shoreline of the Aquatic Reserve. Rafts of kelp help reduce beach erosion by softening the force of waves against the shoreline.

HIGH TIDE

LOW TIDE



▲ Surf smelt spawn in the intertidal zone on mixed sand and gravel beaches. Shoreline armoring and development can impact important surf smelt spawning habitat.



TUFTED PUFFIN  
(*FRATERCULA CIRRHATA*)

## THE AQUATIC RESERVES PROGRAM

Washington State's Aquatic Reserve Program protects important and unique freshwater and marine habitats. Reserves are managed to:

- Conserve and enhance native habitats
- Protect and restore functions and natural processes of the shoreline and intertidal zones
- Promote stewardship of aquatic habitats and species through education and outreach in collaboration with resource managers, stakeholders and citizen scientists

Surf smelt spawning zone



## WASHINGTON'S AQUATIC RESERVES

The Smith and Minor Islands Aquatic Reserve covers 36,308 acres, from the Whidbey Island shoreline westward around Smith and Minor Islands. Designated as one of Washington's Aquatic Reserves in 2010, it is the largest in DNR's reserve system.

To learn more about Aquatic Reserves, visit our website: [dnr.wa.gov/managed-lands/aquatic-reserves](http://dnr.wa.gov/managed-lands/aquatic-reserves) or call 360-902-1100

▼ Tufted Puffins spend the winter at sea. During the spring and summer breeding season, they burrow into cliffs on protected islands and lay their eggs. These striking birds have short wings and thick bills especially adapted for diving, underwater swimming, and capturing prey. They can hold up to 20 fish crosswise in their beaks at one time.

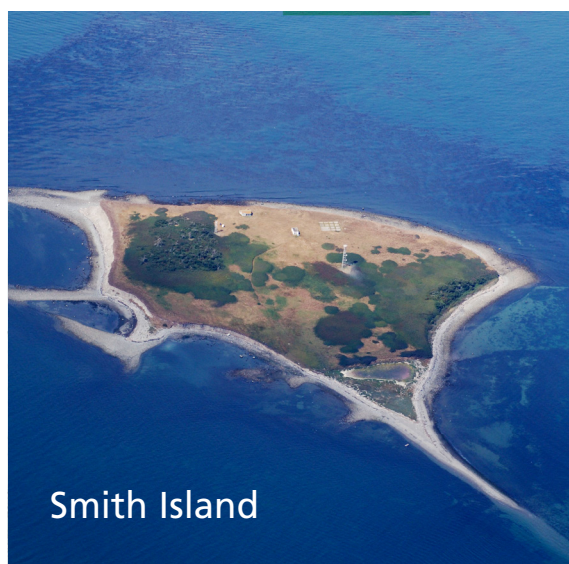


# Smith and Minor Islands Aquatic Reserve

## VAST SEAWEED FOREST SUPPORTS A WIDE ARRAY OF MARINE SPECIES CRITICAL TO THE HEALTH OF PUGET SOUND



The protection of bull kelp beds was key to the creation of the Smith and Minor Islands Aquatic Reserve. Citizen scientists regularly conduct kelp surveys to assess the abundance and diversity of select kelp species in the Reserve.



Smith Island

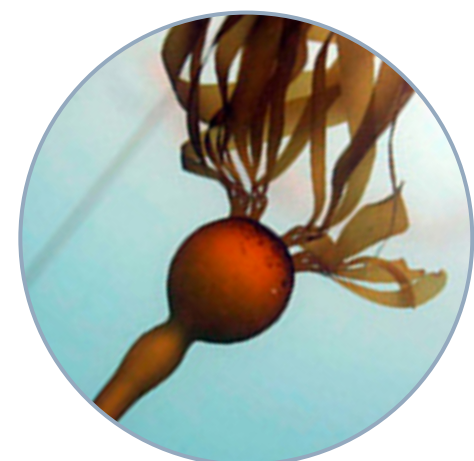


Rhinoceros Auklet  
(*Cerorhinca monocerata*)



The waters west of Smith Island are home to the largest persistent bull kelp bed in Washington State. Bull kelp is an annual plant that can grow over 100 feet in a single season creating layered habitat resembling an underwater forest. Creatures, including tiny shrimp and young rockfish, use these areas for shelter, nursery habitat and feeding. Bull kelp anchors itself with a root-like structure onto rocks and other hard surfaces. Each year, stormy winter weather rips up kelp and tosses it ashore where it decomposes and provides food and shelter for beach-dwelling creatures like beach hoppers and kelp flies. The following spring, a new generation of bull kelp grows.

Bull kelp also provides various "ecosystem services," or benefits provided to humans by nature. As the tides ebb and flow through the Strait of Juan de Fuca, they sometimes hammer the shores of Whidbey Island with intense wind-generated waves. The presence of bull kelp beds helps slow these currents and reduce wave action, creating calmer areas in the kelp forest and along the shoreline, which diminishes shoreline erosion. Kelp is also being studied for the amount of carbon it can "fix," or store in its tissues, which may reduce the amount of carbon dioxide in the air and water and help lessen the acidification of local waters.



Bull kelp  
(*Nereocystis luetkeana*)



▲ A Citizen Stewardship Committee organizes volunteer beach surveys of kelp, wildlife, and human disturbance in the Reserve. The Committee also works to educate others about nearshore species and ecology, the Aquatic Reserve's condition, and planning issues that affect the Reserve.

FOR MORE INFORMATION ON AQUATIC RESERVE CITIZEN COMMITTEES, VISIT: [AQUATICRESERVES.ORG](http://AQUATICRESERVES.ORG)

▼ Tufted Puffins spend the winter at sea. During the spring and summer breeding season, they burrow into cliffs on protected islands and lay their eggs. These striking birds have short wings and thick bills especially adapted for diving, underwater swimming, and capturing prey. They can hold up to 20 fish crosswise in their beaks at one time.



TUFTED PUFFIN  
(*FRATERCULA CIRRHATA*)

## THE AQUATIC RESERVES PROGRAM

Washington State's Aquatic Reserve Program protects important and unique freshwater and marine habitats. Reserves are managed to:

- Conserve and enhance native habitats
- Protect and restore functions and natural processes of the shoreline and intertidal zones
- Promote stewardship of aquatic habitats and species through education and outreach in collaboration with resource managers, stakeholders and citizen scientists

Surf smelt spawning zone

▲ Surf smelt spawn in the intertidal zone on mixed sand and gravel beaches. Shoreline armoring and development can impact important surf smelt spawning habitat.



### WASHINGTON'S AQUATIC RESERVES

The Smith and Minor Islands Aquatic Reserve covers 36,308 acres, from the Whidbey Island shoreline westward around Smith and Minor Islands. Designated as one of Washington's Aquatic Reserves in 2010, it is the largest in DNR's reserve system.

► Bull kelp grows and thrives in rough and tumble coastal waters and forms extensive beds along much of the shoreline of the Aquatic Reserve. Rafts of kelp help reduce beach erosion by softening the force of waves against the shoreline.

HIGH TIDE

LOW TIDE

