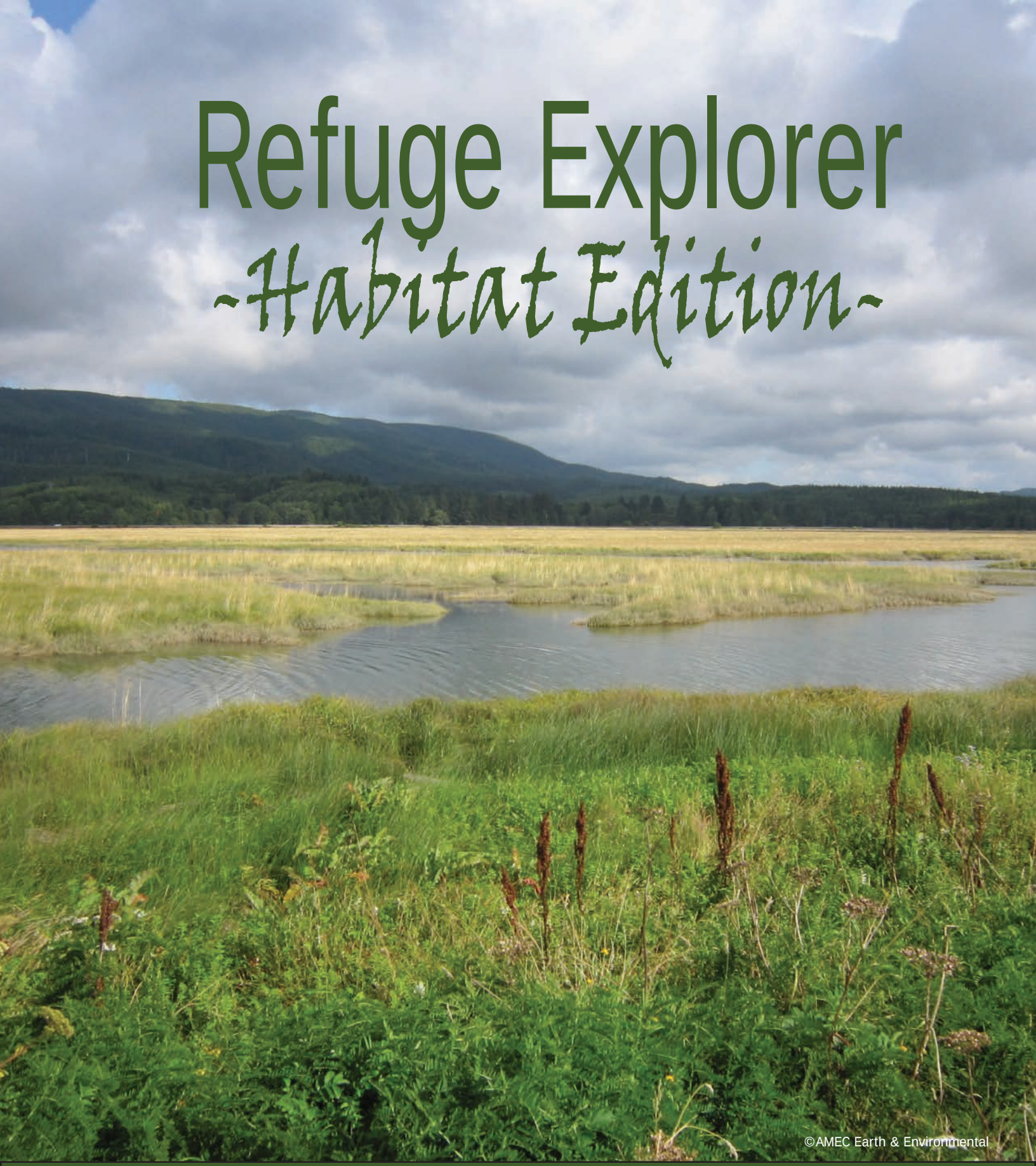
Refuge Explorer

-Habitat Edition-



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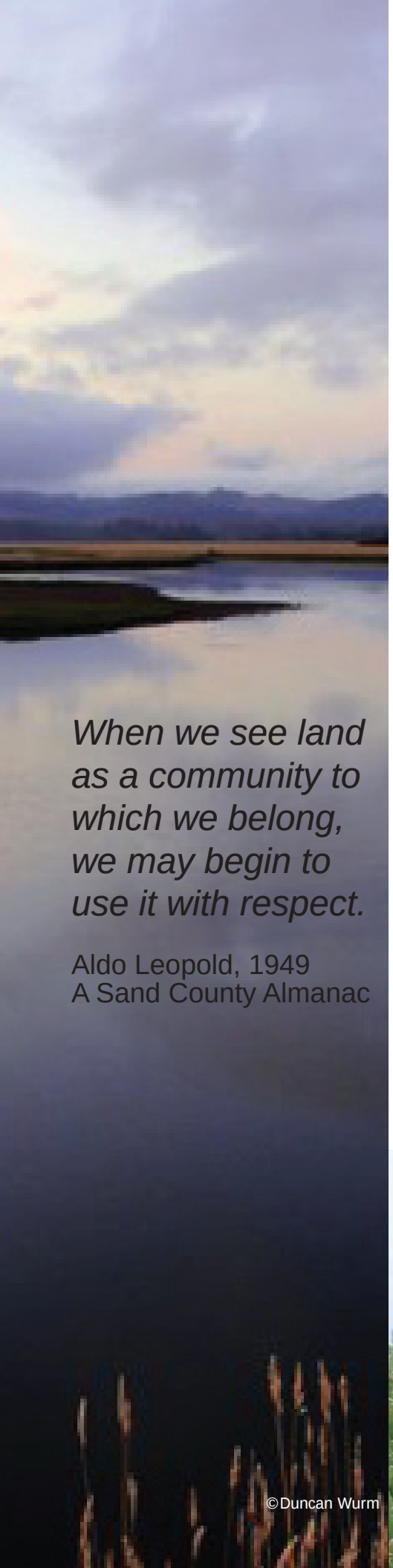
Willapa National Wildlife Refuge



When we see land as a community to which we belong, we may begin to use it with respect.

Aldo Leopold, 1949
A Sand County Almanac

©Duncan Wurm

National Wildlife Refuges protect plants and animals for everyone!

National Wildlife Refuge Fast Facts

- Refuges are part of the U.S. Fish and Wildlife Service and conserve fish, wildlife and habitats.
- There are more than 555 national wildlife refuges.
- The first refuge was established in 1903.
- Nearly 46 million people visit refuges each year.

Write a Refuge Poem (fill in the blanks)

Noun

Adjective Adjective

Verb Verb Verb (all ending in "ing")

A Four Word Sentence

Noun

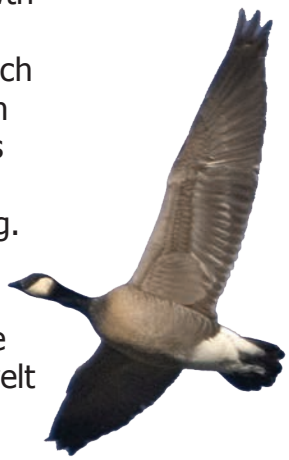
Example Poem:

Refuge
Wild, Abundant
Thriving, Protecting, Conserving
A Place for Animals
Home

Willapa National Wildlife Refuge

Willapa National Wildlife Refuge is a place for wildlife and you!

The Refuge has salt marshes, mudflats, forests, coastal dunes, grasslands, freshwater wetlands, ponds, streams, temperate rainforest, and ocean beaches. It also protects rare old growth coastal cedar forest and part of Willapa Bay. The Refuge is home to wild salmon, shorebirds, and threatened species such as the snowy plover and marbled murrelet. Salmon spawn in refuge streams. Hundreds of thousands of shorebirds, ducks and geese stop in the Refuge during migration. Some birds spend their winter here. Other birds stay to raise their young.



In the early 1900's many estuaries were being destroyed by diking, draining, dredging, sedimentation, and pollution. The Refuge was created in 1937 by President Franklin D. Roosevelt to protect the habitat of migrating and wintering brant, waterfowl, and shorebirds. Because it has been protected for so long, the Refuge is a good place to imagine what the Pacific Northwest looked like over 100 years ago.

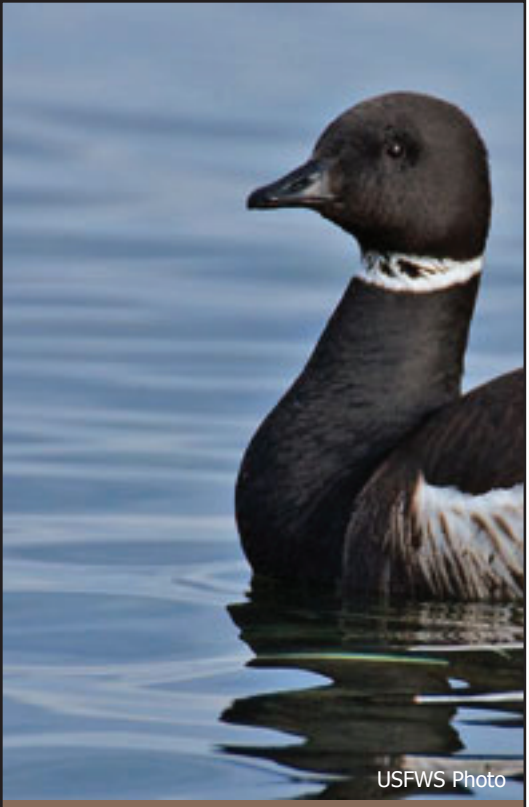
The Refuge has many habitats. These habitats make the Refuge a great home for wildlife, and an exciting place to visit. The Refuge has hiking trails and a photography blind. There is even camping on Long Island.

This blue goose is the symbol of the National Wildlife Refuge System.

Estuary - where the fresh waters of a river mix with the saltwater tides of the ocean.

Willapa Bay is the second largest estuary on the Pacific Coast.

©Shawn Schmelzer


USFWS Photo

Creature Feature

Brant

The Brant is a small dark goose that winters on Willapa Bay. Brant breed on the Arctic tundra of Alaska and northern Canada and have one of the longest migrations of all waterfowl. They return to the same breeding and wintering areas each year. Brant travel with their young during their first migration, and usually mate for life. Brant eat eelgrass and can drink salt water.

Willapa National Wildlife refuge was created in 1937 to protect migrating and wintering populations of brant, waterfowl, and shorebirds.

Learn More about Brant:
www.seattleaudubon.org

Habitat is a Home

Habitat Fast Facts:

- Habitat is made of living and non-living elements that create food, water, shelter and space for organisms.
- Willapa National Wildlife Refuge has more than 10 habitats, making it one of the most diverse in the Refuge System.

Non-living (abiotic) elements shape habitat.
It's easy, just remember the L.A.W.S.

L = Light. Energy from the sun drives most ecosystems through the process of photosynthesis. The amount of light determines what plants will live in a specific habitat.

A = Air. Temperature and wind shape life. Each organism's body is tuned to a certain temperature. Too hot or cold and the organism will struggle to eat, breathe and move. Wind increases the loss of an organism's heat and water. High winds can shape an organism – think of the trees along a windy coastline!

W = Water. All life needs water to survive. The amount of water an organism varies from a lot to a little – compare a garter snake to a salmon.

S = Soil. It's more than dirt! The amount of sand, silt and clay particles, air space, water, minerals and organic material (poop, dead plants and animals) affect what lives there.

Catastrophic Events (like fire, floods, tsunamis and wind storms) can change a habitat quickly.

Sunlight → Plants → Animals

Photosynthesis - the process by which plants make food for themselves out of non-living elements (light, air, soil, water).

Habitat Match

Draw a line to connect the refuge habitat with its characteristics and plants.

Salal

Licorice Fern

Skunk Cabbage

Pickleweed

Red Alder

Kinnickinnick

Sitka Spruce

Beach Grass

Sword Fern

Eelgrass

Shore Pine

Yarrow

Salt Grass

Western Red Cedar

Moss

Rockweed

Red Huckleberry

Large Woody Debris

Trees & Shrubs

Brackish Water

Fresh Water

Pools & Riffles

Grasses

Salt water

Shade

Wind

Salinity

Tides

Sand

Sun

Sedges

Rushes

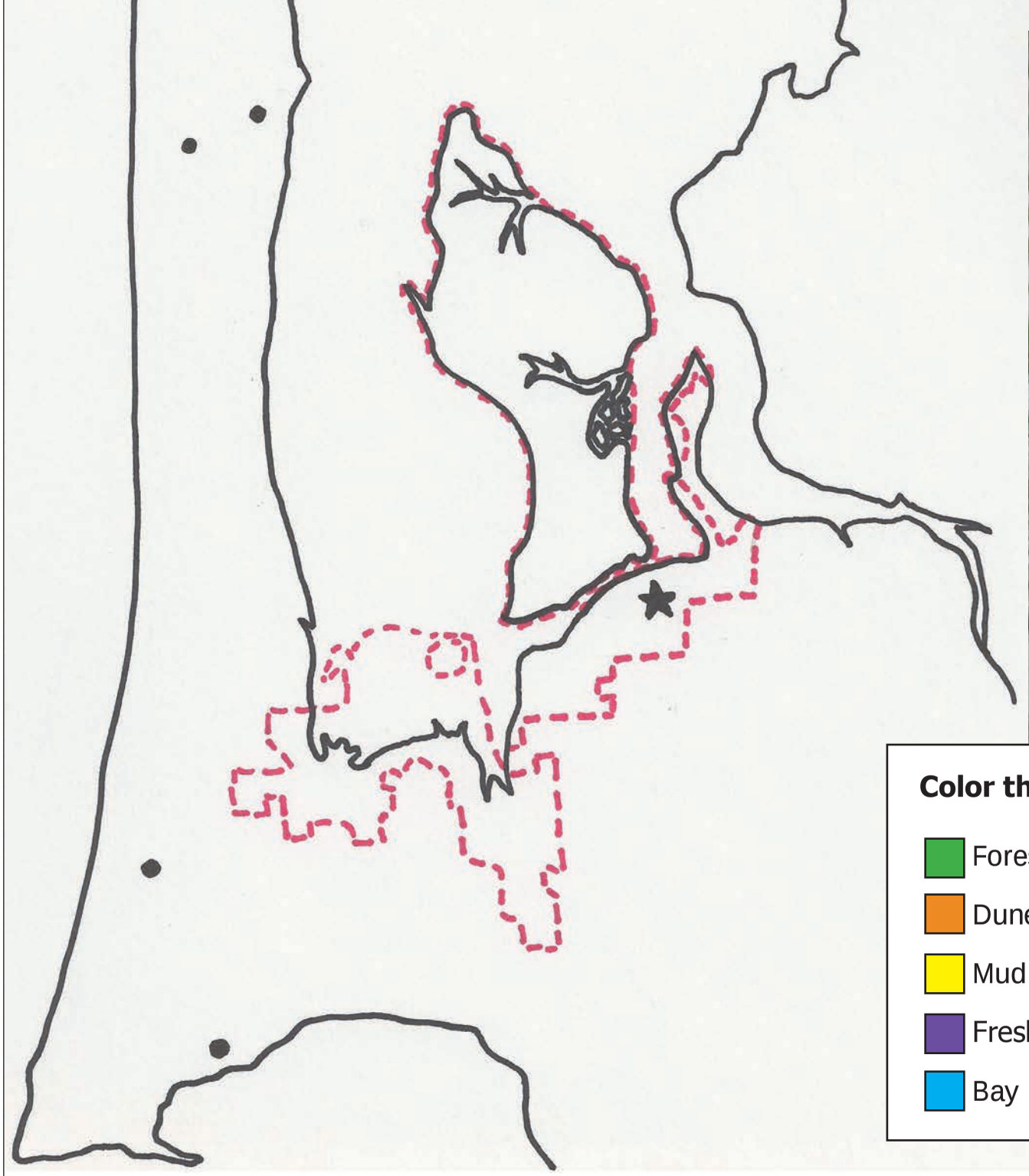
Rich Soil

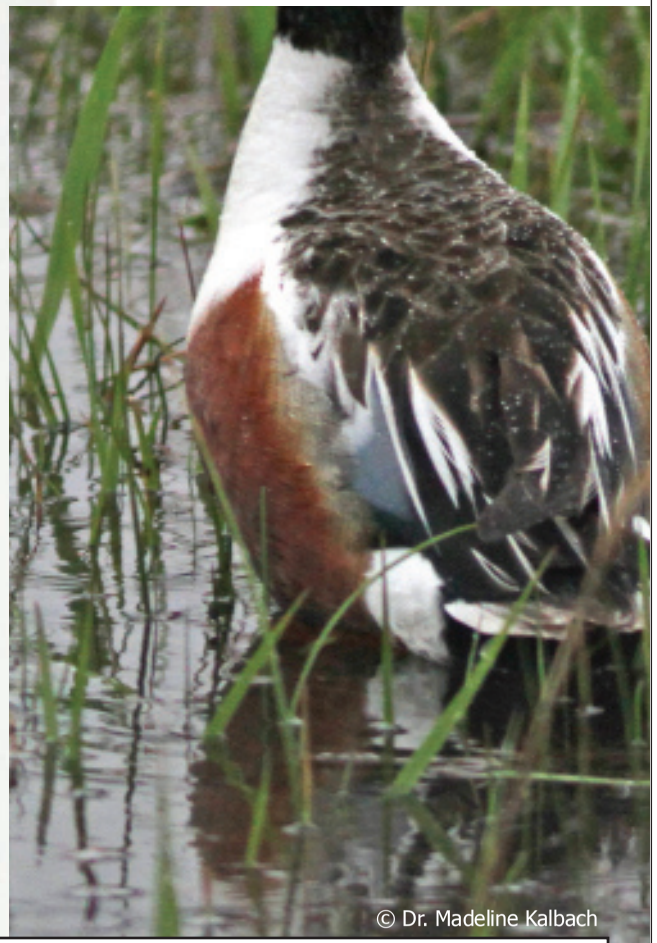
Rocks

Willapa National Wildlife Refuge - Habitat Map

Label the following places on this map:

- ☐ Pacific Ocean
- ☐ Willapa River
- ☐ Ilwaco
- ☐ Oysterville
- ☐ Willapa Bay
- ☐ Raymond
- ☐ South Bend
- ☐ Naselle River
- ☐ Willapa
- ☐ Long Beach
- ☐ Bay Center
- ☐ Nahcotta
- ☐ Palix River
- ☐ Naselle
- ☐ Ocean Park
- ☐ Tokeland
- ☐ Willapa National Wildlife Refuge





Color the habitats

- Forest
- Dune & Grassland
- Mud Flats & Salt Marsh
- Freshwater Wetlands, Ponds, & Streams
- Bay

Make a Habitat Collage

Attach pictures or draw your favorite refuge habitat.
Be sure to include the L.A.W.S. (light, air, water, soil).

Willapa National Wildlife Refuge is for people, too!

Read the refuge brochure and circle the activities you can do at Willapa National Wildlife Refuge:

Draw pictures	Go for a walk/hike
Feed wildlife	Paddle a canoe or kayak
Hunt ducks	Fish
Take pictures	Pick mushrooms
Camp	Walk your dog
Collect firewood	Go on a fieldtrip
Learn about nature	Watch birds
Examine animal tracks	Dig clams
Fly a kite	Ride a motorcycle or ATV
Write a nature journal	View art
Eat at a restaurant	

USFWS Photo

Explorer in Training

Get Outside!

Use the map on the back of this page to explore habitats and wildlife near you in January

Answers: Draw pictures, hunt ducks, take pictures, camp, learn about nature, examine animal tracks, write a nature journal, go for a walk/hike, paddle a canoe or kayak, fish, go on a fieldtrip, watch birds, dig clams, view art

Naselle - Deep River - Rosburg

1. **Nemah Fish Hatchery**
   Access to river and forest.

2. **Ellsworth Creek Preserve - The Nature Conservancy**
   Views of estuary, salt marsh, streams, wetlands and forests.

3. **Parpala Road**
   Views of saltmarsh, river, grasslands and wetlands.

4. **Radar Lakes - DNR**
   Trails and camping with access to forest and lakes.

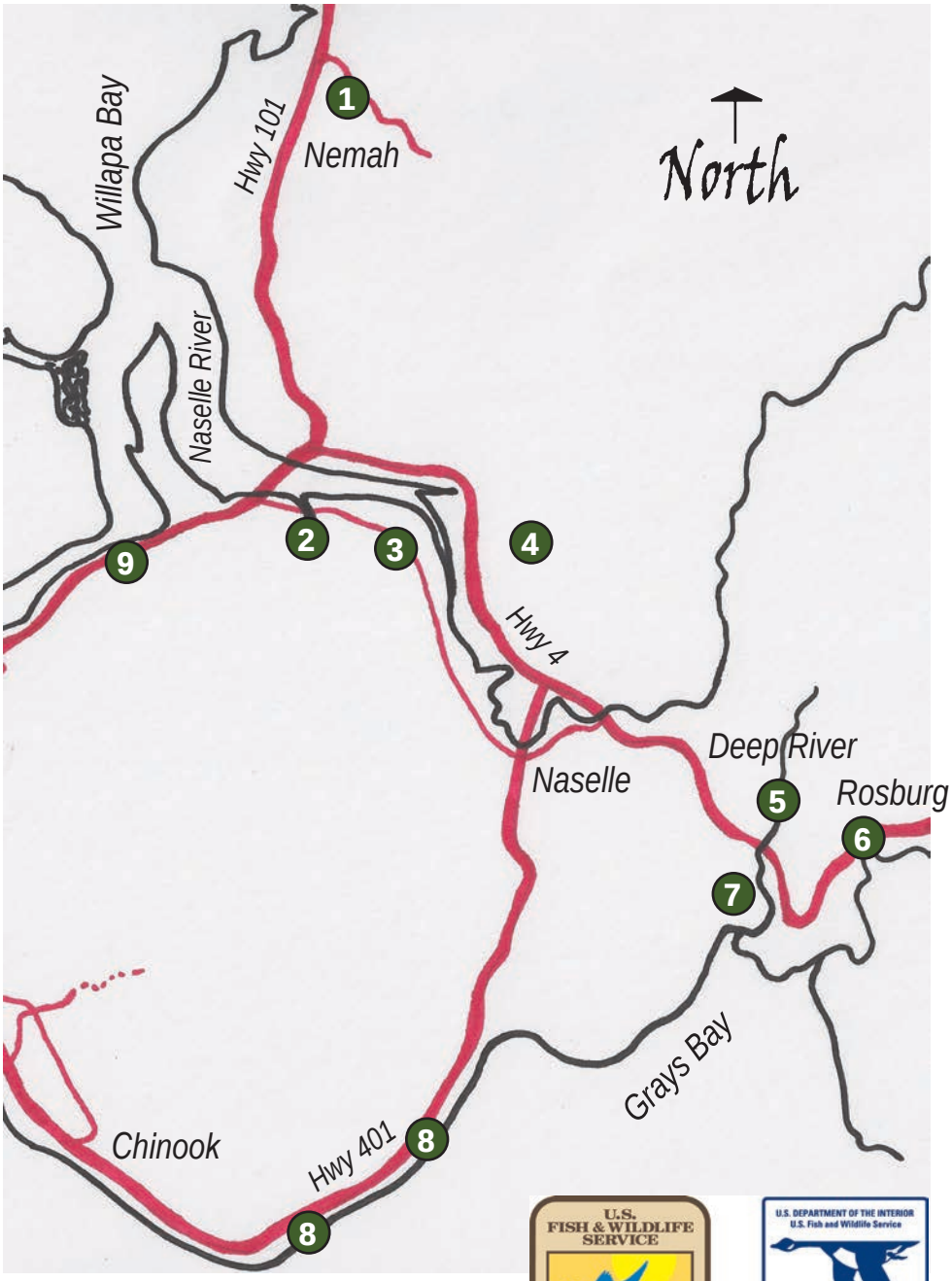
5. **Deep River Road Loop**
   Views of river, wetlands and forest.

6. **Devils Elbow - Columbia Land Trust**
   Wetlands and forest can be viewed near the end of Raistakka Rd.

7. **Oneida Road**
   Boat launch and views of bay, mudflats and wetlands.

8. **Rest Area & Pullouts**
   Look all directions for views of the Columbia River, forest, wetlands and ponds.

9. **Willapa National Wildlife Refuge - Headquarters**
   Views of the bay, salt marsh, mudflats and a trail through freshwater wetlands and forest. Located near milemarker 24 on Hwy 101.



For more information visit:
www.fws.gov/willapa

Get Outside! January

- Listen and look for owls in the forest, grasslands and dunes.
- Watch waterfowl and shorebirds on the bay, salt marsh and mudflats.
- Search for animal footprints (tracks) on muddy wetland and stream edges.

1. **Leadbetter Point**
Walk to views of Willapa Bay, mudflats, salt marsh, dunes, forest and ocean beach.

2. **Ocean Beach Access**
Dunes and grasslands.

3. **Loomis Lake State Park**
Trails to the dunes and beach, freshwater wetlands and lake.

4. **Bay Access**
Views of Willapa Bay, mudflats and salt marsh.

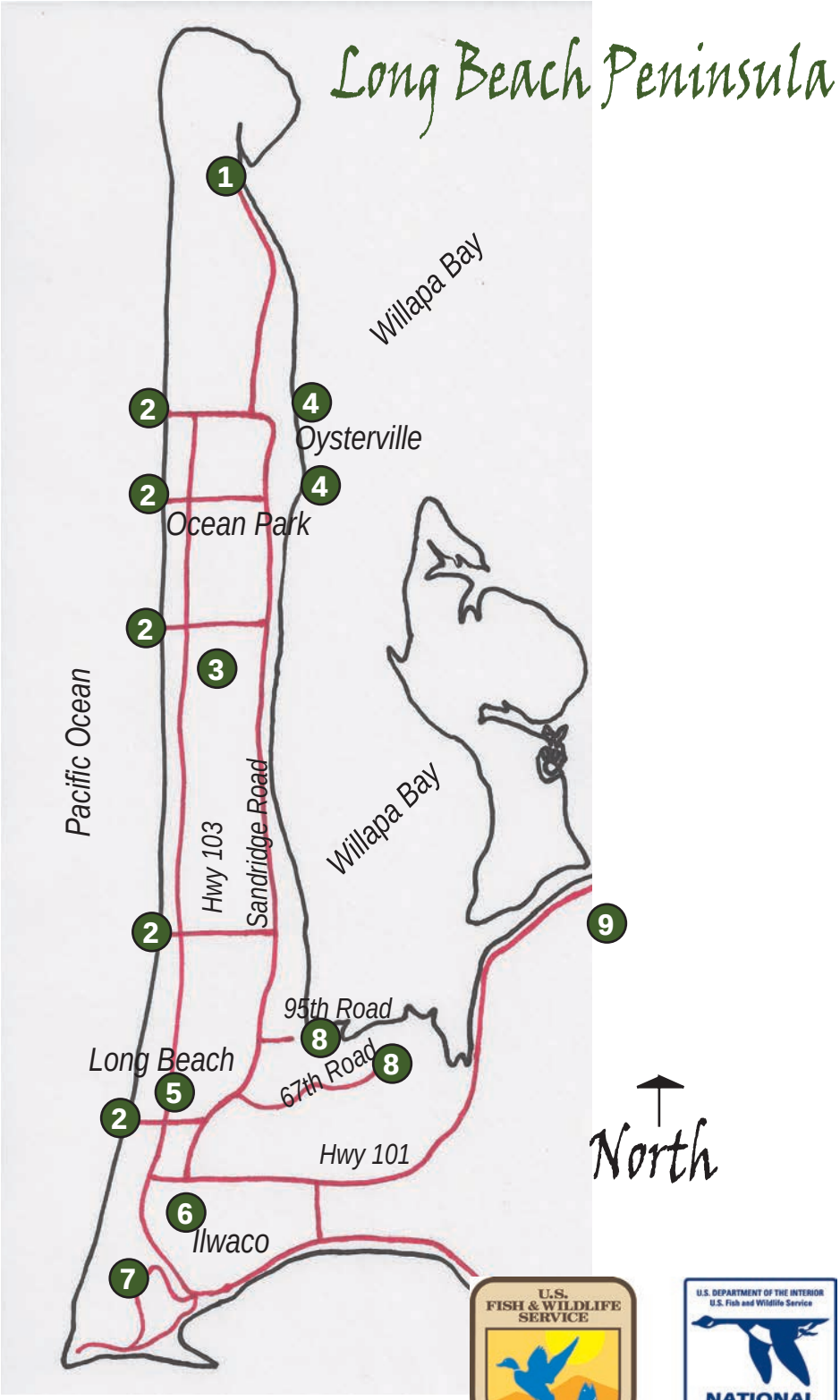
5. **Discovery Trail**
Walk or bike this path for views of grasslands, dunes, wetlands and forest.

6. **Black Lake**
Trails to freshwater lake, wetlands and forest.

7. **Beard's Hollow**
Trails to forest, freshwater wetlands and dunes.

8. **Willapa National Wildlife Refuge - Tarlatt & Riekkola Units**
Access to grasslands, salt marsh, freshwater wetlands, Willapa Bay and wildlife viewing blind.

9. **Willapa National Wildlife Refuge - Headquarters**
Views of the bay, salt marsh, mudflats and a trail through freshwater wetlands and forest. Located near milemarker 24 on Hwy 101.



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South Bend & Bay Center

1. **Walk the Chehalis-South Bend Trail**
   Views of Willapa River and grasslands.

2. **Helen Davis Memorial Park**
   Views of forest and estuary.

3. **Pullout on Hwy 101**
   Views of mudflats and forest.

4. **Bruceport Park**
   A forested trail will take you to the beach.

5. **South Bend Palix Road**
   Access to freshwater wetlands and streams along the Niawakum River.

6. **Bush Pioneer County Park**
   Forest trails, bay overlook, marsh. Walk to Johnson Beach from here.

7. **Bay Center Dike Road**
   Views of grasslands, streams and salt marsh.

8. **Rhodesia Beach**
   Visit the bay and dunes.

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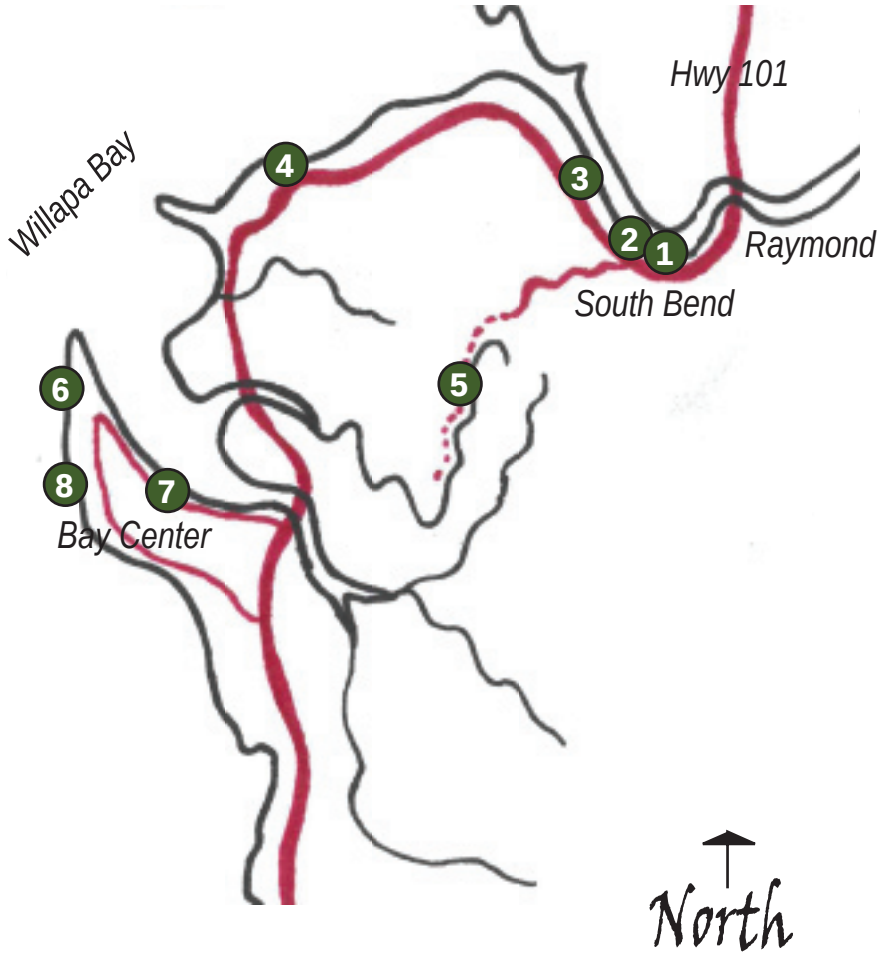

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Raymond & Willapa Valley

1. **Willapa River Trail**
   Walk this paved trail for views of Willapa River.

2. **Raymond Airport**
   View grasslands.

3. **Smith Creek**
   Park at the boat launch for views of salt marsh, mudflats and estuary. Walk a short trail into the forest.

4. **Willapa Landing**
   This boat launch offers a fishing pier and short nature trail with views of the river, salt marsh and mudflats.

5. **Helen Davis Memorial Park**
   Views of forest, river and estuary.

6. **Pullout on Hwy 101**
   This parking area has views of mudflats and forest.

7. **Bruceport Park**
   A forested trail will take you to the beach.

Fields, Wetlands & More!
Take a walk, bike or drive anywhere and you will see a diversity of habitats.

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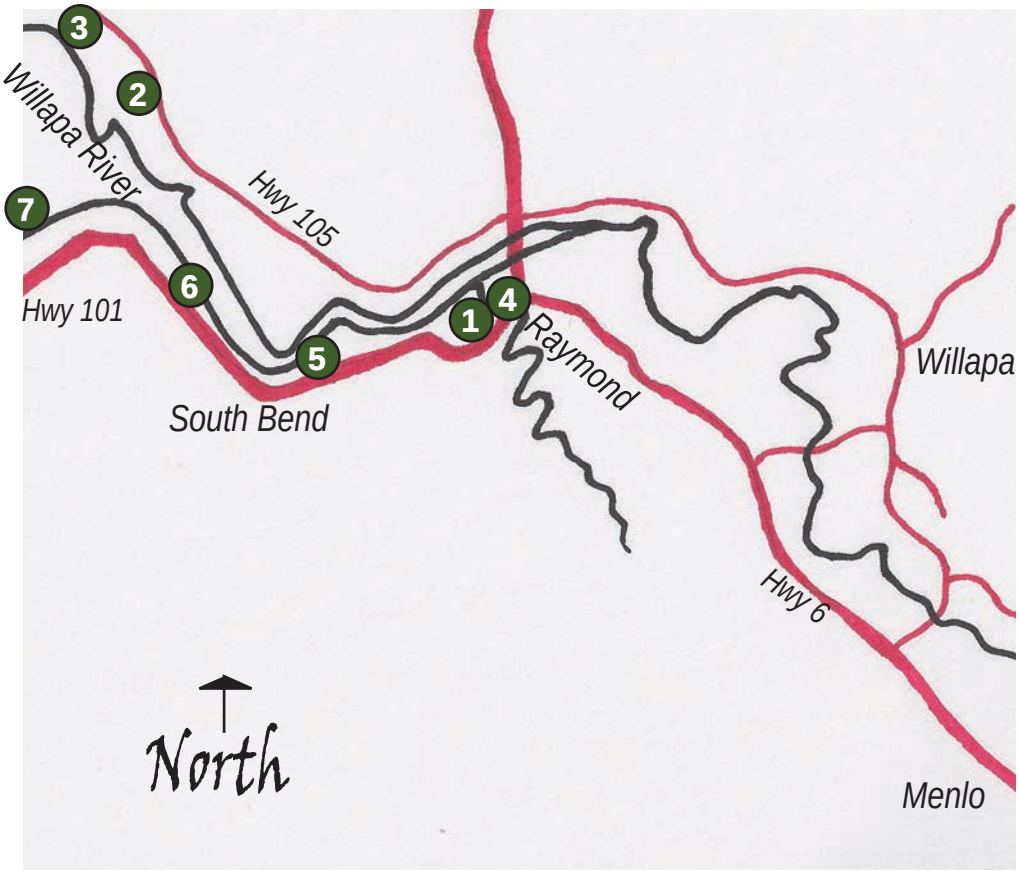

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