

49.44/2:R 43/2/995

PAC 113

ZIMMERMAN LIBRARY
UNIV. OF NEW MEXICO

JUL 11 1995

U.S. Regional Depository

UNIV. OF NEW MEXICO



1. What Are The Wetlands?

The wetlands of the Carty Unit reflect a transition zone between the Columbia River and the uplands. They are constantly influenced by the water level of the river, which alters the flow of Gee Creek and, in turn, raises or lowers the water in the wetlands. Drought and flooding are part of the seasonal cycle.



2. Restaurant For Wildlife

Abundant water in the wetlands grows lush plant life that provides food and cover for many animals. They may live here permanently or only come here to feed and drink. Watch for these wetland inhabitants as you walk along.

Turtles — Painted turtles live in quiet waters of lakes. Using their sharp jaws, they eat aquatic plants, insects, fish, and frogs. Look for groups of turtles basking on a log on sunny days.

Beavers — They alter wetland vegetation by gnawing down willow and cottonwood trees for food and building materials. Look for beaver dams and lodges on wetland channels.

Hérons — Great blue herons can be seen wading the shoreline or standing patiently, waiting for fish to swim by. They spear prey with their long beaks.

Can you think of any other animals that use wetlands?

3. Edges: What Are They? Which Animals Use Them?

Places where two plant communities, such as this shrub thicket and grasslands, meet are particularly rich in wildlife. More animals live along edges since a greater diversity of food and cover is available. A rabbit can easily reach foods of the grasslands while staying close to sheltering blackberries. Watch the edges for signs of wildlife.



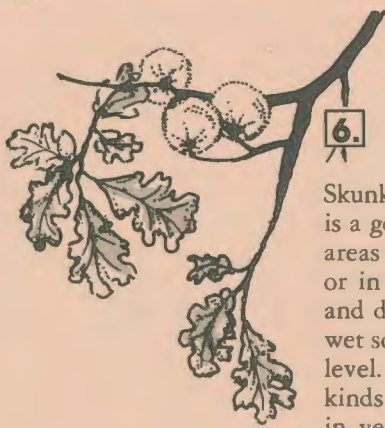
4. Flood And Drought: Where Do The Animals Go?

Wetlands have edges, too, but lines are blurred by changing water levels. Some plants and animals may move with the water; while others try to maintain moisture until the water returns. Bullfrogs stay close to the water's edge, moving with changing moisture conditions. Can you find examples of animals adapted to a wetland life?



5. Insect Nurseries

Female gall wasps sting oak trees, depositing their eggs in leaves or twigs. The tree swells around the egg, forming a gall, or "oak apple." The larva hatches in a secure home and grows to adulthood while eating its way out of the gall. This wasp-tree relationship is only one of many ways that plants and animals interact with one another.



6. Plants Indicate Soil Moisture

Skunk cabbage, with its pungent odor and yellow flower, is a good indicator of wet, boggy soil. It thrives in moist areas but is unable to survive in drier, well-drained soils or in flooded wetlands. Ash trees can tolerate flooding and drying. Oak trees, on the other hand, rot in overly wet soil. They always grow in areas above the high water level. Moisture content of soil, therefore, influences the kinds of plants growing in an area. Watch for changes in vegetation that indicate small, localized changes in the environment.

7. Snag Apartments

When trees die, they don't go to waste. Insects and fungus attack the weakened wood. Woodpeckers drill to feed on the insects and to create nest cavities. Other birds, such as nuthatches, chickadees and owls, nest in holes resulting from decay or take over abandoned woodpecker holes. After the snag falls, other animals might live inside the hollow log.



9. Duck Soup

Ducks like to use this wetland when they stop here during migration or to spend the winter. They find aquatic plants and animals to eat, water for resting and protection from predators, and shelter among the willows from weather extremes. Look and listen carefully and quietly here, and wherever the trail takes you near water. Can you find any ducks?

10. How Do Soils Influence Environment?

The rates at which different types of soil absorb and release water determine what plants can grow in them. The clay in the wetland soil here is slow to wet and dry, so it floods with winter rains and stays damp even in dry summer months. The knolls, on the other hand, have thin, stony soil overlying bedrock. This soil drains well, so it dries out quickly during the summer.



8. Living Earth: Everything Serves A Purpose

While billions of green cells convert the sun's energy to living plant tissue, hosts of insects, bacteria and fungi transform dead tissue into organic matter in the soil. Look around at the decaying trees, branches and stumps for molds, mushrooms, beetles, and worms decomposing them into simpler substances. Carbon dioxide, nitrogen, water and minerals are returned to the soil to nourish new plants as the process goes on and on.



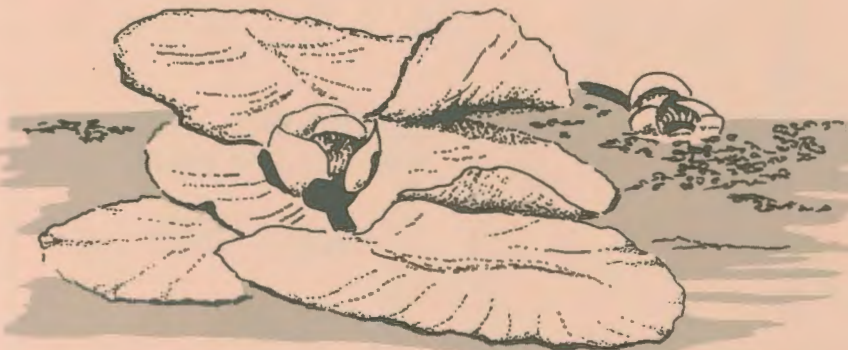
12. How Did The Early Settlers Use This Wetland Environment?

Pioneers used the wetland environment for many economic reasons, including trapping, farming and cattle grazing. Between about 1880 and 1910, workmen also quarried rock from some of these knolls and barged it to Portland for use as street paving stones. By the time the quarries closed, the cobblestone paving may have covered 30 miles of streets! Look up the hill here for evidence of one of the quarries.

11. Natural Flood Control

Floodplains are wetlands along rivers, such as this one near the Columbia River. As the name implies, these wetlands store water during heavy rains and floods. Water flows into the marshes, and then overflows onto wide areas of land. There the water is retained for slow release back into the Columbia River. People mimic nature by building dams on rivers to control flooding and produce electricity.





13. How Did Native Americans Use This Wetland Environment?

Throughout history these wetlands have been important to people. When explorers Lewis and Clark visited here on their homeward journey in 1806, they found some 900 Native Americans living in a prosperous village of large wooden houses. The people ate salmon from the river, ducks and wapato from the marshes, and deer, elk and many kinds of plants from the forest. As you walk here, try to think of all the ways these people could have used wetlands in their daily lives.

14. Wetlands Filter Pollution

Floodplain wetlands are living filters. The quiet backwaters here trap, retard or transform pollutants such as silt, pesticides, toxic metals and organic matters. Microorganisms break down air and water pollutants. At the same time, wetlands generate significant amounts of oxygen through their abundant plant life.



16. Wetlands Today and Tomorrow

The Columbia River once had many acres of floodplain wetlands like the ones here. Most of those wetlands are gone now, diked off from the river and filled in to make airports, shopping centers, ports, industrial sites and agricultural lands. These wetlands on the refuge are protected from disturbance so wildlife can continue to live here and so you can enjoy them.

15. Wildlife Highways

Stream banks like these serve as wildlife travel corridors. They provide cover, food and water for animals moving between the wetlands and the uplands. Check the stream banks for tracks of animals that have traveled this way.



For more information, contact:
Ridgefield National Wildlife Refuge
P.O. Box 457
301 North 3rd Street
Ridgefield, WA 98642
(360) 887-4106



U.S. Department of the Interior
Fish and Wildlife Service
RF 13551 February 1995

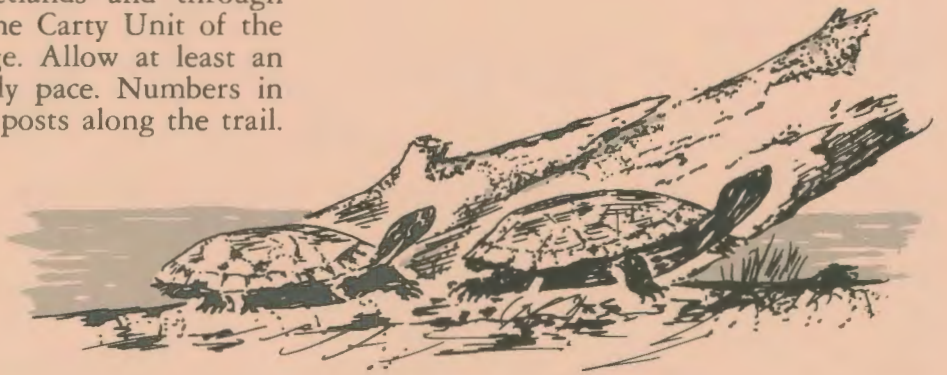


No person shall, on the basis of race, color, sex, age, national origin, religion, physical or mental restrictions, be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in any program or activity of the Department of the Interior.

OAKS TO WETLANDS WILDLIFE TRAIL

Welcome

We invite you to hike beside wetlands and through woodlands in a 1.9-mile loop on the Carty Unit of the Ridgefield National Wildlife Refuge. Allow at least an hour to walk the trail at a leisurely pace. Numbers in this guide correspond to numbered posts along the trail.



Seasonal Detour

With the permission of the owner, the north end of the trail loops onto private property. This section of trail is open to public use from March 1 through September 30. During the remainder of the year, this section is closed to the public to prevent conflicts between trail users and the owner's management activities. A detour is shown on the map and marked by signs.



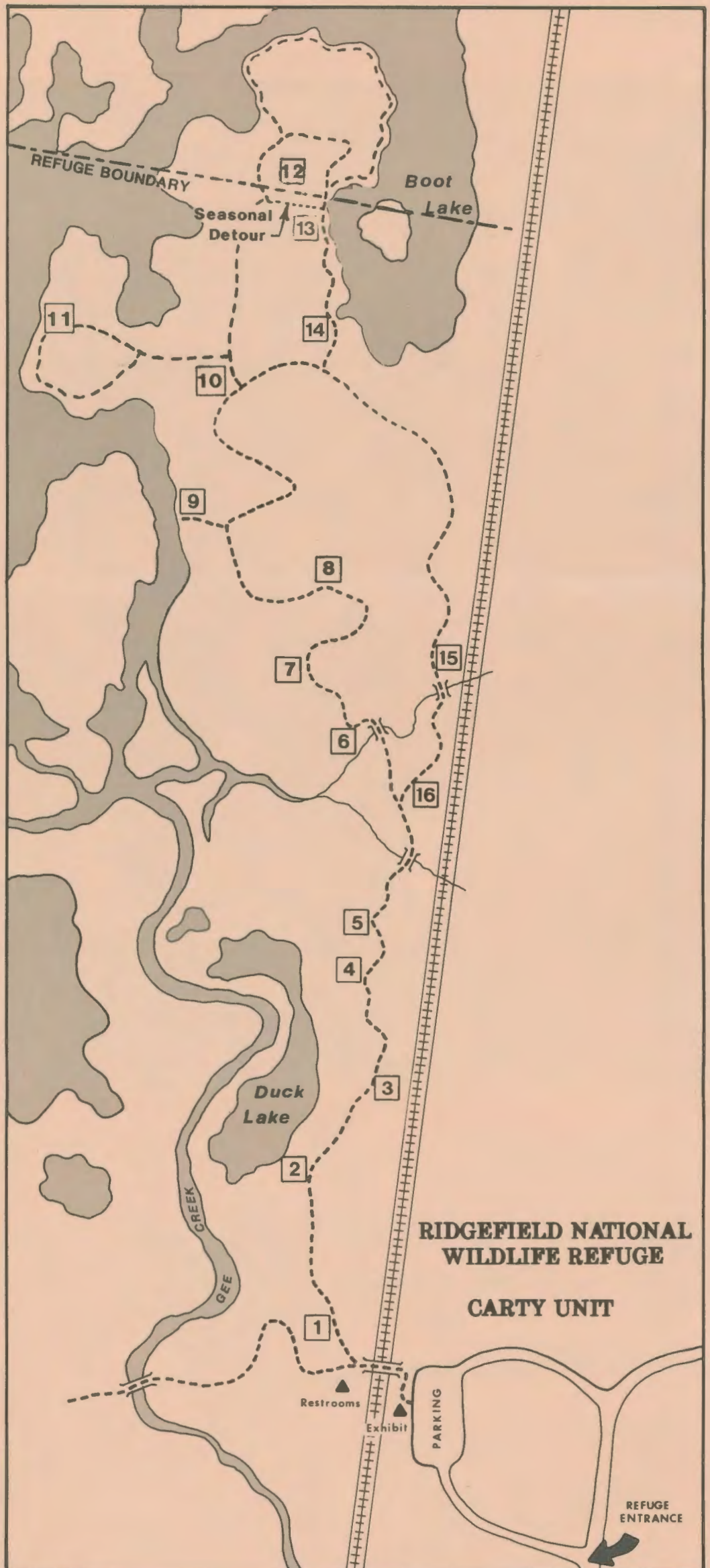
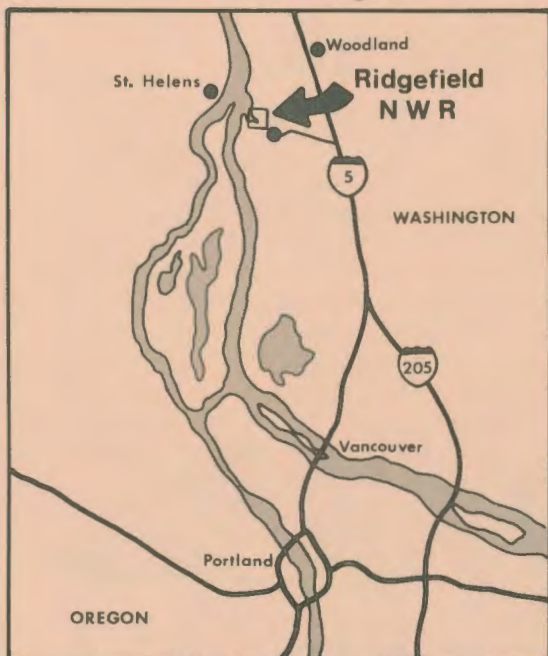
Where Is The Wildlife?

Birds and mammals are plentiful, but their presence can only be detected by keen ears and eyes. Walk quietly and pause often to look and listen. Animals are most active during early morning and evening hours.

Binoculars and spotting scopes will help you get better views of wildlife. Field guide books will help you identify the animals that you see.



Location Diagram



Oaks to Wetlands

Wildlife Trail

Ridgefield National Wildlife Refuge
Ridgefield, Washington



1. What Are The Wetlands?

The wetlands of the Carty Unit reflect a transition zone between the Columbia River and the uplands. They are constantly influenced by the water level of the river, which alters the flow of Gee Creek and, in turn, raises or lowers the water in the wetlands. Drought and flooding are part of the seasonal cycle.



2. Restaurant For Wildlife

Abundant water in the wetlands grows lush plant life that provides food and cover for many animals. They may live here permanently or only come here to feed and drink. Watch for these wetland inhabitants as you walk along.

Turtles — Painted turtles live in quiet waters of lakes. Using their sharp jaws, they eat aquatic plants, insects, fish, and frogs. Look for groups of turtles basking on a log on sunny days.

Beavers — They alter wetland vegetation by gnawing down willow and cottonwood trees for food and building materials. Look for beaver dams and lodges on wetland channels.

Heron — Great blue herons can be seen wading the shoreline or standing patiently, waiting for fish to swim by. They spear prey with their long beaks.

Can you think of any other animals that use wetlands?

3. Edges: What Are They? Which Animals Use Them?

Places where two plant communities, such as this shrub thicket and grasslands, meet are particularly rich in wildlife. More animals live along edges since a greater diversity of food and cover is available. A rabbit can easily reach foods of the grasslands while staying close to sheltering blackberries. Watch the edges for signs of wildlife.

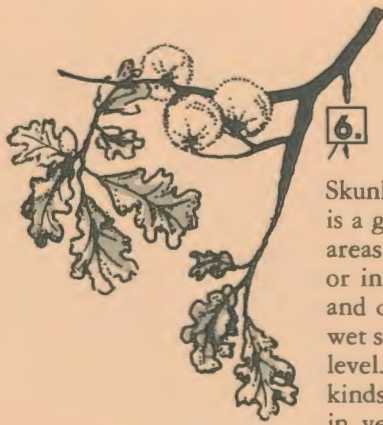


4. Flood And Drought: Where Do The Animals Go?

Wetlands have edges, too, but lines are blurred by changing water levels. Some plants and animals may move with the water, while others try to maintain moisture until the water returns. Bullfrogs stay close to the water's edge, moving with changing moisture conditions. Can you find examples of animals adapted to a wetland life?

5. Insect Nurseries

Female gall wasps sting oak trees, depositing their eggs in leaves or twigs. The tree swells around the egg, forming a gall, or "oak apple." The larva hatches in a secure home and grows to adulthood while eating its way out of the gall. This wasp-tree relationship is only one of many ways that plants and animals interact with one another. Cut a gall open and see if you can find where the wasp larva lived.



6. Plants Indicate Soil Moisture

Skunk cabbage, with its pungent odor and yellow flower, is a good indicator of wet, boggy soil. It thrives in moist areas but is unable to survive in drier, well-drained soils or in flooded wetlands. Ash trees can tolerate flooding and drying. Oak trees, on the other hand, rot in overly wet soil. They always grow in areas above the high water level. Moisture content of soil, therefore, influences the kinds of plants growing in an area. Watch for changes in vegetation that indicate small, localized changes in the environment.

7. Snag Apartments

When trees die, they don't go to waste. Insects and fungus attack the weakened wood. Woodpeckers drill to feed on the insects and to create nest cavities. Other birds, such as nuthatches, chickadees and owls, nest in holes resulting from decay or take over abandoned woodpecker holes. After the snag falls, other animals might live inside the hollow log.



8. Living Earth: Everything Serves A Purpose

While billions of green cells convert the sun's energy to living plant tissue, hosts of insects, bacteria and fungi transform dead tissue into organic matter in the soil. Look around at the decaying trees, branches and stumps for molds, mushrooms, beetles, and worms decomposing them into simpler substances. Carbon dioxide, nitrogen, water and minerals are returned to the soil to nourish new plants as the process goes on and on.

9. Duck Soup

Ducks like to use this wetland when they stop here during migration or to spend the winter. They find aquatic plants and animals to eat, water for resting and protection from predators, and shelter among the willows from weather extremes. Look and listen carefully and quietly here, and wherever the trail takes you near water. Can you find any ducks?



10. How Do Soils Influence Environment?

The rates at which different types of soil absorb and release water determine what plants can grow in them. The clay in the wetland soil here is slow to wet and dry, so it floods with winter rains and stays damp even in dry summer months. The knolls, on the other hand, have thin, stony soil overlying bedrock. This soil drains well, so it dries out quickly during the summer.



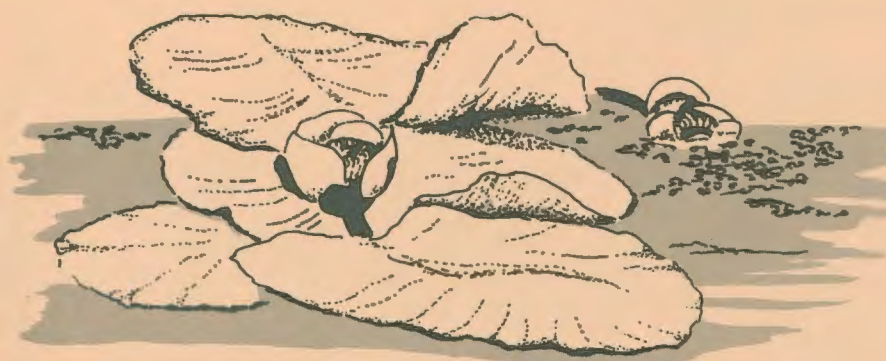
12. How Did The Early Settlers Use This Wetland Environment?

Pioneers used the wetland environment for many economic reasons, including trapping, farming and cattle grazing. Between about 1880 and 1910, workmen also quarried rock from some of these knolls and barged it to Portland for use as street paving stones. By the time the quarries closed, the cobblestone paving may have covered 30 miles of streets! Look up the hill here for evidence of one of the quarries.



11. Natural Flood Control

Floodplains are wetlands along rivers, such as this one near the Columbia River. As the name implies, these wetlands store water during heavy rains and floods. Water flows into the marshes, and then overflows onto wide areas of land. There the water is retained for slow release back into the Columbia River. People mimic nature by building dams on rivers to control flooding and produce electricity.



13. How Did Native Americans Use This Wetland Environment?

Throughout history these wetlands have been important to people. When explorers Lewis and Clark visited here on their homeward journey in 1806, they found some 900 Native Americans living in a prosperous village of large wooden houses. The people ate salmon from the river, ducks and wapato from the marshes, and deer, elk and many kinds of plants from the forest. As you walk here, try to think of all the ways these people could have used wetlands in their daily lives.

14. Wetlands Filter Pollution

Floodplain wetlands are living filters. The quiet backwaters here trap, retard or transform pollutants such as silt, pesticides, toxic metals and organic matters. Microorganisms break down air and water pollutants. At the same time, wetlands generate significant amounts of oxygen through their abundant plant life.



16. Wetlands Today and Tomorrow

The Columbia River once had many acres of floodplain wetlands like the ones here. Most of those wetlands are gone now, diked off from the river and filled in to make airports, shopping centers, ports, industrial sites and agricultural lands. These wetlands on the refuge are protected from disturbance so wildlife can continue to live here and so you can enjoy them.

15. Wildlife Highways

Stream banks like these serve as wildlife travel corridors. They provide cover, food and water for animals moving between the wetlands and the uplands. Check the stream banks for tracks of animals that have traveled this way.



For more information, contact:

Ridgefield National Wildlife Refuge
P.O. Box 457
301 North 3rd Street
Ridgefield, WA 98642
(206) 887-4106



U.S. Department of the Interior
Fish and Wildlife Service

RF13551 August 1992



No person shall, on the basis of race, color, sex, age, national origin, religion, physical or mental restrictions, be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in any program or activity of the Department of the Interior.

OAKS TO WETLANDS WILDLIFE TRAIL

Welcome

We invite you to hike beside wetlands and through woodlands in a 1.9-mile loop on the Carty Unit of the Ridgefield National Wildlife Refuge. Allow at least an hour to walk the trail at a leisurely pace. Numbers in this guide correspond to numbered posts along the trail.



Seasonal Detour

With the permission of the owner, the north end of the trail loops onto private property. This section of trail is open to public use from March 1 through September 30. During the remainder of the year, this section is closed to the public to prevent conflicts between trail users and the owner's management activities. A detour is shown on the map and marked by signs.



Where Is The Wildlife?

Birds and mammals are plentiful, but their presence can only be detected by keen ears and eyes. Walk quietly and pause often to look and listen. Animals are most active during early morning and evening hours.

Binoculars and spotting scopes will help you get better views of wildlife. Field guide books will help you identify the animals that you see.



Location Diagram

