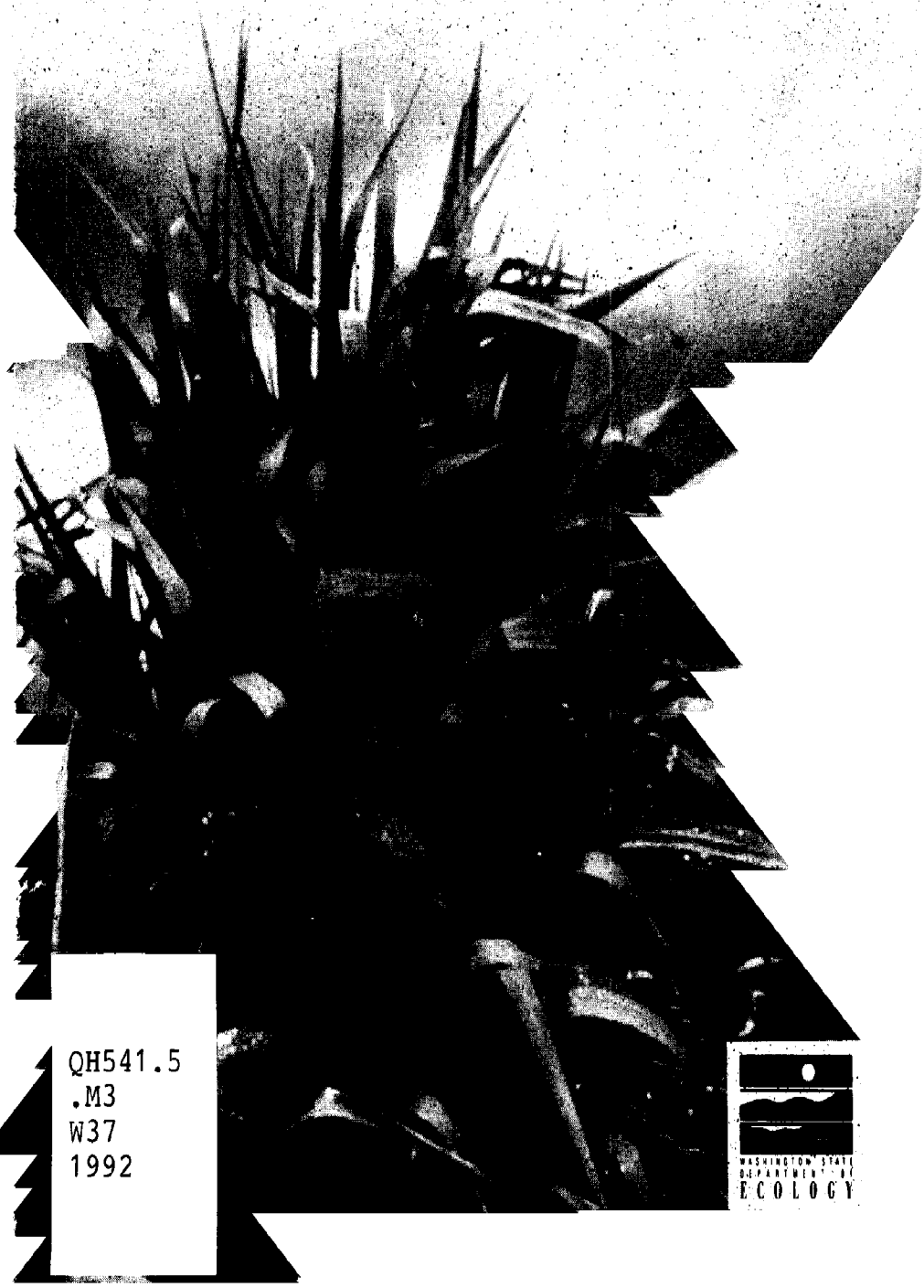
DISPLAY

Washington's Wetlands

Publication #92-105



QH541.5
.M3
W37
1992

WASHINGTON STATE DEPARTMENT OF ECOLOGY

AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

Washington's Wetlands

Produced by the Washington
State Department of Ecology

Publication #92-105

This document is a revision of the
1988 publication, *Washington's
Wetlands* (publication #88-24).

To order additional copies, contact:
Publications Office
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Written and designed by Nikki McClure

Photographs by: Steve Morrison, page 3
Ken Pritchard, Adopt a Beach, page 10

This publication was funded in part through a cooperative agreement with the National Oceanic and Atmospheric Administration. The views expressed herein are those of the author and do not necessarily reflect the views of NOAA or any of its subagencies.

Printed on recycled paper with vegetable-based inks.

Where are Washington's Wetlands?

Where wetlands are located and what they look like

Look around. More likely than not, there is a wetland near where you live, work, or play. Wetlands are found throughout the state in all shapes and sizes, next to bodies of water or isolated. Wetlands can be freshwater or saltwater. They are found in wilderness, rural, and urban areas. They vary from pristine and relatively untouched to severely degraded. In all, wetlands cover approximately 938,000 acres in Washington, or only 2 percent of the land in the state.

What are Wetlands?

Wetlands determined by three characteristics

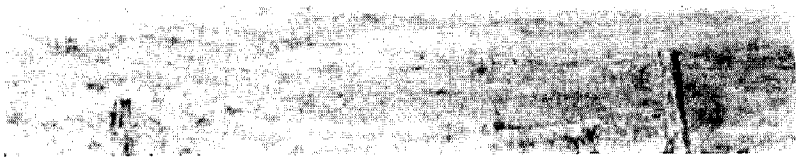
A wetland can be the edge of a river or a lake; a shallow pond or swamp; a marshy field or forested bog; or a shrubby area filled with willows. Despite the variety of wetlands, they have three characteristics in common: hydric soils, water-tolerant plants, and the presence of water for a significant number of days during the growing season.

Wetland Characteristics

1. Soils- hydric soils are soils that are saturated long enough to produce low oxygen conditions.

2. Plants- hydrophytic plants can tolerate low oxygen levels of hydric soils.

3. Water- present for a significant number of days during the growing season.



Wetlands not only vary in size, type, and location, they also vary individually. Some wetlands dry out during the summer and flood in winter.

The two pictures above are of the same wetland. The top photo was taken in November and the bottom photo was taken in September.

Despite the lack of water during the summer, the field can still be classified as a wetland by analyzing the soil and vegetation. The presence of water is only one factor that determines if an area is a wetland.

Wetland Functions and Values

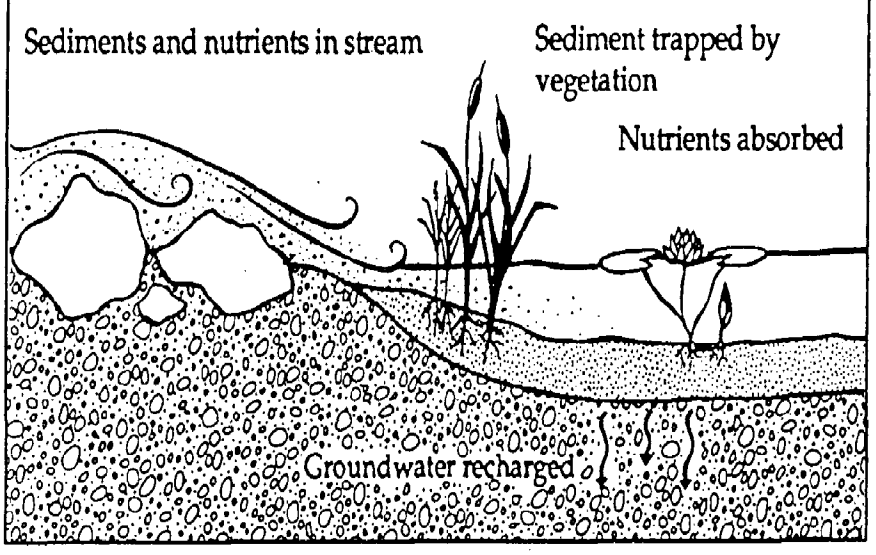
Flood protection, water quality, and streamflow

Each wetland performs specific functions in its individual watershed and has localized significance in its community. These functions may include flood protection and control, water quality and supply, shoreline stabilization, fish and wildlife habitat, and aesthetic values. Not every wetland performs all of the functions listed above. However, even if a wetland only performs one function, that wetland may be a vital link in its watershed.

Flood Reduction and Protection

Wetlands lower flood peaks by holding back water during storms and spring snowmelt. The maze of plant roots and soil in wetlands can slow the velocity of a flood thus giving the land time to absorb the excess water. Wetlands do not always have to be wet; they can dry out, ready to soak up the next deluge of water like a sponge, protecting downstream areas from excess runoff. In watersheds where wetlands have been lost, flood peaks may increase by as much as 80 percent.

Water Quality and Supply



Water Quality

Wetlands improve water quality by trapping nutrients, sediment, and pollutants. Excess nutrients are taken up by wetland plants and animals and are subsequently used or converted into less harmful chemical forms. Nutrient overloaded water can cause "algal blooms" resulting in low levels of oxygen that can kill fish and other aquatic life.

As water is slowed by wetlands, sediment normally carried by faster moving water settles. Pollutants attached to the sediment, such as heavy metals, settle as well and are then secured in the soil. However, the pollution is only temporarily removed from the water. Once the plants die or the mud is disturbed, some pollution is able to enter the water again. Wetlands can only do so much to clean water. We have to do our part to prevent pollution from entering the water that we drink and that other animals live in.

Streamflow Maintenance and Groundwater Recharge

Wetlands maintain streamflows by gradually releasing stored water after floods and wet seasons. Streamflows and cool water temperatures are sustained, protecting fish habitat that might otherwise dry out.

Wetlands also recharge groundwater that can later be pumped to the surface, providing water for drinking and irrigation. Water collecting in a wetland is slowed as it seeps through the roots and mud, filtering eventually down into the groundwater. Sediment and toxins are trapped between soil particles; while water trickles down and is purified by the natural filter of wetlands. Wetlands' filtering and storing of water is an important element in the hydrologic cycle and may greatly enhance a watershed's ability to withstand periods of drought.

Wetland Functions and Values

Shoreline stabilization, fish and wildlife habitat, and aes

Shoreline Stabilization

Wetlands stabilize shorelines by diffusing the erosive forces of waves and current. Wetland plants bind the soil with their intricate roots, creating a natural buffer that absorbs the waves' force. Bulkheads and banks send the corrosive waves further downstream or downshore to erode neighboring shorelines. Shoreline wetlands also provide one last chance to filter out toxins and pollution from runoff before the water enters the lake, river, estuary, or ocean.

Fish and Wildlife Habitat

Wetland habitat is vital to 212 animal species in Western Washington and 285 species in the eastern region of the state. Many more mammals, fish, birds, amphibians, reptiles, and insects use wetlands for breeding, foraging, or protection. Some animals like beavers spend their entire lives in one wetland; while others such as shorebirds and salmon use wetlands during their migrations.

thetic value

Many freshwater and saltwater fish are dependent upon wetlands at some stage in their life cycle. Some fish spawn in wetlands and juvenile marine fish hide in the shallow waters of coastal marshes to avoid predators. Coastal wetlands also provide a nutrient-rich and protective nursery for shellfish and other marine organisms.

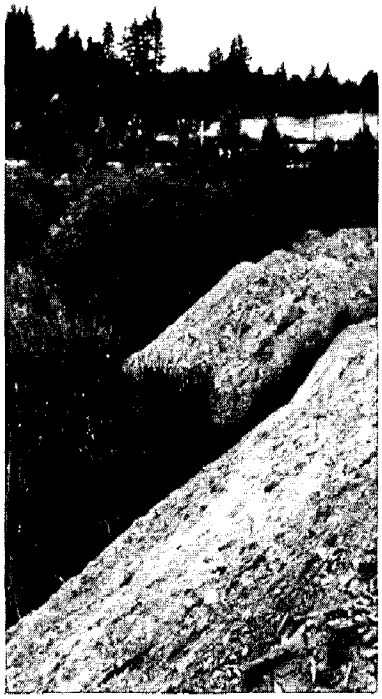
Aesthetic

The value of wetlands for aesthetic contributions is a personal matter. For some, wetlands will never be beautiful. To others, wetlands provide a quiet place to hear the song of birds. Go explore a wetland and discover what value wetlands have to you.

What is the Problem?

Wetlands continue to be lost or degraded

As our understanding of wetland ecology increases, we are becoming more aware of the important roles wetlands play in watersheds. Yet, despite the many irreplaceable and invaluable functions that wetlands perform, wetlands continue to be lost. It is estimated that 33-50 percent of Washington's wetlands have been lost since colonization, with some metropolitan areas in Puget Sound losing over 90 percent of their wetlands.



How and Why Wetlands Are Lost

Wetlands are often filled or drained in order to make land developable. Wetland losses are due to urban development in the form of industry, port dredging, and highway construction; agricultural activities such as clearing, diking, and grazing; and forestry practices. Wetlands are also adversely affected by the destruction of beaver dams, non-native plant species invasion, and by fertilizer and pesticide use in and around them.

Many wetlands that have not been drained or filled are affected by adjacent use. Parking lots and roads next to a wetland send oil-laden runoff into the cattails leaving the asphalt clean and the wetland degraded. Animals living in wetlands need a buffer from buildings, pets, cars, and people. Without a sufficient amount of privacy and quiet, the animals cannot live.

All of the activities noted directly affect the ability of wetlands to perform their necessary functions. Any activity that alters the course or quality of water feeding into a wetland, may affect the watershed and the community as a whole. Diverting water by draining, diking, or filling disrupts the hydrological cycle of the watershed and may cause flooding. Draining may affect water quality and streamflows as water is unable to collect in pools and filter through the wetland. Improper livestock watering and grazing in or near a wetland can cause trampled vegetation and eroded banks. Sediment is sent into the wetland, while at the same time the wetland's ability to remove the sediment by way of plant roots is decreased. It is best to provide a buffer area around wetlands and to leave wetlands in their natural state.

Laws Regulating Wetland Use

There is no comprehensive state wetlands law in Washington. There are, however, several state, federal, and local laws which regulate certain activities in some wetlands. Contact your local planning office before conducting any activities that might affect wetlands. For more information on regulations concerning wetlands, refer to *Wetland Regulations Guidebook* (publication #88-5) available free of charge from the Department of Ecology.

What You Can Do

Wetland protection, enhancement and preservation

The protection of wetlands depends on public involvement and cooperation. There are many ways to get involved. The first step is to educate yourself about wetland ecology and issues concerning wetland loss and protection, then act with an informed vision. Suggested resources and ideas for involvement are listed.

Landowners with wetlands on their property

Protect your wetland.
Avoid dumping, draining, or filling near your wetland. Even yard waste may adversely affect your wetland.

Respect wetland animals' need for a buffer zone and for privacy. Mark or fence off a buffer area around your wetland.

Enhance your wetland.
Small-scale enhancement projects are explained in Ecology's publication, *At Home With Wetlands: A Landowner's Guide* (publication #90-31).

Preserve your wetland.
Ecology's *Wetlands Preservation: An Information and Action Guide* (publication #90-5) offers wetland preservation options and describes numerous nonprofit organizations and land trusts that can help you preserve your wetland.

Citizens

Respect wetland buffers and minimize your impact upon wetlands when you visit them.

Visit local wetlands and be on the lookout for any signs of degradation. *Wetland Walks* (publication #89-30) lists public access wetlands by county. A wetlands inventory has been completed for the state as part of the National Wetlands Inventory. In some cities and counties detailed local wetland maps are also available.

Familiarize yourself with local wetland ordinances. If none exist for your community, encourage adoption of a wetland ordinance.

Ask candidates for public office their policy concerning wetlands and then make an informed vote.

Support local organizations working to preserve wetlands such as land trusts.

Kids

Ask your teacher to teach about wetlands.

Write to decision makers and invite them to your school to talk about what they do and how it affects wetlands.

Tell others about wetlands and organize a wetlands clean-up party.

Teachers

Learn about wetlands by attending wetland or environmental education workshops.

Bring wetlands into your school by organizing a Wetlands Week.

Wetlands curriculum, workshops, publications and other resources for teachers are available from Ecology's Wetlands Section. Write or call (206) 438-7538 or (206) 459-6774 for more information.

Wetlands Educational Materials

Wetland publications and videos

The following educational materials are available free of charge from the Washington State Department of Ecology:

Publications

At Home With Wetlands: A Landowner's Guide (#90-31)
Describes ways landowners can protect or enhance wetlands on their property.

Wetland Preservation: An Information and Action Guide (#90-5)
Outlines methods private citizens, nonprofit organizations, and public agencies can use to protect wetlands.

Wetland Regulation Guidebook (#88-5)
A clear and concise overview of the regulations affecting wetlands.

Wetland Walks (#89-30)
A guide to publicly accessible wetlands in Washington State.

Wetlands (#92-49)
A children's guide to wetland plants and animals.

Videos

Fabulous Wetlands, VHS, 7 minutes
A wacky and entertaining video featuring Bill Nye "the Science Guy" talking about the importance of wetlands.

Washington's Wetlands, VHS, 15 minutes
A video of still images that provides an overview of fresh and saltwater wetlands in Washington.

Yellowlegs, Eelgrass, and Tideflats, VHS, 25 minutes
A beautiful film on Washington's estuaries emphasizing the variety of wildlife common to these areas.

To obtain wetland publications and loan videos, contact:

Publications Office
Washington State
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Please include the publication number, title, and quantity needed with each request.

NOAA COASTAL SERVICES CENTER LIBRARY
3 6668 00004 4554