

**Other available titles in this series include:**

- Erosion Control
- Federal Laws
- Non-Point Source Pollution
- Oregon Coastal Planning Goals
- Wetland Permitting



**Columbia River Estuary Study Taskforce**

750 Commercial Street, Room 205  
Astoria, OR 97103  
503-325-0435  
[www.columbiaestuary.org](http://www.columbiaestuary.org)

All photographs and drawings by CREST unless otherwise cited.

December 2003. The purpose of this brochure series is to provide information to CREST Oregon jurisdictions. This brochure was funded by a coastal project grant from the Oregon Department of Land Conservation and Development.

# Wetland and Riparian Areas



**Wetlands  
Wetland Functions & Values  
Riparian Areas  
Riparian Area Functions & Values  
Development Considerations  
For More Information**

*December 2003*



## WETLANDS

### What is a Wetland?

Wetlands are areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. (ORS 196.800; Clean Water Act §404)

### Basic Characteristics of a Wetland

The defining characteristics of a wetland includes the presence of all of the following: wetland hydrology, hydric soils, and hydrophytic vegetation.

#### Water

Wetland hydrology is the presence of water at/or near the surface.

#### Soil

Hydric soils are those soil types which are saturated for long enough that anoxic (lacking oxygen) conditions are created.

#### Plants

Hydrophytic vegetation are those plants adapted for living in water-saturated soils. Typical wetland plants are cattails, rushes, sedges, skunk cabbage, and water parsley.



## FOR MORE INFORMATION

### Sources of Information

Your local jurisdiction's Planning Department (Clatsop County, Astoria, Cannon Beach, Gearhart, Seaside, Warrenton) is a good source of information.

Division of State Lands. *Wetland Conservation Statute. Legislative Findings.* [www.oregonstatelands.us/wetland\\_conv\\_stat.htm](http://www.oregonstatelands.us/wetland_conv_stat.htm)

Division of State Lands, Wetlands Program. March 1999. Just the Facts #5. *Wetlands Functions and Assessment*

U.S. Army Corps of Engineers. *Recognizing Wetlands: An Informational Pamphlet.* [www.usace.army.mil/inet/functions/cw/cecwo/reg/rw-bro.htm](http://www.usace.army.mil/inet/functions/cw/cecwo/reg/rw-bro.htm)

U.S. Environmental Protection Agency. *Wetland Fact Sheets.* [www.epa.gov/OWOW/wetlands/contents.html](http://www.epa.gov/OWOW/wetlands/contents.html)

### Contacts

Clatsop Soil and Water Conservation District  
750 Commercial Street, Rm. 207  
Astoria, OR 97103  
(503) 325-4571  
[www.cswcd.org](http://www.cswcd.org)

Clatsop County Watershed Council Coordinator  
750 Commercial Street, Rm. 205  
Astoria, OR 97103  
(503) 325-0435  
[www.clatsopwatersheds.org](http://www.clatsopwatersheds.org)

Division of State Lands  
775 Summer Street, NE  
Suite 100  
Salem, OR 97301  
(503) 378-3805  
[www.oregonstatelands.us](http://www.oregonstatelands.us)

U.S Army Corps of Engineers  
Portland District, Regulatory Branch  
P.O. Box 2946  
Portland, OR 97208-2946  
(503) 808-4373  
[www.nwp.usace.army.mil](http://www.nwp.usace.army.mil)

## DEVELOPMENT CONSIDERATIONS

### Development Considerations

Some things to consider when developing your project:

- Can the impact to the wetland or waterway be avoided?
- Can the impact to the wetland or waterway be minimized?
- What types of project design can be incorporated to offset any impacts to the wetland or waterway?

Some best management practices to keep in mind:

- Establish or maintain a natural vegetation riparian buffer around wetlands and waterways;
- Plan development to avoid wetland and riparian areas and minimize wetland and riparian crossings.

### Conservation and Restoration Options

Two strategies for reducing development impacts are conservation and restoration. These strategies employ the use of a variety of best management practices (BMPs). BMPs are recommended actions for land use activities to aid in the protection of water quality.

#### Conservation

- Plan development away from natural areas;
- Leave wood and other natural debris in streams;
- Preserve existing native vegetation;
- Pollution control;
- Manure management.

#### Restoration

- Large woody debris placement;
- Fencing to keep livestock out of the waterway;
- Restore eroded/eroding stream banks with streambank tree plantings;
- Channel reconnections;
- Remove non-native invasive plant species, such as: Himalayan Blackberry, Japanese Knotweed, Yellow Iris, Tansy Ragwort, Reed Canary Grass, Gorse, Scotch Broom, and English Ivy.

## WETLAND FUNCTIONS & VALUES

#### Reduce Erosion

- Slow down wave action along shorelines preventing soil from eroding;
- Catch runoff and reduce stormwater flow velocity.

#### Fish and Wildlife Habitat

- Essential habitat for waterfowl using the Pacific Flyway;
- Rearing habitat for salmon and other anadromous and resident fish;
- Food, resting areas, nesting and rearing habitat for resident and migratory birds;
- Food, spawning and/or nursery areas for 2/3<sup>rd</sup>s of commercially important fish and shellfish species nationally;
- Important habitat for the nearly 35% (nationally) rare and endangered animals dependant on wetlands.

#### Flood Storage

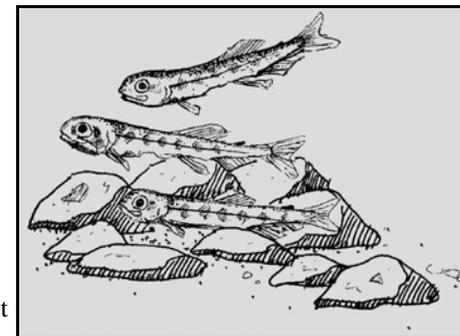
- Temporary storage of flood waters which protect downstream property;
- Absorb and hold large volumes of water that if otherwise unrestrained could result in flooding;
- Reduce peak flood heights, stream velocities and streambank erosion;
- Release stored water during low flows and help maintain stream temperatures.

#### Recreation, Aesthetic Appeal, Education

- Bird watching;
- Wildlife photography;
- Hunting;
- Fishing;
- Environmental education.

#### Water Quality

- Accumulation areas for sediments which retain nutrients and other pollutants;
- Filters out pollutants - effective at removing nitrogen, phosphorous, some chemicals, heavy metals and other pollutants from water;
- Catch runoff and soak it up before it reaches open water (lakes, rivers, estuary, ocean).



## RIPARIAN AREAS

### What is a Riparian Area?

Riparian areas are transitional zones between aquatic and terrestrial (upland) environments, including flood plains and streambanks.

### Basic Characteristics of a Riparian Area

The defining characteristic of a riparian area is its proximity to an associated waterbody. In a natural environment, a riparian area may also have transitional soils and riparian vegetation. However, these two characteristics may not always be present in an urban area.

#### Water

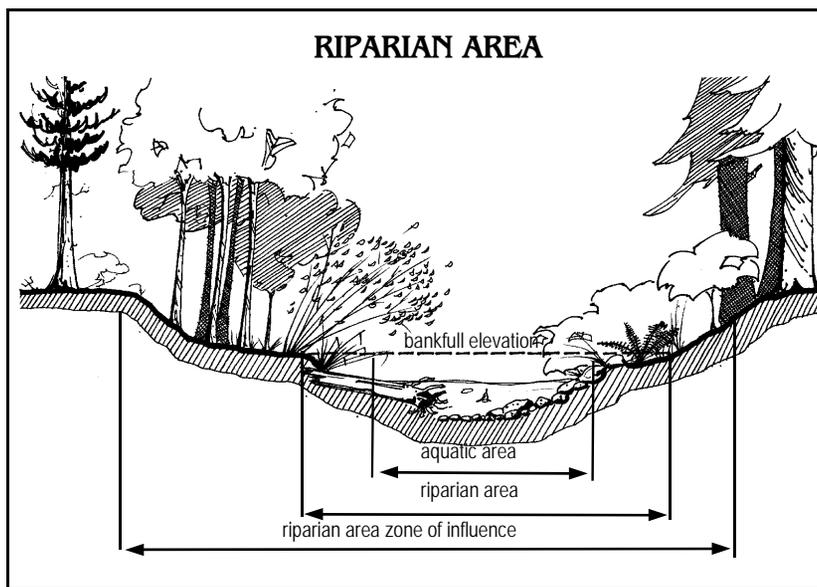
Riparian areas directly influence or are directly influenced by an associated waterbody.

#### Soil

The sediments in a riparian area are subject to intermittent flooding or fluctuating water tables.

#### Plants

The kinds and quantities of plants differ from adjacent upland vegetation because more water is supplied to the plants from the associated water body. Typical riparian plants include willows, alders, and spruce.



## RIPARIAN AREA FUNCTIONS & VALUES

#### Fish and Wildlife Habitat

- Linear nature of riparian ecosystems provides migration corridors, dispersal routes and habitat connectors for wildlife;
- Networks formed by trees and other plants in riparian buffers provide excellent shade and cool cover for animals large and small. The combination of vegetative cover and the reduced water temperatures that such cover brings to riparian areas provide temperature relief for many birds and other animals;
- Overhangs provide fish habitat and shade;
- Traps sediment;
- Litter-fall produced within the riparian ecosystem is made available to in-stream animal communities. This organic matter supports a diversity of food webs.

#### Hydrology

- Water flow shapes the riparian zone and affects soil development and vegetation growth.

#### Recreation, Aesthetic Appeal, Education

- Bird watching;
- Wildlife photography;
- Hunting;
- Fishing;
- Environmental education.

#### Reduce/Control Flooding

- Vegetation slows down stormwater flow and dissipates the energy, increasing the time available for the water to infiltrate into the soil.

#### Shorebank Stabilization

- Roots of trees and plants hold streambank soil in place and aid in the prevention of erosion.

#### Water Quality

- Reduce storm water velocities and allow sediment and nutrient-rich organic materials to settle out;
- Absorb and hold pollutants before they can reach the stream;
- Shade the water to maintain water temperature within the stream or river.

