

# The Critical Nature of Wetlands: Why We Must Save Those That Remain

## INTRODUCTION

When decision makers do not fully appreciate the functions and values of complex ecosystems, such as wetlands, they often make choices that irrevocably impair them. Such changes reduce the value of the ecosystem and adversely affect the economy as well. A basic understanding of the functions and values of wetlands can improve decision making today and protect values for future generations.

## WHY ARE THE CHUCKANUT RIDGE WETLANDS SO IMPORTANT?

Wetlands are an important part of our national heritage. Our economic well-being and quality of life largely depend on our nation's wealth of natural resources, and wetlands are the vital link between our land and water resources. As wetlands are lost, compromised or isolated, the remaining wetlands become even more valuable.<sup>1</sup>

Wetlands are a significant factor in the health and existence of other natural resources, such as inland lakes, ground water, fisheries, wildlife, and the Puget Sound. Wetland benefits include:

- **Flood and storm control** by the hydrologic absorption and storage capacity of wetlands.
- **Wildlife habitat** by providing breeding, nesting, and feeding grounds and cover for many forms of wildlife, waterfowl, including migratory waterfowl, and rare, threatened, or endangered wildlife species.
- **Protection of subsurface water resources and provision of valuable watersheds** and recharging ground water supplies.
- **Pollution treatment** by serving as a biological and chemical oxidation basin.
- **Erosion control** by serving as a sedimentation area and filtering basin, absorbing silt and organic matter.
- **Sources of nutrients** in water food cycles and nursery grounds and sanctuaries for fish.<sup>2</sup>

These benefits play a vital role in recreation, tourism, and the economy of our city, county and state.

Since so many of our region's original wetlands have been drained, filled, or isolated, protection of remaining wetlands, especially highly-valued mature forested Category 1 wetlands like the five that exist within Chuckanut Ridge, is even more critical.

## WHAT ARE WETLANDS?<sup>3</sup>

Wetlands are among the most productive ecosystems in the world, comparable to rain forests and coral reefs. An immense variety of species of microbes, plants, insects, amphibians, reptiles, birds, fish, and mammals can be part of a wetland ecosystem.

Wetlands can be thought of as "biological supermarkets." They provide great volumes of food that attract many animal species. These animals use wetlands for part of or all of their life-cycle.

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<sup>1</sup> US Environmental Protection Agency (EPA), <http://www.epa.gov/OWOW/wetlands/vital/protection.html>

<sup>2</sup> Michigan Wetland Program, [www.michigan.gov](http://www.michigan.gov)

<sup>3</sup> EPA, <http://www.epa.gov/OWOW/wetlands/vital/nature.html>

Wetlands play an integral role in the ecology of the watershed. The combination of shallow water, high levels of nutrients, and primary productivity is ideal for the development of organisms that form the base of the food web and feed many species of fish, amphibians, shellfish, and insects. Many species of birds and mammals rely on wetlands for food, water, and shelter, especially during migration and breeding. Furthermore, scientists are beginning to realize that atmospheric maintenance may be an additional wetlands function. Wetlands store carbon within their plant communities and soil instead of releasing it to the atmosphere as carbon dioxide. Thus wetlands help to moderate global climate conditions.

## WETLANDS AND PEOPLE<sup>4</sup>

Only recently have we begun to understand the importance of the functions that wetlands perform. Wetlands provide values that no other ecosystem can, including natural **water quality** improvement, **flood protection**, shoreline **erosion control**, opportunities for **recreation and aesthetic appreciation**, and **natural products** for our use at no cost.

➤ **Protecting wetlands in turn can protect our safety and welfare.**

### Water Quality and Hydrology

Wetlands have important filtering capabilities for intercepting surface water runoff before the runoff reaches open water. As the runoff water passes through, the **wetlands retain excess nutrients and some pollutants**, and **reduce sediment** that would clog waterways and affect fish and amphibian egg development. In performing this filtering function, wetlands save us a great deal of money. For example, a 1990 study showed that, without the Congaree Bottomland Hardwood Swamp in South Carolina, the area would need a \$5 million waste water treatment plant.

In addition to improving water quality through filtering, some wetlands **maintain stream flow during dry periods and replenish groundwater**, which many Americans depend on for drinking.

### Flood Protection

Wetlands function as natural sponges that trap and slowly release surface water, rain, snowmelt, groundwater and flood waters. Trees, root mats, and other wetland vegetation also slow the speed of flood waters and distribute them more slowly over the floodplain. This combined water storage and braking action **lowers flood heights and reduces erosion**. **Wetlands within and downstream of urban areas are particularly valuable**, counteracting the greatly increased rate and volume of surface-water runoff from pavement and buildings.

The holding capacity of wetlands helps **control floods and prevents water logging of crops**. Preserving and restoring wetlands, together with other water retention, can often provide the level of flood control otherwise provided by expensive dredge operations and levees.

### Shoreline Erosion

The ability of wetlands to control erosion is so valuable that some states are restoring wetlands in coastal areas to buffer the storm surges from hurricanes and tropical storms. Wetlands at the margins of lakes, rivers, bays, and the ocean protect shorelines and stream banks against erosion. **Wetland plants hold the soil in place** with their roots, absorb the energy of waves, and break up the flow of stream or river currents.

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<sup>4</sup> EPA, <http://www.epa.gov/OWOW/wetlands/vital/people.html>

## **Fish and Wildlife Habitat**

More than one-third of the United States' threatened and endangered species live only in wetlands, and nearly half use wetlands at some point in their lives. Many other animals and plants depend on wetlands for survival.

Estuarine and marine fish and shellfish, various birds, and certain mammals must have coastal wetlands to survive. For many animals and plants, like wood ducks, muskrat, cattails, and swamp rose, inland wetlands are the only places they can live. For others, such as striped bass, peregrine falcon, otter, black bear, raccoon, and deer, wetlands provide important food, water, or shelter.

Many of the U.S. breeding bird populations - including ducks, geese, woodpeckers, hawks, wading birds, and many song-birds - feed, nest, and raise their young in wetlands. Migratory waterfowl use coastal and inland wetlands as resting, feeding, breeding, or nesting grounds for at least part of the year. Indeed, an international agreement to protect wetlands of international importance was developed because some species of migratory birds are completely dependent on certain wetlands and would become extinct if those wetlands were destroyed.

Wetlands are important spawning nursery areas and provide plant food for commercial and recreational fish and shellfish industries. **An estimated 71% of the multi-billion fishery processing and sales industries is derived from fish species that during their life cycles depend directly or indirectly on coastal wetlands.**

## **Natural Products for Our Economy**

We use a wealth of natural products from wetlands, including fish and shellfish, blueberries, cranberries, timber, and wild rice, as well as medicines that are derived from wetland soils and plants. Many of the nation's fishing and shellfishing industries harvest wetland-dependent species; the catch is valued at \$15 billion a year.

## **Recreation and Aesthetics**

Wetlands have recreational, historical, scientific, and cultural values. More than half of all U.S. adults enjoy birdwatching, fishing, nature photography and other activities that require the preservation of wildlife. They spend more than \$60 billion annually. Artists continue to capture the beauty of wetlands on canvas, paper, cameras, and video and sound recorders. Others appreciate these wonderlands through hiking, boating, and other recreational activities. Almost everyone likes being on or near the water; part of the enjoyment is the varied, fascinating life forms.<sup>5</sup>

## **CONCLUSION**

The extensive network of wetlands within the Chuckanut Ridge urban forest is an invaluable resource for the City of Bellingham and its residents. Five of these wetlands are mature forested Category 1 wetlands regulated by Section 404 of the Clean Water Act. It is essential that decision makers understand the values and functions of these irreplaceable and rare wetland communities and protect these priceless ecosystems. We implore our decision makers to honor the intent of the Bellingham Comprehensive Plan Land Use Policy 144 which states, "Bellingham recognizes the requirement for, and substantial benefit of, incorporating the use of "best available science" in the overall management of critical areas and natural resource protection." Best available science would surely preserve this environmental treasure.

<sup>5</sup> EPA, <http://www.epa.gov/OWOW/wetlands/vital/people.html>