Why are Wetlands Important?

Photo credit: Canadian Wildlife Service

Wetlands Improve Water Quality

Surface water runoff from cities, towns, roads, agriculture, mining and forestry operations may contain sediments, excess nutrients, viruses and pathogens and/or a variety of chemicals. If this runoff flows through a wetland, the wetland acts like a filter to remove sediments, absorb nutrients and biologically change many chemicals into less harmful forms.

"Treatment wetlands" can be specifically designed and constructed to improve surface water quality, such as artificial wetlands to treat storm water runoff. Natural wetlands can perform the same functions but care is needed not to "overload" these systems. The capacity of wetlands to neutralize harmful substances is limited; too much runoff can degrade or destroy the wetland. For example, too many nutrients (such as phosphorus) entering a wetland can cause algal blooms (eutrophication) which reduces the oxygen content in the water, killing fish and other wildlife, and rendering recreation unpleasant or impossible.

Wetlands Reduce Flood Damage

Wetlands can reduce flooding by holding back peak water flows when water levels are high and, in some cases, storing water within the wetland. This results in more gradual discharges of water over a longer period of time, which can protect downstream property owners from flood damage. A 1972 study by the U.S. Corps of Engineers in Massachusetts determined that the loss of 3,400 hectares of wetland near Boston would result in an increase in flood damage costs of $17 million (US) per year. Re-calculating these costs in today's dollars would greatly increase the monetary value of this wetland function.

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Wetlands Reduce Erosion

Wetland vegetation along the shorelines of rivers, streams and lakes reduces erosion. Plants trap soils in their roots, helping to stablilize shorelines by dampening wave action and slowing water currents. When such vegetation is removed, efforts to control shoreline erosion are usually expensive, not always successful and can result in further degradation of fish and wildlife habitat.

Wetlands and Groundwater Recharge/Discharge

Wetlands are essential components of the water cycle and many are a link between surface and groundwater. The level of groundwater (the “water table”) varies depending on the type of soil and bedrock, time of year and climate conditions.

A wetland is a groundwater discharge area if water enters it by moving upwards from the soils beneath the wetland or from the upland areas surrounding it. These “discharge wetlands” are ecologically important because they help control erosion and maintain water quality. Conversely, some wetlands act as recharge areas, collecting surface water and allowing it to percolate down through the soil and rock to the groundwater. This water recharge helps to maintain water quality and groundwater supplies, especially during dry periods. This contributes to the water required for essential activities such as human consumption and agriculture.

Some wetlands may be discharge areas in the spring, when the water table is high, and recharge areas in the summer, when the water table has dropped. They also contribute moisture to the atmosphere, influencing rainfall patterns. In the absence of wetlands, the summer months would be much drier.

Wetlands Provide Habitat

Wetlands provide food, shelter, breeding and resting places for an incredible number of species of plants, mammals, bird, reptiles, amphibians, fish and invertebrates. Wetlands provide the critical habitat that many such organisms need to survive.

Game species such as ruffed grouse, wild turkey and white-tailed deer utilize wetlands for at least part of their life cycle. Migratory waterfowl depend on wetlands for survival during their long flight. Many fish in the Great Lakes Basin (e.g., northern pike and muskellunge) directly rely on wetlands for spawning, feeding or protection. In addition, wetlands provide critical habitat for about one-third of all threatened or endangered animal species in North America. In Ontario, wetlands provide habitat for at least 47 plant and animal species that have been identified as "at risk".

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pitcher plant

Why Important? page three

outdoor class-rooms

Wetlands and Climate Change

Peat consists of partially-decomposed plants. Peatlands – wetlands that actively accumulate peat – act as long-term sinks for carbon dioxide in the atmosphere. Carbon dioxide is one of the “greenhouse” gases that contribute to global warming. Carbon is retained in peatlands instead of being released into the atmosphere as carbon dioxide.

Recreation and Tourism

Wetlands are popular places for non-consumptive recreation such as photography, bird watching, canoeing, hiking, snowshoeing, relaxation and spiritual or cultural experiences. Some wetlands have interpretive facilities, boardwalks and viewing towers where people can go to observe wildlife and learn about nature. Such facilities attract people to the wetland and provide an economic return to local communities and the tourism industry.

Wetlands can also serve as “outdoor classrooms” and can be extremely valuable to scientific research studies. Wetlands are also valuable for more consumptive recreational uses, such as hunting, fishing and trapping. Such activities can also increase tourism and boost local economies.

Sustainable Wetland Products

Wetlands “produce” a number of valuable plants and animals, which can be harvested on a sustainable basis to provide an economic return. Such “products” include: trees (for lumber, pulp, fencing and firewood), wild rice, cranberries and blueberries, fish and commercial baitfish, bullfrogs and snapping turtles, waterfowl, furbearers (e.g., beaver, muskrat, mink), and natural medicines. These products can be harvested from wetlands in a sustainable, ecologically-conscious manner, avoiding degradation of the wetland. A few products from wetlands, such as peat, are not renewable and their large-scale removal can seriously degrade the wetland and negatively impact its dependant plants and wildlife.

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Canada-Ontario Agreement
Respecting the Great Lakes Basin Ecosystem