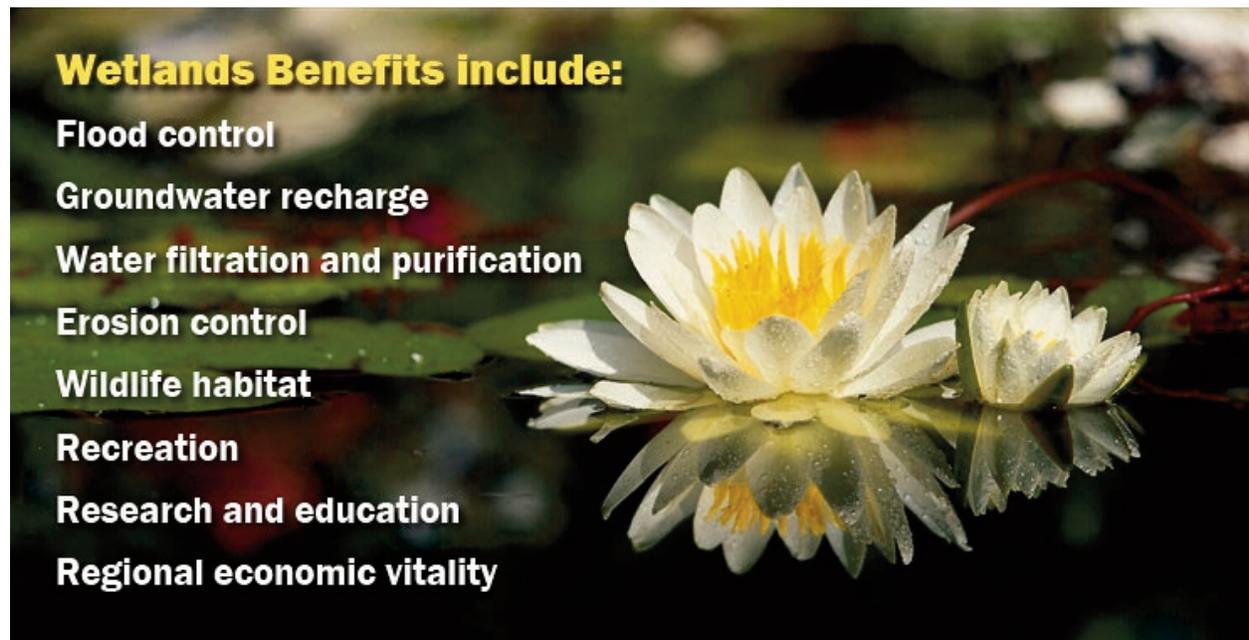


Wetlands Background – Student Information Sheet

Wetlands are some of our most valuable natural resources –they are places of beauty that contribute greatly to the overall health of our environment and our quality of life. They provide untold functions and values that become increasingly important as we continue to lose them. Healthy wetlands protect water quality. They retain or remove nutrients and pollutants, acting as “nature’s kidneys.” Wetlands are also “nature’s nurseries,” providing vital habitat to fish, wildlife, and waterfowl. Wetlands control flooding by acting as a sponge. They decrease flood peaks and safeguard downstream property owners. They temporarily store flood waters and replenish ground water supplies. In their natural condition, wetlands associated with rivers and lakes function as a barrier to erosion.



Types of Wetlands

Aquatic Bed

Areas of shallow permanent water that are dominated by plants that grow on or below the surface of the water.

Great Lakes coastal wetlands

The hydrology of these wetlands is driven by Great Lakes water level fluctuations. There are different types of these rare wetlands due to substrate (clay, sand, muck) and exposure to wind and wave action.

Barrier-beach Wetland

A barrier beach wetland is formed when nearshore currents deposit a sand or gravel barrier bar across the mouth of an embayment. These wetlands form behind the sand barrier. The resulting shallow pond or lagoon is sheltered from the lake's

wave energy; sediments accumulate in the lagoon basin and vegetation can become rooted. Although water levels in the lagoon may be augmented by tributary streams and groundwater seepage, coastal lagoon wetlands are also partially controlled by the Great Lakes, through permanent or intermittent connecting channels, wave overwash, or cross-bar seepage.

Open Embayment

A curving section of shoreline that is open to the lake. Open embayments offer protection from the force of the lake in areas where shallow depth and gently sloping bottom topography reduce wave height and energy.

Protected Embayment

Many stretches of bedrock or till derived shorelines form small protected bays, typically less than three or four kilometers in width. These bays can be completely vegetated with emergent or submergent vegetation. Examples include Duck Bay and Mackinac Bay in the Les Cheneaux Islands on Lake Huron, Matchedash Bay on Lake Huron, and Bayfield Bay on Wolfe Island in Lake Ontario.

Interdunal Swale Wetland

A wetland dominated by grass-like vegetation that occurs in the low areas between sand dunes or beach ridges along the Great Lakes shoreline. These wetlands depend on the Great Lakes for their water source. As such, their water table and period of saturation fluctuates with Great Lakes water levels. Because of the highly variable ecosystem characteristics, and the fact that they exist nowhere else on earth, interdunal swale wetland/upland complexes support many endangered or threatened species such as the Piping Plover, Pitcher's thistle, Lake Huron tansy, and Houghton's goldenrod. Due to a combination of the natural fragility of interdunal wetlands and the loss of shoreline habitat due to development along the Great Lakes shoreline, these habitats are threatened.

River Deltas

River Deltas form as stream sediments deposited at the mouth of a river accumulate and create multiple shallow channels, low islands, and abandoned meanders that allow for extensive wetland development.

Marsh

A frequently or continually inundated wetland characterized by grass-like and other emergent vegetation adapted to saturated soil conditions. Typical marsh plants include rushes, reeds, sedges, cattails, and grasses. They are wet areas which can be periodically covered by standing or slow-moving water and are usually associated with ponds, rivers, streams, inland lakes, and the Great Lakes. Although some marshes have sandy soils, marshes usually have finer textured, nutrient rich soils with a high content of organic matter.

Peatlands

Peatlands occur as thick peat deposits in old lake basins or as blankets of peat across the

landscape. Their formation is due to the combination of cool temperatures and adequate rainfall in northern temperate regions around the earth. Peat-accumulating wetlands include both bogs and fens.

Bog

Bogs form in lake basins that are isolated from sources of ground water. Because normal rainwater (the only water source for true bogs) is slightly acidic, bog water tends to be slightly acidic. The acidic nature of bogs supports acid-loving (acidophilic) vegetation, especially Sphagnum mosses, and contributes to a deficiency in available plant nutrients. As a result, many plants, animals, and microbes have special adaptations.

Fen

A peat-accumulating wetland that receives some inputs of groundwater or drainage from surrounding mineral soils which typically results in alkaline waters and usually supports grass-like vegetation.

Swamp

A wetland dominated by trees or shrubs. Swamps are usually inundated or saturated periodically at some point during the growing season. The soils in swamps are usually rich in nutrients and organic matter. This is due to silt and organic matter deposited by flood events and the accumulation of organic matter (dead trees and other vegetation) over time.

Vernal Pool

An ephemeral wetland usually in a forested area. Vernal pools are small isolated wetlands that only hold water for a short time during the spring. After snowmelt, amphibians congregate in vernal pools to create another generation of frogs, toads, and salamanders. By midsummer, the water is gone from this important, yet ephemeral, wetland.

Wet Meadow

Wet meadows contain grass-like vegetation and saturated soils, but seldom have water standing on the ground surface. Many wet meadows occur in the former lakeplain of the Great Lakes, especially in southeast Michigan and the Saginaw Bay watershed. Because these areas are relics from a former geologic epoch, they provide habitat for many plant species rare in Michigan that are typically adapted to prairies. Unfortunately, a large percentage have been severely degraded or converted to agriculture or housing.

Wet Prairie

Wet prairie is a native lowland grassland occurring on level, saturated and/or seasonally inundated stream and river floodplains, lake margins, and isolated depressions in Southern Lower Michigan. Lakeplain wet prairie is a globally imperiled ecosystem. The majority of wet prairie acreage was converted to agriculture following European settlement. In Michigan, the size and number of wet prairies have been reduced so that today less than 1% of the original community remains. Today, only 15 wet prairies totaling 613 acres remain in Michigan. Lakeplain prairies are among the most diverse plant communities in Michigan, with as many as 200 plant species found within a single prairie remnant. Threats

to remaining sites include hydrologic alteration, nutrient enrichment, siltation, fire suppression, shrub and tree encroachment, and destruction of upland buffers.

For more information on wetlands go

to: <http://www.watershedcouncil.org/wetlands.html>