



MSU Tollgate Gardens

CONSTRUCTED WETLANDS



Well before the property was donated to MSU, the 3 acre pond was first dredged in the 1950's to provide a retention area for farm runoff. The entire property slopes towards the southeast corner, so that rain and snowmelt gravitate to this low point. Drainage pipes facilitate the runoff from the PAR Gardens and pastures, and can be seen emptying into a catch basin at the western edge of the pond system. The string of small settling ponds were constructed in the 90's to collect sediment from the runoff before it could reach the large pond.

BENEFITS OF WETLANDS



The fact is that wetlands do many things, some more noticeable than others:

- Many animals depend on wetlands for homes and migratory resting spots. Fish, amphibians, reptiles, aquatic insects and certain mammals need wetlands as a place for their young to be born and grow.
- Wetlands support many types of plant species which provide food and habitat to animals, insects and microbes.
- By trapping and holding water, wetlands store nutrients and pollutants in the soil, allowing cleaner water to flow in to the body of water beyond or below the wetland. Vegetation, like cattails, can absorb some of the pollutants that remain in the soil.
- 43 per cent of threatened or endangered plant and animal species in the U.S. live in or depend on wetlands.

WETLAND INHABITANTS

Monarchs, tiger swallowtails and red admiral butterflies frequent our wetlands. For each butterfly, there is a host plant that contains the specific nutrition for that species. By laying the eggs directly on or near that host plant, the butterfly insures offspring have the particular food source they



need. Many host plants are particularly suited to a wetland environment due to abundant sunshine and moisture. The Monarch butterfly's host plant is milkweed. Turtlehead is the host plant for the Baltimore Checkerspot butterfly.



A snapping turtle lays its eggs in June. Snapping turtles feed on fish, waterfowl young and amphibians.

Water flows even during the winter, attracting ducks and geese to the open water.



One very persistent wading bird is one of many metal sculptures through the wetlands adding a touch of whimsy.

WETLAND PLANTS



Marsh marigold (*Caltha palustris*) is a perennial with yellow buttercup-like blossoms from April to June. The plant which is 1-2' high prefers moist soil and will shed its leaves and go dormant if not provided adequate moisture. Both butterflies and hummingbirds are attracted to marsh marigolds.

The White Water Lily (*Nymphaea odorata*) is a perennial arising from flexible stalks from large thick rhizomes.

The leaves, which float on the water, are round, bright green and 6-12" in diameter with a slit 1/3 of the length. Flowers, which open in the morning and close in the afternoon, have 25 or more brilliant white petals with yellow centers and are very fragrant.



Some of the plants shown here are:

Buttonbush (*Cephalanthus occidentalis*) grows in water or moist soil. It has shiny, dark green and pointed 3-6" leaves and round, white flowers the



size of a ping pong ball. When flowers fade, they leave brown, ball-like fruits filled with seeds eaten by ducks, geese and songbirds. Bees and butterflies visit for nectar and help pollinate the shrub. Songbirds have been known to build nests in them and small animals such as frogs and insects use buttonbush as cover.

Pickerelweed (*Pontederia cordata*) is a prolific grower than can cover large areas. It has large heart shaped leaves that are twice as long as wide and large spikes of purple or white flowers.



Blue Flag iris (*Iris versicolor*) is a graceful, sword-leaved plant similar to the iris that grows 2-3' tall. The flowers, which may be any shade of purple are always decorated with yellow on the falls. It thrives in medium to wet soils in full sun to partial shade.



Cattails are important wetland plants that reach 3-10' high. Two species are the most common, the broad leaved cattail (*Typha latifolia*) that is a desired native. The narrow leaf cattail (*Typha angustifolia*) is aggressive and invasive and should be avoided. Cattails add motion to the garden as pollinated flowers develop fluffy seed heads that blow in autumn breezes. Underwater, they provide a safe haven for tiny



fish and attract smaller aquatic creatures that birds and other wildlife feed on. Their leaves and seeds provide

nesting materials and create a shelter from winter cold and wind for mammals and birds. In fact, cattails are the only place where red-wing blackbird nests.

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