

Marshes



Vermont Fish and Wildlife Habitat Fact Sheet

Leveling out, a river of Vermont glides into a pond or lake, and we notice changes. The river has become sluggish. The water is shallow and shows the rich, muddy bottom. The plants reach out into the channel and begin to dominate the scene. One has entered the special world of the marsh.

Marshes are the first general type of wetland we have encountered in this study; the two other types in Vermont are bogs and swamps. All wetlands are alike in that they are water-saturated-although they are not necessarily underwater-most of the time, long enough, at least, to allow formation of wetland (hydric) soils and growth of wetland plants. Their differences are most obvious in the vegetation. Marshes have herbaceous, grassy-type plants; swamps have trees and/or shrubs; and bogs develop a floating mat of sedges, heaths, and sphagnum moss. Additionally, marshes and swamps have some water flowing through them, whereas bogs are near-stagnant, with water slowly passing through only under certain conditions and at certain times of the year.

Plants

In the thick, fertile underwater soil the marsh plants take root. Further enriching the mud, the plants that die add nutrients to what is brought downstream. The water circulates slowly, replenishing the oxygen and distributing dissolved minerals. The foundation of the marsh is laid.

The plants grow aligned in fairly distinct zones, determined by water depth, exposure, and other factors. Farthest out, in the deepest water, is the zone of submersed plants. There such species as water milfoil, elodea (the "algae" of aquariums), and pondweeds spend all their lives at or near the bottom, never even breaking the surface. The generally have finely divided leaves and lack the firm outer layer of tissue (cuticle) found on land plants. Since the water bouys them up, the plants also do not need reinforcing tissue. Instead, they have air cells throughout their stems and leaves that provide flotation and act as oxygen reservoirs. These specializations allow the plants to absorb nutrients and oxygen directly from the water, which is necessary because their root systems are little developed, if at all, and the soils in which they grow are oxygen-poor, owing to the concentrated decomposition of dead plants. This ability is one important reason the submersed plants flourish in waters that have become polluted by sewage and the runoff of artificial crop fertilizers. They thrive, to the point of excess, on these abnormally high amounts of what to them are nutrients, and can in fact choke out swallow bays and ponds, as has happened in many places in Vermont and elsewhere.

Mammals

For hunters, bird-watchers, and other observers of nature, the birds of the marsh are the most relished discoveries, receiving the greatest attention. But one can scarcely be

unaware of the other lives that are part of this rich reservoir.

One of the most evident of these other beings is the muskrat, known mostly from its cattail lodges. This rodent actually builds two types of lodges, a smaller one for feeding only, and a larger, thicker, well-insulated one for year-round living and the raising of young. In winter when the surface is frozen over the 'rats swim beneath the ice to cut and gather plants for food, and return to the lodges via one of several subsurface entrances. Muskrats that live by rivers or ponds usually do not build lodges but rather dig their homes into soil banks, much as beavers do.

Reptiles and Amphibians

Species of reptiles and amphibians in marshes may be many or few, depending on the size, location, and nature of the marsh, and whether or not it is isolated or with access to more open water of rivers, ponds, or lakes.

Where plant species and vegetative structure are diverse, one might see (or more likely hear) one, several, or all of the following, at various times of the day or night during the breeding season: spring peepers, gray treefrogs, American toads, green frogs, bullfrogs, northern leopard frogs, and pickerel frogs. Most, however, disperse to other habitats later in spring and summer-for example, peepers, treefrogs, and toads to the woods, leopard and pickerel frogs to wet meadows. Of

salamanders, the aquatic adult eastern (red-spotted) newts often swim in the marsh waters in search of insects and other invertebrates to eat; they may also bury themselves in mucky bottom to hide, or hibernate through winter.

Birds

The black duck, mallard, and blue-winged teal are the only common ducks that nest in great numbers within the marsh vegetation in Vermont. These are in the group variously known as "puddle," "dabbling," "pond," or "marsh" ducks. They ride high in the water, tip (not dive) into the water for food, and can fly directly into the air from either a standing or a floating position-this ability is a definite advantage in the tight, narrow spaces of a marsh. The mallard has been a highly successful species that originally came from the prairie states but moved steadily east, its immigration assisted by people who raised it as a domestic bird and then released it into the wild. Mallards and black ducks are closely related and have similar habitat and food requirements; occasionally, mallard-black duck hybrids occur. Since the mallards' arrival in Vermont, many authorities believe that they have been competing with, and supplanting, the blacks. But though mallards now outnumber blacks west of the Green Mountains, east of the range, and statewide over winter, the black ducks still are the more abundant.

Another common dabbler is the wood duck, the variegated male of which is without question one of the most beautiful birds of North America. Though frequent in marshes, it has a wider distribution in swamps and wooded pond areas, where it nests in the cavities of trees and feeds upon nuts, tree seeds, and the smaller grains and vegetation at

waterside. We shall take another look at this species later.

Excerpted from Charles Johnson's book
Nature of Vermont