Pond and Marsh Communities

What are ponds and marshes and where are they found?



Ponds and marshes are types of wetlands. Wetlands include fresh and saltwater ponds and marshes, bogs, riparian areas, sloughs and swamps. Ponds and marshes are characterized by water which is shallow enough for sunlight to reach the bottom. Ponds are seldom more than 15 feet in depth,



which allows plants to take root in the deepest areas of the pond. After a period of time, ponds go through succession and become filled in with plants and soil.

There are permanent ponds and marshes, with a spring or water source that maintains a constant water depth, and there are temporary ponds known as vernal pools.



What animals inhabit ponds and marshes?

Ponds and marshes provide habitat for numerous aquatic organisms such as fish, crayfish, damselfly and dragonfly larvae, and a host of aquatic insects. Ponds and marshes also provide food and shelter for



wading birds such as green-backed herons and great egrets;

swimming birds such as ducks and geese; perching birds such as red-winged blackbirds; and birds of prey such as the northern harrier.

In addition to the variety of birds and aquatic organisms, ponds and marshes are home to turtles and frogs, salamanders, beavers and muskrats, and are visited by many animals such as deer, raccoons, snakes, mice, rabbits, bobcats and mountain lions.



What plants are found in ponds and marshes?

Phytoplankton such as algae are some of the smallest, most abundant and important plants in aquatic environments. Found primarily in the limnetic zone (open water), and in the littoral zone, algae produces the base of food and oxygen that supports all of the levels of life in the pond food pyramid.

The littoral habitat is the richest habitat as it supports three distinct zones of flowering plants: the emergent zone; the floating plants zone; and the submersed plant zone. Closest to the shore are "emergent plants" such as cattails, horsetails, sedges and rushes. Emergent plants are rooted to the bottom, but have leaves and stems that grow above the surface of the water. In

some shallow ponds and marshes, plants may Environmental Study Area Pond extend across the entire body of water. The floating

> plant zone is characterized by floating flat-leaved plants such as water lilies, duckweed and water ferns. The submersed plant zone is the area of vegetation that encircles the center of the pond and includes plants

such as pondweed, waterweed, and hornworts.

In vernal pools (temporary ponds), the flowers follow a distinct pattern of blooming that mirrors the recession of the water from the shoreline. Vernal pools provide critical habitat for many species of amphibians, invertebrates and plants.

Why are ponds and marshes important habitats?

There are different layers and zones of plant life in ponds and marshes. Depending on the size and depth of the body of water, there may be 3-4 distinct habitat zones: surface film, open water, bottom and shore. Each zone supports different plants and animals.

The surface film supports air-breathing floating animals such as water striders, whirligig beetles, and some water bugs. The open water or limnetic zone is home to fish, zooplankton and aquatic insects, and is visited by swimming birds, turtles and some mammals such as beaver and muskrats.

The bottom or "benthic zone" can be sandy and daylit, or muddy and dark. The topography, depth, proximity to the shore, and the amount of light penetration to the benthic zone

influence the kind of organisms that live there. In daylit sandy bottoms, snails, sponges, earthworms and insects may be found. In muddy bottoms, crayfish, dragonfly nymphs and other aquatic insects may burrow into the mud.

The shore has the most abundant plant and animal life providing food and shelter for numerous birds, mammals and invertebrates. The shore provides shelter and acts as a nursery for fish and several rare and threatened amphibians such as the California red-legged frog and the California tiger salamander.









Kesterson National Wildlife Refuge