Ponds & Lakes

Ponds and Lakes are often called *Lentic Ecosystems*. This means that they have still or standing waters, not moving water like rivers or streams. *All ponds and lakes are open bodies of fresh water surrounded by land.*

A POND is described as a body of water shallow enough to allow rooted plants to grow across it. Because a pond is shallow its water temperature is fairly uniform from top to bottom. But its temperature does change – depending on time of day and season. Pond water warms quickly when the sun shines on it and cools as the air temperature drops.

PONDS usually have muddy bottom and quiet surface water. Because pond water does not bubble and splash over rocks and other objects, oxygen levels are fairly low. Aquatic creatures living in a pond are well suited to low oxygen.
PLANTS growing in a POND are separated into 3 Categories:

**Emergent Plants** are rooted in the bottom of the pond but have leaves & stems that float on the surface or grow above the surface. Typical emergent plants are cattails, and pickerelweed. Birds, mammals, reptiles & amphibians find food & shelter among these plants.

**Floating Plants** are the broad, flat-leaved plants like water lilies and duckweed. Their flat leaves sometimes cover the surface of a pond. Aquatic insects like to lay their eggs on the underside of these floating leaves. Many kinds of algae are found under those leaves floating free or attached to the broad leaves. Small fish may breed and nest beneath these leaves.

**Submersed Plants** grow completely underwater until it is time to have their flowers pollinated. The flowers are pollinated above the surface but the seeds fall back into the water to germinate and grow. Pondweed and water milfoil are submersed plants.
PONDs & LAKES have several Habitat Zones

The **Littoral Habitat Zone** of ponds & lakes extends from the water’s edge out as far as the rooted plants grow. In most ponds – and some lakes – the littoral area may reach from shore to shore. The littoral habitat has the tallest plants and the greatest diversity of life living among it. The water in the littoral zone is the warmest because it is the shallowest.

The **Limnetic Habitat Zone** of ponds & lakes is the open, well-lit surface waters located away from the shoreline. In some ponds and most lakes the water in the limnetic zone can get quite deep. Water temperatures at the surface will be warmest. In deep lakes temperatures near the bottom are much cooler because the sun’s rays don’t reach that far.

The **Benthic Habitat Zone** is the lowest level of the water. *Benthic* organisms live at the *bottom* of a pond or lake.
A LAKE is described as a body of water that is bigger than a pond and is too deep to support rooted plants except near the shore. Some lakes are big enough for waves to be produced.

Because a lake is deeper than a pond, its water temperatures vary from the surface (limnetic zone) to the bottom (benthic zone) a great deal in the summer. The surface stays relatively warm. The middle layer drops dramatically, as much as twenty degrees. And the bottom layer is the coldest, getting as cold as about forty degrees F – even in the summer. Because of the warmer waters and more plentiful food supply, almost all aquatic creatures spend the summer months in the upper layer.

During spring and fall the lake temperature is more uniform. Fish and other animals are found throughout the layers of the lake.

Unlike ponds, most lakes are large enough that they don't freeze solid. During the winter months some creatures hibernate in the bottom mud. Some fish continue to feed, but less actively – even if a layer of ice develops on the top of lakes.