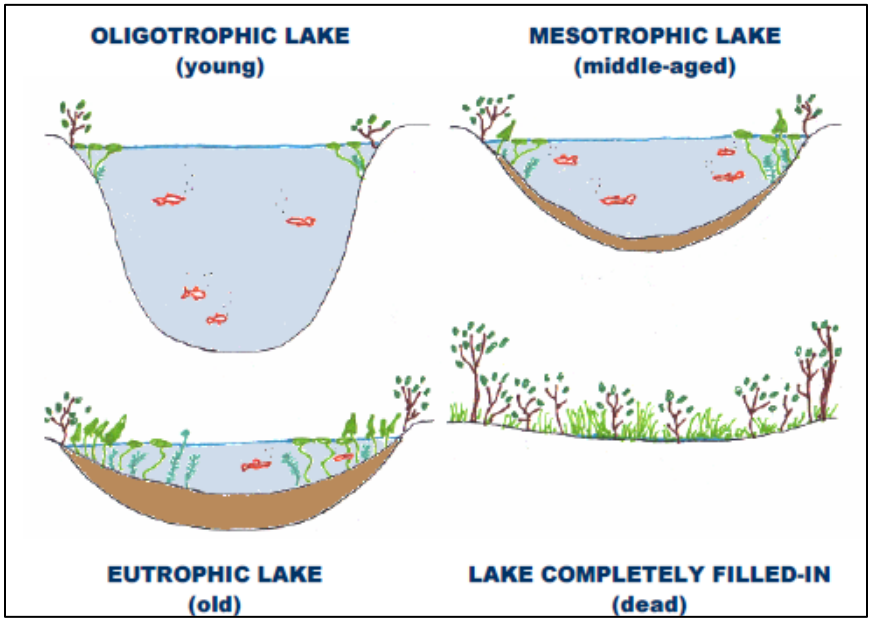
NH LAKES

The Life of a Lake



As lakes fill with sediment, they age and move through three different trophic states before "dying."

Fifteen thousand years ago, New Hampshire's natural lakes and ponds were created by the retreat of glaciers, and they have been going through a natural process of filling-in since then. In the field of science known as ecology—the study of relationships between living things and their environment—'succession' is a term used to describe the gradual change in an environment and its biological inhabitants over time.

Although most of New Hampshire's natural lakes are approximately the same age, they are filling in with sediment at different rates. Lakes are said to be 'young' if they are filling in very slowly and their characteristics have not changed much since the lake was formed. A lake is considered 'old' if it is filling in much quicker, so an 'old' lake will be very different from when it first formed. The natural process of succession in which a lake fills in with sediment and gets shallower continues as a lake changes to a pond, pond to marsh, marsh to meadow, and meadow to dry land.

Young lakes are classified as 'oligotrophic,' literally meaning 'not much nutrition.' In New Hampshire, these lakes typically contain low concentrations of nutrients (such as phosphorus), are steep-sided, have clear water, have sand or rock along most of the shoreline, contain few aquatic plants, support little algal growth, and support cold water fisheries.

Older-aged lakes are classified as 'eutrophic,' meaning 'adequate nutrition,' and contain high concentrations of nutrients, are shallow, have sediment accumulated on most of the lake bottom, contain extensive plant beds, support much algal growth, and support warm water fisheries.

'Mesotrophic' lakes are intermediate between oligotrophic and eutrophic lakes, which mean they have 'middle nutrition.'

Over a very, very long time, the lake will accumulate sediment and move from being a young oligotrophic lake, to middle-aged and mesotrophic, to old and eutrophic, and finally the lake will 'die' once it has completely filled in. Of the thousand or so lakes and ponds in New Hampshire, almost half are mesotrophic, right in the middle of their aging process, and around a quarter of the total number of lakes are in the oligotrophic and eutrophic stages. This distribution makes a pretty good bell curve graph, but another way to measure the trophic states of New Hampshire's lakes is by surface area instead of number of lakes. Most of the total lake surface area in the state is classified as oligotrophic.

You can help assess the trophic state (as well as other things) of your local lake by participating in the New Hampshire Department of Environmental Services Volunteer Lake Monitoring Program or the University of New Hampshire Lay Lakes Monitoring Program. For information, contact NH LAKES.

NH LAKES is the only statewide, member-supported nonprofit organization working to keep New Hampshire's lakes clean and healthy, now and in the future. The organization works with partners, promotes clean water policies and responsible use, and inspires the public to care for our lakes. For information, visit www.nhlakes.org, email info@nhlakes.org, or call 603.226.0299.

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