ENVIRONMENTAL
Fact Sheet

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

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Lake or Pond: What is the Difference?

From a regulatory viewpoint, there is no distinction between a lake and a pond. Both are surface waters of the state and subject to the same water quality standards. From a naming convention, there is no precise difference between a lake and pond, although waterbodies named "lakes" are generally larger and/or deeper than waterbodies named "ponds." From an ecological or limnological perspective, there **is** a difference between the two. The difference, however, is somewhat arbitrary and not consistent or precise.

Regulatory

The water quality of the surface waters of the state, including all lakes and ponds, is regulated through statutes (RSA 485-A) and rules (Env-Ws 1700). These laws and regulations make no distinction between lakes and ponds. Both have to meet all the same water quality standards.

Naming

The term "lake" or "pond" as part of a waterbody name is arbitrary and not based on any specific naming convention. In general, lakes tend to be larger and/or deeper than ponds, but numerous examples exist of "ponds" that are larger and deeper than "lakes." For example, Echo "Lake" in Conway is 14 acres in surface area with a maximum depth of 11 feet, while Island "Pond" in Derry is nearly 500 acres and 80 feet deep. Names for lakes and ponds generally originated from the early settlers living near them, and the use of the terms "lake" and "pond" was completely arbitrary. Many have changed names through the years, often changing from a pond to a lake with no change in size or depth. Often these changes in name were to make the area sound more attractive to perspective home buyers. Examples of ponds that are now called lakes include Mud Pond to Mirror Lake in Canaan, Mosquito Pond to Crystal Lake in Manchester and Dishwater Pond to Mirror Lake in Tuftonboro.

Limnology

In limnology (the study of inland waters), surface waters are divided into lotic (waters that flow in a continuous and definite direction) and lentic (waters that do not flow in a continuous and definite direction) environments. Waters within the lentic category gradually fill in over geologic time and the evolution is from lake to pond to wetland. This evolution is slow and gradual, and there is no precise definition of the transition from one to the next.

Early limnologists in the late 18th and early 19th centuries attempted to define the transition from a lake to a pond in various ways. Area, depth or both were an essential part of most definitions, but what area or what depth differed. Some used thermal stratification: a lake is a body of water that is deep enough to thermally stratify into two or three layers during the summer in temperate regions such as New Hampshire. Others used plant growth: a pond is shallow enough that sunlight can penetrate to the bottom and support rooted plant growth across its entire width. Some included all plant growth, including submerged plants; while others said a pond was shallow enough to support emergent or floating-leafed rooted plants throughout. Although we won't attempt to define the distinction between a pond and wetland here (it is an even less precise distinction), a pond with emergent plants throughout would frequently be considered a wetland or marsh by many observers.

Limnologists today recognize that nature can't be divided into precise, neat categories and accept the fact that there will never be a precise definition. However, they also recognize that "deep" lakes and ponds function differently than "shallow" lakes and ponds, and modern limnology texts often discuss the two separately. The generally accepted definition of a "shallow lake or pond" is that class of shallow standing water in which light penetrates to the bottom sediments to potentially support rooted plant growth throughout the waterbody. Lack of thermal stratification and the presence of muddy sediments are also common characteristics of this class of water. In contrast, a "deep lake or pond" has both a shallow shoreline area that may potentially support rooted plant growth and a deeper portion where sunlight does not penetrate to the bottom. These waterbodies frequently stratify into distinct thermal layers during the summer.

Lynxfield Pond in Chichester, NH