NEW HAMPSHIRE LAKES
Members dedicated to protecting lakes and their watersheds

Lakes In Winter

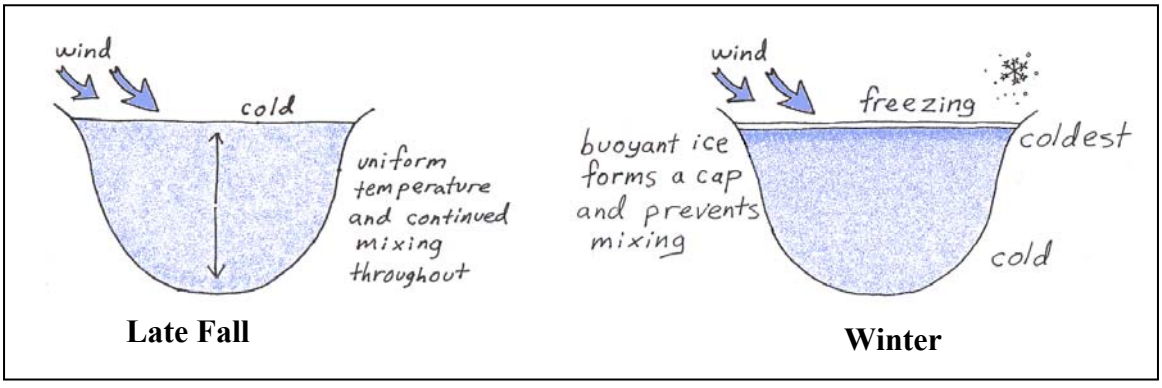
Your favorite New Hampshire lake or pond will soon be sealed off from the outside world by a layer of ice. **Have you ever wondered why the ice floats on top of the water?**

During late fall, the surface waters of the lake cool, and at approximately 39° Fahrenheit, the ice formation process begins. At this temperature, surface water molecules begin to spread apart, resulting in the surface water layer of the lake becoming less dense than the water lying underneath. The more the surface water cools, the more the molecules spread apart and the less dense the surface layer becomes. Around 32° Fahrenheit, the less dense surface water layer freezes into ice which then floats on the denser water below.

In New Hampshire we are fortunate that our lakes and ponds become covered with ice during the winter as this allows for another season of recreation. Many of us enjoy ice skating, cross country skiing, ice fishing, and some of us may even enjoy ice sailing!

But what happens beneath the ice during the winter? Typically, the water just under the ice layer is approximately 32° Fahrenheit and the water becomes slightly warmer closer to the bottom of the lake. Since the ice seals the lake off from the atmosphere, no additional oxygen is mixed into the lake during the winter. When snow covers the ice, sunlight is not able to penetrate into the water so algae and plants are unable to make additional oxygen through photosynthesis. As the winter progresses, the amount of oxygen, which is vital to the survival of the organisms living in the lake, is reduced. If the snow and ice cover remain for a lengthy period, it is possible that all the oxygen in the lake will be used up before the ice melts causing organisms—particularly fish—to perish.

Luckily, when the ice cover melts in March or April, the lake will mix with the atmosphere, bringing more oxygen and essential nutrients for the survival of aquatic life into the lake once again!



During winter, lakes and ponds in New Hampshire typically become cold enough so that the surface waters freeze.