

### Forces that shaped Lake Winnipesaukee and the surrounding region

you believe New Hampshire was once home to active volcanoes? The Lakes Region, particularly the area surrounding Lake Winnipesaukee, is a landscape defined by its geological history. This history, spanning hundreds of millions of years, has been shaped by ancient seas, volcanic eruptions, and the powerful forces of glaciation. These processes have left behind a region rich in By BREE ROSSITER unique features that tell the story of our region.

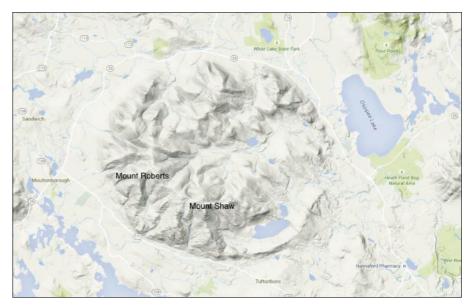
Lake Winnipesaukee, the largest lake in New Hampshire, is the most dominant feature of our region. The lake's formation can be traced back to the last ice age, a period that began around 2.6 million years ago



and lasted until approximately 12,000 years ago. During this time, much of North America, including what is now New Hampshire, was covered by the Laurentide Ice Sheet. This massive sheet of ice, at its peak, was nearly a mile thick and extended across most of Canada and the northern United States. As the glacier moved, it scoured the landscape, carving out valleys, grinding down mountains, and depositing large amounts of sediment in its wake.

As the last glacial period came to an end, the Laurentide Ice Sheet began to retreat. During this lengthy process, the glacier experienced

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The formation of the Ossipee Mountains is the result of ancient volcanic activity, dating back approximately 90 million years. The circular shape of the range is known as a ring dike, a rare geological formation that occurs when magma from a volcano intrudes into the surrounding rock in a circular pattern. (Google Maps image)



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#### Lakes Region Boating

### **Belknap County Conservation** District warns of invasive plants

GILFORD — The magenta-pink and other wildlife. flower spikes of the invasive purple loosestrife plant are currently along many roadsides. The Wetlands Walk area at Gunstock has lots of native wildflowers but this is not one of them.

Purple loosestrife is native to Europe where there are insects that keep the plant from taking over soggy areas. Despite its attractive flower that led to its use in gardens, it makes seed the size of pepper grains that are not useful to birds

It overtakes areas where plants like blue vervain live that make larger seeds that are important wildlife food. Is it important to dig out the roots since it easily re-sprouts. Then it is best to put it in a black trash bag and leave it in the sun for a few weeks to get "cooked" before disposing of it.

Glossy buckthorn is another pest plant which likes wetlands and gaps

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Wetlands Walk volunteer Paul **McAdams** of Gilford removed the invasive plants loosestrife on the left and glossy buckthorn on the right. (Courtesy photo)

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alternating phases of melting and deposition — scattering sand, clay, gravel and giant boulders. These materials, known as glacial till, were left unevenly distributed across the landscape. In some areas, the glacier gouged out deep depressions, while in others, it deposited large mounds of sediment. As the ice continued to melt, these depressions filled with water, giving rise to the many lakes and ponds that now dot the region, with Lake Winnipesaukee being the most significant.

The formation of Lake Winnipesaukee is closely tied to the region's bedrock geology. The lake lies within a lowland area that was formed through the erosion of weaker rocks by streams and the forces of glaciation. The harder, more resistant rocks were left standing as ridges and hills, some of which now form the peninsulas and islands of the lake.

Beyond Lake Winnipesaukee, the surrounding landscape is equally fascinating. One of the most striking geological features in the region is the Ossipee Mountain Range, located to the northeast of the lake. This range is distinguished by its nearly perfect circular shape, which can be easily seen on topographical maps.

The formation of the Ossipee Mountains is the result of ancient volcanic activity, dating back approximately 90 million years. The circular shape of the range is known as a ring dike, a rare geological formation that occurs when magma from a volcano intrudes into the surrounding rock in a circular pattern. The original volcano that formed the Ossipee ring dike is believed to have been about 10,000 feet tall, a towering presence that dominated the landscape.

The Ossipee Mountains are not the only example of a ring dike in the region. To the south of Lake Winnipesaukee lies the Belknap Mountain Range, another remnant of ancient volcanic activity. The Belknap Mountains, like the Ossipee Mountains, were formed by a series of volcanic eruptions that took place over millions of years. The outer ring dike of the Belknap Mountains extends for about six miles and includes Rattlesnake Island, which, although it appears as a solitary island in the middle of the lake, is actually part of the larger volcanic structure.

The geology of the Lakes Region is a testament to the powerful natural forces that have shaped this landscape over hundreds of millions of years. From the ancient seas that once covered the area to the volcanic eruptions that formed the Ossipee and Belknap Mountains, to the glacial ice that carved out Lake Winnipesaukee, each feature of the region tells a story. The peninsulas and islands that now dot Lake Winnipesaukee are not just picturesque landscapes; they are the remnants of a complex geological history.

Today, as we explore the region, whether by boat on Lake Winnipesaukee or by hiking the trails of the Ossipee or Belknap Mountains, we are walking through a landscape that has been millions of years in the making. The next time you find yourself gazing at the mountains or the waters of Lake Winnipesaukee, take a moment to consider the ancient processes that brought them to life.

To learn more, join us for a Geology of NH Lakes webinar with Geoscience Specialist forNH Geological Survey Rebecca McCain on Wednesday, Sept. 10, 5-6:30 p.m. via Zoom. Visit winnipesaukee.org/news-events register.

Bree Rossiter is the conservation program manager for the Lake Winnipesaukee Alliance. She manages the water quality monitoring program, cyanobacteria monitoring ini-

tiatives, the Winni Blue/LakeSmart program, and assists with watershed management planning efforts. Bree can be reached at brossiter@winnipesaukee.org. The Lake Winnipesaukee Alliance is a nonprofit dedicated to protecting the water quality and natural resources of the lake and its watershed. To learn more, visit winnipesaukee.org.



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# LAKES REGION BOATING

Lakes Region

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# LAKES REGION BOATING

**INVASIVE** from page 15

in pine forests. Birds like the ripe black berries and spread their seed as it upsets their digestive system. Bushes can grow to 20-feet tall and are controlled by pulling out by the roots or digging when young. Larger plants can be controlled with girdling, — cutting the bark all the way around — and is most effective when done twice about 4-inches apart. The leaves have a fishbone pattern and the bark has many white spots in random design and scattered.

For more information, visit agriculture.nh.gov/divisions/plant-industry/invasive-plants.htm







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