Lake Superior

Water covers 70% of the earth's surface area, but only 3% of it is freshwater, and only 0.32% of the world's water is available in freshwater lakes and rivers. Lake Superior has the largest surface area of any freshwater lake in the world, and contains 10% of the world's total freshwater. (Bell 1989) Lake Superior contains a water volume of 2,725 cubic miles or 3,000,000,000,000 (3 quadrillion) gallons (Bell 1989) - equivalent to more than 333 billion large tanker trucks full of water (estimated maximum tank capacity of 9000 gallons [http://en.wikipedia.org/]). Lake Superior holds more water than all the other Great Lakes combined, enough water to cover all of North and South America to a depth of 1 foot. (Linder 2006)

At 350 miles long and 160 miles wide, Lake Superior's shoreline spans a length of 1,826 miles and reaches a maximum lake depth of 1,333 feet, in close proximity to Munising, Michigan. (Bell 1989) Lake Superior's water surface area of 31,700 square miles is approximately equal to the surface area of the state of Maine. (Bell 1989) It is large enough to influence local weather patterns along the shore, creating cooler summer temperatures and warmer winter temperatures than those occurring just a few miles inland. (Tester 1985)

Water temperatures average approximately 40 degrees. (Bell 1989) Lake Superior also maintains its title as cleanest of the Great Lakes, with an unmatched water clarity that provides an average visibility to a depth of 27 or more feet. (Bell 1989) Because of its large volume, however, the lake has a slow replacement rate, making it highly susceptible to pollution. (Bell 1989; Botts et al. 1995) The drainage basin is 89% forested (Lydecker 1976), which helps contribute to water clarity through filtration and infiltration of storm water runoff during its overland descent to the lake. The average water surface elevation of Lake Superior is 600 feet above sea level. (Bell 1989; Botts et al. 1995)

Natural History of the Northwoods

Minnesota's "North Shore" of Lake Superior is like no other place in the Midwest. In a region characterized by flat prairies and rolling farm fields, the North Shore offers deep, dark forests, rugged mountains, and a windswept coastline with crashing waves. Fresh streams tumble through rocky gorges into the cold waters of Lake Superior. The North Shore has a refreshing and invigorating character that is unique in the Upper Midwest. The North Shore of Lake Superior is a popular recreation destination for people from throughout the United States and Canada. Dramatic views of rocky beaches, jagged cliffs, thundering waterfalls, and sheltering pines are revealed around every bend in the road.

Northern coniferous forest composes most of the Arrowhead Region of northeastern Minnesota. (Tester 1985) It also contains some of Minnesota's last significant tracts of old-growth forest. (MN DNR: Old-Growth Forests) However, the forest composition has been altered with the advent of logging, and scientists now question the impact that the change of the forest size, shape, and interior area will have on the area flora and fauna. (MN DNR: Old-Growth Forests)

Some notable animals that call the land home include the gray wolf, bald eagle, white-tailed deer, black bear, moose, bobcat, pine marten, beaver, otter, mink, snowshoe hare, spruce grouse, hawks, owls, and many species of shoreline birds. (MN DNR: Lake Superior Coastal Program FEIS) A few salmon species, lake trout, brook trout, rainbow trout, brown trout, walleye, siscowet, burbot, lake herring, sculpins and the common loon all swim the tributaries and waters of Lake Superior. Invasive species, including sea lamprey, ruffe, zebra mussel, and spiny water flea, have appeared in Lake Superior and have probably been introduced via bilge water dumped from large sea-fairing ships. (MN DNR: Lake Superior Coastal Program FEIS)

Parks and Recreation

Eight state parks, three state forests, one national forest, a national monument, and several wayside parks provide numerous opportunities to experience the outdoors. The Superior Hiking Trail winds 200 miles along the rocky mountaintops overlooking the North Shore. The Sawbill, Caribou, Arrowhead, and Gunflint Trails lead inland to the nearby Boundary Waters Canoe Area Wilderness. Numerous museums and state park interpretive centers help tell the story of the North Shore and offer a network of well-maintained trails. Fishing boats, sailboats, kayaks, and tour boats are available for rent and hire along the shore. During the winter, hundreds of miles of groomed trails attract cross-country skiers, snowshoers, and snowmobilers to the region. Lutsen Mountain is the Midwest's largest downhill ski resort.
**HISTORICAL CONTEXT**

The North Shore’s rich cultural history is uniquely tied to the North Woods landscape and its natural history. The following is a brief cultural history, condensed from Minnesota Historical Society’s “History of Minnesota’s Lake Superior,” found on the web at [www.mnhs.org](http://www.mnhs.org).

**Exploration and Fur Trade (1650 – 1840)**

“The prehistory contact of the Lake Superior is poorly understood in Minnesota due to a scarcity of known archaeological sites. At the time of contact between Native Americans and Europeans, the Cree may have controlled most of the western Superior shore with Dakota present in the south and Ojibwe in the north. By 1700, the Ojibwe controlled much of the region. French explorers entered the Lake Superior country in the mid-1600s.

“By 1720, French speculators and exploring parties had ventured all over the Midwest. By this time they had achieved a solid familiarity with the geography of the Great Lakes. From 1768 until 1804, the North West Company brought hundreds of traders and voyageurs to their headquarters at Grand Portage to exchange west-bound trade goods for east bound pelts.

“The fur industry began to decline in the mid-1830s, due to depletion of fur-bearing animals and declining markets for furs in Europe... The old posts were abandoned one by one.

**Settlement and Fishing on Lake Superior (1854 – 1930)**

“The collapse of the fur trade around 1840 was followed by a period of quiet in northern Minnesota, ending almost two centuries of trade between the Cree, Dakota, Assiniboine, and Ojibwe on the one side, and the French, British, and Americans on the other side. Though the voyageurs’ canoes and bateaux disappeared from Lake Superior, a limited commercial fishery was left behind by the fur companies.

“The LaPointe Treaty of 1854 ceded to the United States the entire Minnesota shoreline of Lake Superior, and white speculators looked to move in. With the adoption of the Treaty in September, 1854, dozens of men staked their claims along the North Shore, principally where copper was thought to be, and at the mouths of larger streams.

“When construction began on the Lake Superior and Mississippi Railroad in 1869, Duluth began a period of spectacular growth... A large percentage of the newcomers were Scandinavian immigrants. This marked the beginning of a flood of Swedes, Norwegians, and Finns to Minnesota.

“Until the completion of the North Shore Highway (U.S. Highway 61) in 1926, the America [a freight steamer] was the only link with civilization for all the fishing folk along 200 miles of rugged and isolated shoreline. The America brought all the groceries, mail, salt, ice, barrels, and all the other necessities, and took away all the fish that could be harvested from the big Lake... Commercial fishing flourished at the Head of the Lakes during the early decades of the 20th century. The industry was dominated by Norwegian immigrants, though a number of Swedes and Finns were also involved.

“During the 1870s, a trail was slashed through the woods along the North Shore. A wagon trail was established by 1880. The Duluth & Iron Range Railway was constructed between Duluth and Two Harbors in 1889, although a real road was not completed all the way up the shore from Duluth to Grand Portage and Port Arthur until the mid-1920s. The road dramatically changed the lifestyles of North Shore residents. It brought to an end their dependence on the collection steamers and enabled them to transport their fish by truck. It also brought tourists in ever-increasing numbers. Some of the fishermen began building resorts and renting cabins to supplement their income. The infusion of permanent settlers along the Minnesota North Shore ended around 1900. Since that time new arrivals have been primarily summer residents whose permanent addresses are in the Twin Ports (Duluth-Superior) or the Twin Cities.

**North Shore Tourism and Recreation (1870-1945)**

“Scores of small coastal steamers, excursion boats, and ferries ran along the North Shore, primarily out of Duluth and Port Arthur, after the mid-1870s.

“The North Shore resort industry developed from the small passenger service running out of Duluth. Fisherman Charlie Nelson built a second-story addition on his Lutsen home in 1893 to house his frequent guests. Before long the hotel income was rivaling the profits from his commercial fishing. Ole Brunson of Chicago Bay (Hovland) found himself entertaining so many sports fishermen that it became profitable to offer boarding. He added on to his house and later built small cabins. By the turn-of-the century, there were cabins at Lutsen, Hovland, and Grand Marais.

“Completion of the North Shore highway [U.S. Highway 61] coincided with the decline of commercial fishing in the late 1920s. All along the shore, impoverished fishermen built cabins and resorts during the late 1920s and early 1930s, as more and more midwestern Americans began touring in private automobiles.”