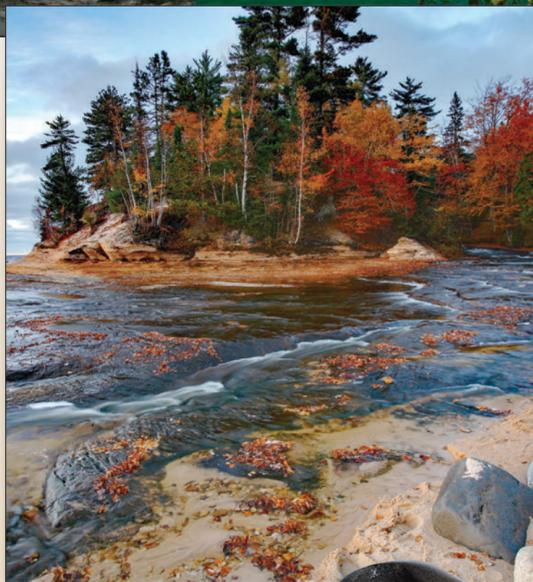




Left: Grand Portal Point
Above: Cliffs along the trail east of Miners Castle



Above: Mosquito Beach

Right, top to bottom: Water-sculpted basalt, horn coral, and red jasper



Stories in Sand

Sandstone cliffs—ochre, tan, and brown with layers of white and green—tower 50 to 200 feet above the water. Vast, blue Lake Superior glistens against a cloud-streaked sky. Deep forests of emerald, black, and gold open onto small lakes and waterfalls. The images are like a painter's work. A palette of nature's colors, textures, and shapes sets the scene at Pictured Rocks National Lakeshore.

This place of beauty was authorized as the first national lakeshore in 1966 to preserve the shoreline, beaches, cliffs, and dunes and to provide an extraordinary place for recreation and discovery. Just over six miles across at its widest point, the park hugs Lake Superior's shoreline for over 40 miles and consists of the Lakeshore Zone, federal land managed by the National Park Service, and the Inland Buffer Zone, a combination of federal, state, and private ownership. Together these nearly 73,000 acres protect some of Lake Superior's shoreline and watershed.

Icy Architects Massive glaciers, inching back and forth over a million years, scoured and molded this land.

Moving ice ground volcanic and sedimentary rock from previous eras into rubble and slowly enlarged river valleys into the wide basins that would become the Great Lakes.

The last glacier began retreating about 10,000 years ago. Over time its meltwater formed powerful rivers and scattered rubble onto outwash plains and into crevasses. Water scooped out the basins and channels that harbor wetlands in the park today. Eventually, as the weight of the glacier lessened, the land rose and exposed bedrock to lake erosion. This onslaught by the lake—centuries of crushing ice and battering waves—carved the bedrock into young cliffs. Water continues to pound and sculpt the cliffs, eroding them inland while enlarging the lake.

The force of water, solid or liquid, profoundly altered this landscape and created the world's largest freshwater lake system. It sculpted arches, cliff profiles, and the inland lakes that formed when glacial outwash buried enormous blocks of ice. Melting ice formed depressions that filled with water and became kettle lakes. The stones along

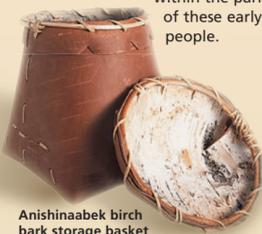
Twelvemile Beach are horn coral from an ancient sea, polished granite and quartz rounded like eggs, and disk-shaped fragments of the Jacobsville sandstone.

Colorful Cliffs The name *Pictured Rocks* comes from the streaks of mineral stain decorating the face of the cliffs. The streaks occur when groundwater oozes out of cracks. The dripping water contains iron, manganese, limonite, copper, and other minerals that leave behind a colorful stain as the water trickles down a cliff face.

The cliffs' ramparts are composed of 500-million-year-old Cambrian sandstone of the Munising Formation, which makes up much of the angled slopes and features like Miners Castle. Closest to lake level is the Jacobsville Formation, a late-Precambrian mottled red sandstone that is the oldest exposed rock in the park. Covering all is the 400-million-year-old Ordovician Au Train Formation, a harder, limy sandstone that serves as a capstone and protects the underlying sandstone from rapid erosion.

Living with Lake and Land

The bounty of the lake and land has attracted people since the glaciers retreated northward. Archaic and Woodland Indians made summer camps along the coast between what is now Munising and Grand Marais. Later, Anishinaabek Indians hunted and fished here, as their descendants still do, while en route to summer fishing areas farther east. Today, little evidence remains within the park of these early people.



Anishinaabek birch bark storage basket

European Adventurers In the 1600s and 1700s European explorers and voyageurs searched here for furs and minerals. These expeditions give us many of the area's earliest written accounts and left place names like Miners Castle and Grand Marais. In the 1800s American and European settlers arrived to make fortunes in mining and logging.

We had been told of the variety in the colour and form of these rocks, but were wholly unprepared to encounter the surprising groups of overhanging precipices, towering walls, caverns, waterfalls . . . mingled in the most wonderful disorder.

—Henry Rowe Schoolcraft, regional explorer and scholar, 1820

Booming Commerce The demand for lumber attracted businessmen who bought vast forests of white pine, beech, and maple. Through the late 1800s boomtowns along Lake Superior's southern shore supported large logging operations and blast furnaces that produced pig iron for the nation's growing railroad industry. By the early 1900s both logging and ironworking had diminished due to loss of natural resources.

The Life-Saving Era As businesses flourished, Lake Superior's commercial activity also increased. To help ships navigate the treacherous rock reef, the US Life Saving Service and the US



Powered today by sunlight and not kerosene, the 1874 Au Sable Light Station still warns mariners of the dangerous Au Sable reef.

Lighthouse Service (later the US Coast Guard) built lifeboat rescue stations and light stations along the shore. Remnants of this era still exist in the park.



Paddling along the Pictured Rocks cliffs

A Powerful Lake Measured by surface area, Lake Superior is the world's largest freshwater lake—350 miles long, 160 miles across, and over 1,300 feet at its deepest point. The lake basin holds so much liquid that, if drained, it could fill a pool the size of the lower 48 states to a depth of nearly five feet.

Lake Superior acts like an inland sea, creating powerful storms and exerting a great influence on the surrounding land. Its cold water moderates the climate, keeping summer cooler and winter somewhat warmer. Mist, fog, wind, and lake effect snow affect the park's soil, vegetation, and wildlife and the people who live nearby.



Miners Falls

The lake continually reshapes the park's beaches and shoreline. Wave energy and the forces of ice and thaw work on the porous sandstone cliffs, causing erosion that may result in rockfalls.

With each season Lake Superior shows a different mood: summer's gentle waves, autumn's furious storms, or winter's icy stillness.