13 TOMBOLO
This low area that you are walking through is part of the tombolo. A tombolo is formed when sediment (usually gravel) is deposited by waves and currents on a shallow section of the lake bottom over thousands of years, ultimately connecting an island (Sugarloaf Point) with the mainland. Tombolos are rare along the Lake Superior shoreline, because there are few offshore islands and not many shallow areas where sediment can accumulate.

14 MOUTH OF SUGARLOAF CREEK
This small stream along the western boundary of the Sugarloaf Cove property is one of many that drain the uplands surrounding Lake Superior. The amount of water in the stream varies greatly throughout the year. During spring snowmelt and heavy rainstorms, the stream is swollen with water running off the land into Lake Superior. During dry periods, the stream shrinks to a quiet trickle. The rocky bed is all part of one large lava flow. The land on the other side is privately owned, so please do not cross the stream.

15 PLANTING DEMONSTRATION
Nearly hidden on the forest floor are boom logs, left behind by the paper company and now decaying as new trees grow up around them. This forest is a major demonstration area for restoration of native conifer forests. You will notice a wide variety of fencing and planting techniques. Most of the fencing at Sugarloaf is done to protect young conifer trees from being eaten by white-tailed deer. The primary tree species planted here in 2004 and 2005 are white pine, white spruce and white cedar.

16 BEACH TERRACE AND RED PINE DEMONSTRATION
You are now standing on an old beach terrace, about 60 feet above Lake Superior. It marks the temporary water level of Lake Superior at one stage during the melting of the last glacial ice sheet. Notice the rounded beach pebbles at the bottom of the wave-cut slope.

Now look at the red pine plantation. The trees were planted after the paper company closed the rafting operation in 1971. A few feet down the trail, stop and look at the cord of wood that has been built with the trees removed from the pine plantation. A “cord” of wood is defined as being four feet high, four feet wide and eight feet long. In 2013, trees were harvested from this site to improve the health of the remaining trees.

17 VISITOR CENTER
The Sugarloaf Cove Visitor Center was constructed in 2000. This location was carefully chosen to minimize impacts to the shoreline.

The building, built by Senty Log Homes of Grand Marais, was designed to be energy efficient, with in-floor, off-peak electrical heating, and high R-value windows and doors which were donated by the Andersen Window Company. The decking, donated by Aspen Research, is made from recycled sawdust and vinyl—waste products from window manufacturing.

Thank you for visiting Sugarloaf Cove.

JOIN US!
To become a member, please visit the visitor center or our website at www.sugarloafnorthshore.org. Or mail your membership donation to the address below.

Membership levels:
$25 - White Spruce
$50 - Balsam Fir
$100 - Tamarack
$250 - Red Pine
$500 - White Cedar
$1000 - White Pine

Or become a Sustaining member by donating monthly through our web site.

Sugarloaf: The North Shore Stewardship Association was organized in 1992 to protect the site and provide a public interpretive forum. Sugarloaf’s mission is to inspire the preservation and restoration of the North Shore’s unique environment through education and exemplary stewardship, especially at Sugarloaf Cove. We are a membership-supported, non-profit organization. You can support us by donating or becoming a member today!

Find out more at Sugarloafnorthshore.org

Thank you for visiting Sugarloaf Cove.
You are standing in a plantation of red pine trees. The red pine (Pinus resinosa), also called the Norway pine, is the state tree of Minnesota. Older red pines, with their thick bark, are tolerant of fire and can grow to be over 100 feet. Notice that these trees are all about the same size and they have been planted in rows. When Sugarloaf Cove was used as a pulpwood rafting operation, from 1943 to 1971, thousands of logs were stockpiled in this area, which was known as the Upper Landing. After the paper company closed its pulpwood operation in 1971, a forester remained at the site until 1978 and established two red pine plantations. In 2013, trees were harvested from this site to improve the health of the remaining trees.

You are now in the midst of a thicket of Alder (Alnus incana and Alnus viridis). Alder is a type of shrub that grows rapidly on disturbed, moist ground. It is an important early shrub in forest succession, adding nutrients like nitrogen to poor soils.

Bedrock is what geologists call the solid rock that underlies the land that we live on. Bedrock is often completely hidden by soil and plants, but here along the North Shore of Lake Superior, the soil is thin in many areas because of Ice Age glaciation and much of the 1,100 million year old bedrock is visible. If you look closely at the ground you are standing on, you will see that what appears to be gravel is actually made up of pieces of crumbling bedrock. Water trapped in cracks in the bedrock freezes in the winter and thaws in the spring, breaking the rock apart – a process called physical weathering.

At the shoreline, you are standing on bedrock that is 1,100 million years old. This rock is called basalt, a name that indicates the texture and the chemical composition of the rock. Basalt forms as a result of volcanic eruptions, similar to the ones occurring in Hawaii and Iceland today, and it is the most common type of lava flow. When Consolidated Papers was using this cove to transport pulpwood across the lake, great booms (big floating logs chained end-to-end) were stretched across the mouth of the cove to contain the floating logs until they could be towed to Wisconsin. Can you find the iron rings that were used to attach the booms on this side of the cove?

Although little physical evidence remains, it was in this area that the paper company constructed a chute to move logs from the Upper Landing to the cove. The chute was 80 feet long and about 10 feet wide. Once in the water, the floating logs were held inside the cove by storage booms until a large enough quantity was collected to fill a “raft”, which was made up of several thousand logs that covered as much as 40 acres. Tugboats pulled the rafts 62 miles across Lake Superior to Ashland, Wisconsin, a trip that took between 72 and 120 hours. Typically, 6-8 trips were made to Ashland each summer.

Historic photos and maps indicate that Consolidated Papers, Inc. maintained at least fourteen different buildings at Sugarloaf Cove to support their pulpwood rafting operation. Many of