



PIKE BAY EXPERIMENTAL FOREST

Cass Lake, Minnesota



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The 3,914 acre (1,585 ha) Pike Bay Experimental Forest located on the Chippewa National Forest in Minnesota was officially established in 1932 although research on the site began in the late 1920s. Aspen research has been the dominant activity at Pike Bay. This research has been important in helping to develop and refine silvicultural prescriptions for aspen management. Currently the primary active research at Pike Bay is affiliated with the national Long-Term Soil Productivity (LTSP) network. LTSP research is important in predicting impacts to aspen productivity from soil compaction and organic matter removal. Results provide guidance to National Forests regarding sustainability of productivity in managed forests.



Assets:

Scientists: 3 Northern Research Stations scientists are currently conducting research at Pike Bay.

Scientific support: 2 technicians and/or professionals provide support for this work.

Cooperators: Chippewa National Forest, USFS Region 9, University of Northern British Columbia, University of Minnesota.

Needs:

Annual operating costs: \$38,979

Critical needs: Updated ecosystem classification and stand inventory maps

Long-term needs: Field lab (dry) with living quarters, shared with Cutfoot EF and the Chippewa National Forest - \$800,000

The Pike Bay Experimental Forest is administered by:

U.S. Forest Service, Northern Research Station

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More About the Pike Bay Experimental Forest

Location: Lat. 47°20' N, long. 94°40' W

The Pike Bay Experimental Forest is located just east of Cass Lake about 54 miles west of Grand Rapids, MN.

Vegetation: Much of the Pike Bay Experimental Forest is dominated by mature to over-mature aspen (60 to 80 years old). These are among the most productive aspen sites in northern Minnesota. Pike Bay once supported large white pines and northern hardwoods and examples of each remain. Pike Bay is noted for its abundance of small seasonal wetlands. These vary greatly in the depth of water and duration of flooding during the growing season. Black ash is the most common tree species in seasonal wetlands. Generally, these wetlands are 0.62 acres (0.25 ha) or less in size. At least historically, the eastern side of the forest is believed to have had species more tolerant to burning (for example more white and red pines). In the interior and western parts of the forest, fire was less common and vegetation is more sensitive to fire. Fire has generally been eliminated as a disturbance agent and the differentiation between these areas is not as obvious in present-day vegetation.

Climate: The climate at Pike Bay is continental. Maximum summer temperatures are 90 °F (32 °C) with high humidity (80 percent) and minimum winter temperatures descend to -31 °F (-35 °C). Growing season length is 100 to 120 days. Average annual precipitation is 20 to 26 inches (50 to 65 cm). Snow depths average ~3.3 feet (1 m). Although prolonged summer droughts occur, there usually is adequate rainfall in the growing season.

Research—past and present: Plantations established on the Pike Bay Experimental Forest in the 1930s have provided important areas for studying and comparing forest and soil development in aspen, red pine, and spruce growing on the same soils. Aspen research has been the most common at Pike Bay. Beginning in the 1940s, aspen research has included thinning in young stands, prescribed burning, and effects of clearcutting on soil and stand productivity. Currently, the most active work is related to the Long-Term Soil Productivity Study (LTSP), one of three aspen LTSP sites in the Lakes States (others are in the Upper and Lower Peninsulas of Michigan). There is a small amount of published work on white and red pine.

Research opportunities: Aspen research remains a major focus and there are significant opportunities for continuing the ongoing work and beginning new research on other aspects of aspen silviculture and stand development. The forest also provides opportunities for research on ecology and silviculture of northern hardwoods and mixtures of northern hardwoods and aspen/birch-white-pine.

Facilities: There are no on-site facilities at the Pike Bay Experimental Forest, but several nearby towns, such as Cass Lake several miles to the west and Bemidji, have lodging facilities for short-term stays. There is a well developed system of roads within the forest, but travel is difficult in wet weather.

More information can be found at: <http://www.nrs.fs.fed.us/ef/locations/mn/pike-bay/>