POINTS OF INTEREST ON FIELD TRIP, SEPT. 18

Headwaters Forest Research Center, Lake States Forest Experiment Station

The Pike Bay Experimental Forest and Vicinity

The Pike Bay Experimetal Forest, 5 miles southeast of Cars Lake, is an area of 3,940 acres timbered chiefly with aspen and mixed hardwoods. A belt of aspen reaches through it from north to south, merging on the west with pine and on the cast with hardwoods and balsam fir. The entire area was cut over for pine between 1903 and 1915; no pine was left except scattered seed trees and immature stands. A great part of it was logged also for aspen and hardwoods between 1925 and 1929. Consequently, the stands now present are immature second-growth and decadent hardwoods. In all their major aspects, this forest fairly represents the aspen and mixed hardwood forests of northern Minnesota. Projects at Pike Bay include:

a. Aspen Management - Thinnings
b. Aspen Management - Harvest Cuttings
c. Mixed Hardwood Management
d. Stand Improvement in Mixed Hardwoods
e. Stand Improvement in White Pine
f. General Planting Studies
g. Conversion Experiments
h. Testing Different Species and Strains
i. Aspen Hybrid Tests

Pike Bay source-of-seed plantings. --These plantings represent part of an international source-of-seed study. The seed was sowed in 1938, and the out-plantings were made in the early 1940's. Represented here are Scotch pine seed from 15 localities and Norway spruce from 20 localities in the Baltic Region of Europe. Also included in this study are several exotics-lodgepole pine, Engleman spruce, western yellow pine.

Aspen hybrid tests were carried out with stock furnished, by the Northeastern Forest Experiment STation. The testing was of first-generation hybrids and was started in 1935. The hybrids were not hardy enough for this locality and only one clone still survives.

In the spring of 1954 a planting of white pine hybrids was installed here. Those plantings, now 4 years old, begin to show their adaptability in the area.

Red pine source-of-seed plantation.--This plantation was made in 1937 from 2-1 stock on a carefully prepared planting site. Some 51 seed sources from the Lake States, northeast United States, and Canada are represented here. The plantation has been thinned twice, but care has been exercised

to preserve trees from all seed sources. Considerable demonstration use is made of this plantation to show how well carefully tended stands can grow.

An article in the Journal of Forestry, Vol. 52, No. 9, Sept. 1954, "Wood Density and Seed Source in Young Plantation Red pine" by L. W. Rees and R. M. Brown is based on this study.

A much larger study of red pine seed sources was established on the Superior National Forest in 1932.

Aspen stands .--This is a 50-year-old stand of excellent Minnesota aspen. Nearby is a 35-year-age class of same high quality aspen. A major thinning study is located in each of these age classes.

These trees have been selected as an elite clone by several geneticists. The trees are 83 feet tall at 50 years of age. It should be noted that this stand is growing on a fertile heavy loam soil.

Lake 13 red pine stand .--These are 140-year-old red pines known locally as the Lake 13 stand. The trees range from 95 to about 105 feet in height, and the stand has from 25 to 35 MBM per acre. Growth on the 11 permanent sample plots varies from 200 to 300 board-feet per acre per year. Mr. R. G. Hitt has several selections marked out in this stand.

Cutfoot Experimental Forest

This 3,000-acre experimental forest has extensive 45- and 90-year age classes of red pine. A number of silvicultural studies are carried on in both age classes. Besides the silvicultural experiments, 1,000 acres of this forest are in a management unit, and another 640 acres are in a natural area.

Growing-stock-levels studies .--This is one of a number of growing-stock-level studies in red pine in Minnesota. In this experiment levels of 60, 80, 100, 120, and 140 square feet of basal area per acre are maintained. Cubic volute growth for the past 5 years has been highest on the 120-square-foot level but only slightly lower on the other levels.

Cutting-methods studies.--In this experiment trees are cut by 3 methods: from above, from below, and by a combination of from above and below. The cubic volume growth results from the first 2 of the 3 replications show little variation between the 3 cutting methods.