

RESEARCH NOTE NC-39

NORTH CENTRAL FOREST EXPERIMENT STATION, FOREST SERVICE—U.S. DEPARTMENT OF AGRICULTURE
Folwell Avenue, St. Paul, Minnesota 55101

# FOREST STAND-SIZE TRENDS IN UPPER MICHIGAN, 1955-1966

**ABSTRACT. — Sawtimber and poletimber acreage was half again as large in 1966 as in 1955; seedling and sapling acreage had decreased about one-third; and nonstocked area had dropped from 1.2 million acres to 100,000.**

The forests of Upper Michigan have changed rapidly in stand-size composition since 1955. By 1966 the acreage of poletimber and sawtimber stands combined had increased more than 57 percent. These stands had their origin in an era of repeated, unchecked fires that followed wholesale logging, first for old-growth pine and then for northern hardwoods. Gradually improved fire protection in the 1920's sparked the resurgence of second-growth stands, which are now maturing. This background partially explains the current large shifts in stand structure. Stand sizes for 1955 and 1966 were as follows:

| *Stand-size class* | *Million acres in—* | | *Percent increase (+) or decrease (—)* |
|---|---|---|---|
| | *1955* | *1966* | |
| Sawtimber | 1.5 | 2.6 | +73 |
| Poletimber | 2.7 | 4.0 | +48 |
| Saplings and seedlings | 3.5 | 2.4 | —31 |
| Nonstocked | 1.2 | .1 | —92 |
| Total | 8.9 | 9.1 | + 1 |

Nonstocked forest area decreased 1.1 million acres during the 10 years. This acreage became stocked with larger size classes. Nevertheless, seedling and sapling stands decreased by 1.1 million acres; evidently considerably more than half of the 1955 acreage in this size class now has pole-size and larger stands. Poletimber stands increased the most in acreage, but sawtimber had the largest percentage increase.

In 1966 nearly 29 percent of the commercial forest supported sawtimber. More than 43 percent was poletimber. The Western Unit of Upper Michigan has more of these larger stand sizes than the Eastern Unit has (table 1).

These changes in stand size reflect not only higher volumes in larger trees but also an expanding acreage where commercial cutting operations can be considered, especially in types that generally mature as poletimber. They also suggest that land managers can shift the emphasis of their forestry programs from tree planting and restocking of non-stocked land (only about 100,000 acres in 1966) to care and improvement of existing stands.

Procedures used to determine stand size in the Survey of 1966 differed slightly from those used in 1955. The newer procedures gave a better sample of small trees. Had they been used in 1955 less non-stocked acreage

*Table 1.—Area of commercial forest land by county, unit, and stand-size class, Upper Michigan, 1966*

*(In thousand acres)*

| County | All stands | Sawtimber stands | Poletimber stands | Saplings & seedling stands | Nonstocked areas |
|---|---|---|---|---|---|
| Alger | 535.9 | 174.8 | 226.3 | 131.8 | 3.0 |
| Chippewa | 766.5 | 169.7 | 336.9 | 250.5 | 9.4 |
| Delta | 623.9 | 126.9 | 281.4 | 210.4 | 5.2 |
| Luce | 526.2 | 154.9 | 199.7 | 169.2 | 2.4 |
| Mackinac | 561.9 | 125.0 | 271.6 | 160.6 | 4.7 |
| Menominee | 513.3 | 128.7 | 222.1 | 157.5 | 5.0 |
| Schoolcraft | 641.4 | 159.5 | 262.4 | 211.3 | 8.2 |
| EAST. UPPER MICH. | 4,169.1 | 1,039.5 | 1,800.4 | 1,291.3 | 37.9 |
| Baraga | 535.1 | 213.1 | 219.0 | 98.3 | 4.7 |
| Dickinson | 447.7 | 124.8 | 210.1 | 111.1 | 1.7 |
| Gogebic | 644.1 | 176.0 | 291.0 | 162.2 | 14.9 |
| Houghton | 560.8 | 187.2 | 232.5 | 133.3 | 7.8 |
| Iron | 696.1 | 196.7 | 315.3 | 170.7 | 13.4 |
| Keweenaw | 212.7 | 90.9 | 84.0 | 37.4 | .4 |
| Marquette | 1,097.1 | 381.2 | 446.3 | 255.6 | 14.0 |
| Ontonagon | 727.3 | 189.6 | 358.8 | 166.2 | 12.7 |
| WEST. UPPER MICH. | 4,920.9 | 1,559.5 | 2,157.0 | 1,134.8 | 69.6 |
| ALL UPPER MICH. | 9,090.0 | 2,599.0 | 3,957.4 | 2,426.1 | 107.5 |

would have been reported. Another effect of the change was to understate the true increase in acreages of poletimber and sawtimber stands.

These statistics are from a Forest Survey of Michigan made between 1963 and 1966 by the North Central Forest Experiment Station, the Michigan Conservation Department, and the National Forests in Michigan and a previous survey made between 1946 and 1957. The sampling errors per million acres of forest land were ±1.6 percent for the latest survey and ±1.1 percent for the previous survey.

ROBERT N. STONE
Principal Economist

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