

May 27, 1957

OHIO AGRICULTURAL EXPERIMENT STATION
Wooster, Ohio

Forestry Mimeograph No. 34

THE IZAAK WALTON EXPERIMENTAL FOREST

By

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In the autumn of 1944 the Wayne County Ohio Chapter of the Izaak Walton League of America purchased its 120-acre Memorial Forest. This tract is located nine miles northwest of Wooster in Cedar Valley. Soon after it was purchased it was made Ohio's first Tree Farm by the Ohio Forestry Association. It was established for a two-fold purpose: first, to provide a living memorial to Wayne County servicemen; and second, to be of educational and recreational benefit to IWLA members and people of the surrounding vicinity.

This attractive woodland area, developed along multiple land-use lines, is known locally today as a showplace of good conservation practices. Provisions have been made to protect the tract from fire, epidemics of tree insects and diseases, and grazing by livestock. New roads, bridges, nature trails, picnic spots, game shelters and feeders, and now a clubhouse in process of construction, add to its natural facilities for outdoor enjoyment.

Worn-out fields reforested with pines to abate run-off and soil erosion now bring yearly returns from the sale of Christmas trees and boughs. They also serve for cultural studies and provide opportunities for observation on close vs wide-spaced planting.

Twenty-one acres of the Izaak Walton Memorial Forest are included in the silvicultural research program of the Forestry Department at the Ohio Agricultural Experiment Station. The main objective is to develop this hardwood stand by sound methods of timber cropping. Recurrent inventories of 45 fifth-acre sample plots give its net board foot yield by species, tree diameter, grade and vigor classes. These data depict the forest's productivity on a per acre per year basis. They

indicates, too, an allowable cut; for under a sustained yield forest management plan, wood is harvested no faster than it grows.

The accompanying charted data reveal the present status of this woods. More is required, though, than reappraisal of its wood volume. Its diameter class distribution and its quality must also be considered. The long-range management goal is to renovate a defective, depleted stand comprised of beech, elm, maple, oak, and hickory so as to secure eventually a well-balanced growing stock of high quality timber. Most of the overstory timber is either close to maturity or overmature and decadent.

Improvement cuts from 1945 until now have amounted to 2,548 net board feet per acre, International ($\frac{1}{4}$ -inch) scale, or to approximately one-half of the saw-timber stand. There remain 20 trees to the acre over 11 inches in diameter breast-high, totalling 2,563 net board feet.

Future cuts will be light, while the forest builds up to full stocking. Efficient cutting implies good silviculture that leaves the best trees capable of rapid growth. Once the growing stock has deteriorated, it requires years of constructive effort to increase the volume of cut which can be sustained.

The young trees are coming on very well. Five times more seedlings and saplings exist now than were present a decade ago. Ingrowth to the 12-inch diameter sawlog class has been 27 board feet per acre yearly. By favoring the trees whose growth is a good investment, this site should be able to support 8,000 or more board feet to the acre in high-grade timber of select species.

Improvement cutting has stepped up the forest growth percent from 0.3 to 3.1 in the past five years. Obviously the stand benefitted from the removal of its poorest risk trees of lowest vigor. Of 75 sawlog-size trees marked for cutting in 1945, only 32 had a usable board foot content. The ensuing ten years brought an additional loss per acre of 4.3 such trees as a result of mortality and degrade to cull. A number of the culls are still standing.

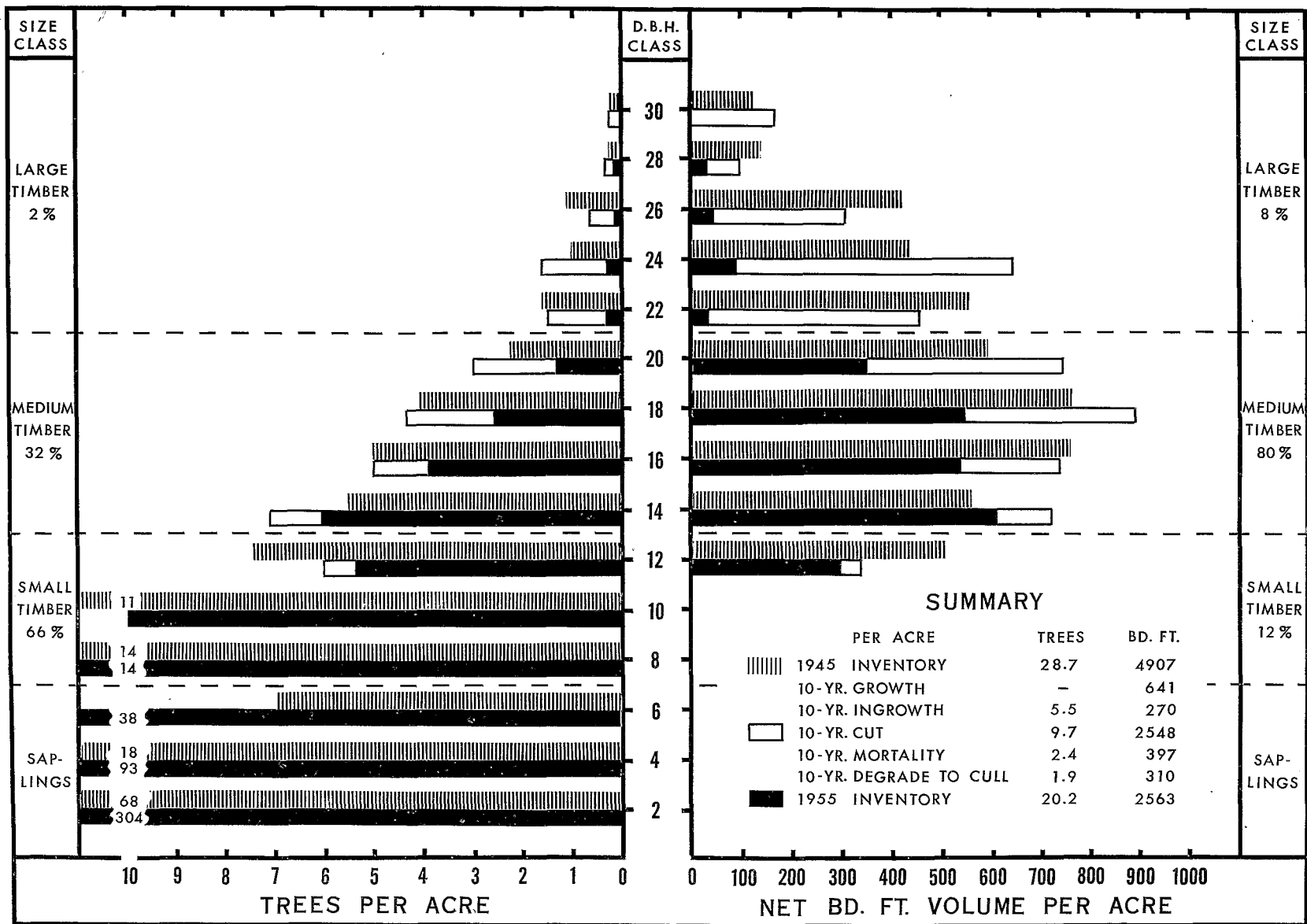
In its "Forest Terminology" the Society of American Foresters defines cull trees as "trees of merchantable size rendered unmerchantable because of poor form, limbyness, rot, or other defect". Such cumulative rejects of earlier logging, often a burden on the land, have slight usefulness except as homes for wildlife. Game authorities say a potential den tree to an acre is ample.

The many cull and defective trees throughout Ohio's farm woods today stand in the way of efficient timber production. Due to exploitative hi-grading, cutting always the best trees and leaving the poorest for growing stock, the net growth depreciates both in volume and value.

Growth on timber of inferior quality is a doubtful asset. Sometimes a stand becomes so run-down as to be an actual liability to its owner. What it needs are improvement cuts, to rebuild a sound growing stock. Often then it is a problem how best to dispose of this low-grade wood. Some may be marketed along with the better trees with which it is mixed. Wood buyers cannot be expected to handle unmerchantable culls. Non-salable material ought to be cut for home use, converted into fireplace wood, or else be killed by girdling or poisoning, in order to assist prospective crop trees. The good, vigorous associate trees deserve adequate growing space.

The Wayne County Chapter members of the IWLA have labored diligently to improve the stand composition of their Memorial Forest. Their records of wood sales for the year 1948 to 1956 inclusive, show in addition to sawlogs, 250 ricks of 18-inch fireplace wood. Marked trees cut for stand improvement were (a) those of inferior species; (b) cull trees, less than 50% sound; (c) "wolf" trees, with excessively large crowns; and (d) "poor risk" trees, which might not survive until the next cut was made.

Effective improvement cutting, even if it nets no immediate cash profit, brings increased future returns from a treated tract. It leads to the progressive forest owner's objective, sustained annual income from a thrifty, fully-stocked, all-aged woods.



GROWING STOCK IN IZAAK WALTON WOODS

IN CEDAR VALLEY, CHESTER TOWNSHIP, WAYNE COUNTY, OHIO

1945 - 1955