TIMBER INVENTORY INSTRUCTIONS

Introduction

A complete timber inventory is conducted in every block during selected years. The purpose is to collect new diameter and condition data for numbered trees, to number ingrowth trees, and to record any fallen trees. It is undertaken primarily by student crews beginning in mid-May and continues until completion.

Set-up

Covering the area

All blocks in the study area are measured. The block progression should begin with 6C and proceed east on C, west on D, east on E, west on F, east on G, west on H, east on I, west on J. Within a block each quadrat is tallied separately, moving in the "U" shaped order 1, 3, 4, 2, when going east, and 2, 4, 3, 1 when going west (see "Tree Mapping Instructions").
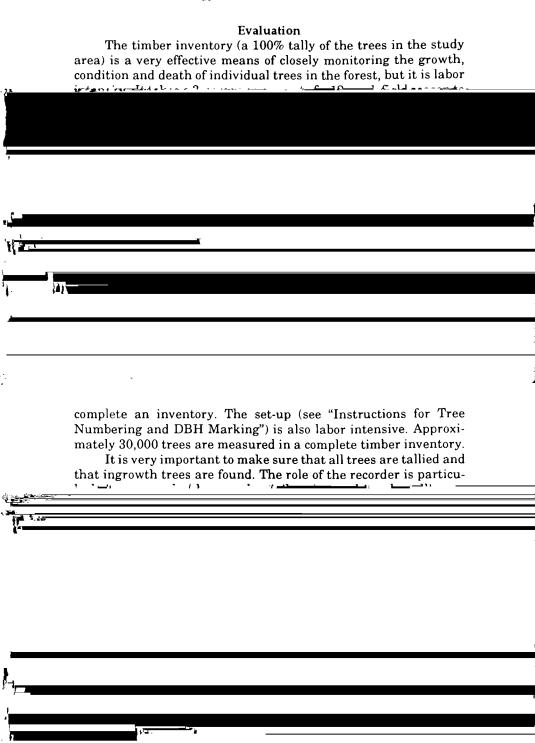
Crews

Crews consist of three people, one recorder and two observers. The recorder is responsible for recording data on the polycorder, making sure all numbered trees are found, and defining the southern line of the measuring area. The observers measure trees.

Procedure

1. When a crew first arrives at a quadrat, the observers lay out the 50m ropes along the two quadrat lines to help define the quadrat boundaries. Quadrat lines are marked by two horizontal blue lines painted on bordering trees.

2. The recorder records the date, observers, recorder, weather, and comments on a tally sheet to keep a record of observation dates and any problems encountered.

3. The most efficient means for covering the area of a quadrat is to make three parallel sweeps (east-west) beginning in the NW corner (see illustration on page 33). This can be varied according to stand density. While the observers make the sweeps, the recorder defines the southern edge of the quadrat, keeps the observers in line, and makes sure all trees are measured.

4. The observers call out the tree number, species, diameter, and condition (if it is in a category

a. *Diameter measurements.* Measure tree diameter with a diameter tape at breast height as defined by the top edge of a DBH paint line, 130cm up from the base of the bole (see Figure 3-2a). All trees with a DBH greater than 9.49cm will be recorded by one-centimeter classes. A DBH class (x) is delineated by the following rule: [(x-D+.5] to [x+.49], e.g., [(10-1)+.5] to [10+.49] = 9.5 to 10.49.

b. *Tree number, species, and condition.* Tree number is found on an aluminum tag at the base of the tree. Tree species and condition codes are found in Table 3-1. The conditions are defined as (0) live—a healthy tree; (1) dead-no living cambium layer; (2) cull—a deformed or damaged tree of no commercial value; (3) dead top—a tree with the top 1m or more dead; (4) almost dead—a tree that will probably die within 5 years; (5) still standing—a tree that was dead during a previous in-

Evaluation

The timber inventory (a 100% tally of the trees in the study area) is a very effective means of closely monitoring the growth, condition and death of individual trees in the forest, but it is labor

complete an inventory. The set-up (see "Instructions for Tree Numbering and DBH Marking") is also labor intensive. Approximately 30,000 trees are measured in a complete timber inventory.

It is very important to make sure that all trees are tallied and that ingrowth trees are found. The role of the recorder is particu-

Table 3-1. Tree species and condition codes.

Tree Species Codes

Species Name	Common Name	Number
Pinus strobus	White Pine	1
Picea rubens	Red Spruce	2
Abies balsamea	Balsam Fir	3
Tsuga canadensis	Hemlock	4
Quercus rubra	Red Oak	5
Quercus alba	White Oak	6
Acer rubrum	Red Maple	7
Betula alleghamensis	Yellow Birch	8
Betula papyrifera	Paper Birch	9
Betula populifolia	Gray Birch	10
Fagus grandifolia	Beech	11
Fraxinus americana	White Ash	12
Acer pensylvanicum	Striped Maple	13
Populus grandidentata	Bigtooth Aspen	14
Populus tremuloides	Quaking Aspen	15
Primus serotina	Black Cherry	16
Pyrus malus		