HOLT RESEARCH FOREST
Instructions for
25 m^2 Tree Regeneration Plots

Filename: REG25M2.INSTRU.DOCX
Date: 19JUN97

Introduction

Tree regeneration will be measured in circular (25 m^2) plots which are located along 134 transects in ledge gaps, tree gaps, harvest gaps, and control areas. These "sapling" plots will be centered at the intersection of the two one m^2 plots (established in 1993 for relevé measurement) previously located along each transect. The plot locations were designed to give a sample of all gap types and controls in representative forest cover and soil types. Counts will be conducted for all tree regeneration >0.5m tall and <9.5cm DBH. In addition, information about harvest stumps, hardwood clumps, and damage to saplings will be collected.

Set-up

To lay out the 25 m^2 sapling plots, first relocate the 1 m^2 relevé plots established on each transect. The paired relevé plots join at one corner that is marked with a labeled orange flag (transect and plot). Quadrat frames (1 m^2) are used to mark the relevé plots. A corner of each frame is around the labeled flag and the opposite corner is around a small white plastic stick. In most locations the orientation of the white sticks and flag is north/south (0 or 180). These frames mark the permanent relevé plots and every effort should be made to avoid trampling these plots. The circular sapling plot (radius = 2.82m) is centered on the labeled flag. Originally (1997) as many sapling plots furthest from the gap edge were located. Plots do not overlap so some transect may have only one or two sampled plots. In subsequent sampling periods, **only the plots selected in 1997 are sampled**.

25 m^2 Sapling Plot Procedure

     The boundary of each sapling plot is located by rotating a marked rope or tape about the plot center or measuring with an EDM (electronic distance meter).

1.   Record date, observers, recorder, weather, transect and plot number.
2.   Count and record all saplings by species and height class or DBH class. See Table 1 for species codes. Diameter is

measured by one centimeter DBH classes as marked on the aluminum tree forks (see 200 m2 sampling methods for details). Two tallest height classes from the 4m2 regeneration plots are counted in this sample, the height classes are:

  C = 0.5-2m tall
  D = >2m tall and <1.5cm.

These height classes are designated as classes 0 and 1 on the data sheet.

3. The recorder will stay near the plot center, the observer will move around the plot in a clockwise direction using the height stick and tree fork to measure each <u>live</u> sapling that falls within the plot as determined at the root collar. The plot boundary (2.82m) is determined by using a tape, rope, or EDM. Trees are recorded by species and height or DBH class with a dot and dash tally. After the plot is completed the number is then tallied as (number of trees.height class). For example, 12 trees in the two cm DBH size class would be recorded "12.2". All stump sprouts will be designated with a "0.1" added to the species code (e.g. Red maple sprouts would be 7.1).

4. Stumps. In addition to the sapling count, the recorder will note the number of harvest-created stumps >9.5cm in diameter at the root collar - the stump count will be kept as conifer or hardwood to species. (**Not recorded after 1997**)

5. Clumps. The recorder will note the number of hardwood sprout clumps by species within the sapling plot.

6. White Pine Weevil. Record for all DBH and height classes. White Pine Weevil attack will be rated as:
0 = none
1 = some (stems showing 1 or 2 weevil killed terminals)
2 = heavy (stems showing >2 weevil killed terminals).

7. Browse. Primarily deer but include other species. Browse categories will be:
0 = none
1 = some(stems showing > and <20% live or dead browsed twigs)
2 = heavy (stems showing > 20% live or dead browsed twigs)
3 = dead (stems showing all dead browsed twigs).

8.   Each gap plot should be designated as being totally within the canopy gap or being under the drip edge of the adjacent trees. Plots may be under the drip edge ("the extended gap") but should not reach beyond the bole of adjacent trees. This determination is made by projecting the edge of the plot vertically. If any vegetation of the overstory canopy is over the plot it is considered an "edge" plot. Record "G" (plots in the gap) or "E" (plots under the drip edge) in the Overstory slot on page 1 of the data sheet.

Equipment List

Height Stick	Tree Fork	Rope (2.82m) or EDM
50m Tape	Orange Flags	Markers & Pencils
Instructions	Data Sheets	Clipboard
Metal detector	Maps of transect & plot locations	

Timber Inventory Codes for the Holt Research Forest

Filename: TICODES.LST
Date: 4 JAN 88

TREE SPECIES

SPECIES NAME	COMMON NAME	NUMBER	ABBREV
Pinus strobus	White Pine	1	WP
Picea rubens	Red Spruce	2	RS
Abies balsamia	Balsam Fir	3	BF
Tsuga canadensis	Hemlock	4	HM
Quercus rubra	Red Oak	5	RO
Quercus alba	White Oak	6	WO
Acer rubrum	Red Maple	7	RM
Betula alleghaniensis	Yellow Birch	8	YB
Betula papyrifera	Paper Birch	9	PB
Betula populifolia	Gray Birch	10	GB
Fagus grandifolia	Beech	11	BE
Fraxinus americana	White Ash	12	WA
Acer pensylvanicum	Striped Maple	13	SM
Populus grandidentata	Bigtooth Aspen	14	POPG
Populus tremuloides	Quaking Aspen	15	POPT
Prunus serotina	Black Cherry	16	BC
Pyrus malus	Apple	17	APL
Ostrya virginiana	Hop Hornbeam	18	HH
Pinus resinosa	Red Pine	19	RP
Pinus rigida	Pitch Pine	20	PP
Hamamelis virginiana	Witch Hazel	25	WH
Alnus sp.	Alder Sp.	26	ALDER

Sample Data Sheet

date entered DLG

Date: 24JUN02   Observers: SAR DLG   Recorder: SAR,DLG

Weather: Sunny clear warm   **Record Gap (G) or Edge (E) in left margin.**

		Weevil or Browse Damage	HEIGHT AND DBH CLASSES									
			C	D								
PLOT NUM	SPEC. CODE		0	1	2	3	4	5	6	7	8	9
C8-2	2		2.0				1.4					
	3		5.0		2.2							
	7							1.5				
	8					1.3						
C8-3	1		4.0									
	3				2.2	1.3	1.4					
	7				2.3							
	2						1.4					
C8-6	1		7.0									
	2		3.0									
	3		1.0		1.3							
C8-4	1		8.0								/	
	2		2.0									
	8							1.5				
	3				2.2							
C8-8	3		2.0									
	7						1.4					1.9
	2		1.0									