SMALL MAMMAL TRAP STATION TIMBER INVENTORY INSTRUCTIONS

Introduction

To relate tree-level habitat information to small mammal data, a timber inventory is done at all transect line small mammal trap stations. Since there are 24 stations on each of six lines, a total of 144 stations are measured (see "Small Mammal Trapping Instructions" Figure 4–6). The area of the plot at each station is $200m^2$, defined by a 7.98m radius around the red plastic stake. A two-person crew completes the measurements on each plot.

The following measurements are taken:

- All TI trees (≥9.5cm DBH) are measured and recorded by species, DBH class, and condition (see Data Sheet Components below for definitions).
- All REG trees (≥1.5cm and <9.5cm) are counted by species.
- All logs ≥10cm diameter are tallied by species and decomposition class, and measured for length and average diameter.
- All stumps are measured for basal diameter.
- Vegetation coverage estimates are made.
- Light is measured using a ceptometer.

Procedure: Trees, Logs, and Stumps

1. Record date, observers, weather, and trap station number on the data sheet (Figure 3–13). Trap station number is recorded in the left margin where the new data begin.

2. Use the first row of each trap station on the data sheet to record the data for the nearest TI tree, log and stump (do not include a REG tree here). Use the second row to record the distance to that nearest tree, log, and stump. "Nearest" and "Distance" should be written on the left most column of the data sheet. If no trees, logs or stumps are present within the plot, then record "NONE"

3. Measure the other trees in the plot. The recorder holds the 7.98m-radius rope at the red stake while the observer at the other end of the rope determines the edge of the plot. All trees near the edge of the plot should be carefully checked to determine if they are in or out of the plot. To be counted in, more than half of the base of the tree should be in the plot. Starting at the outside edge, the observer proceeds around the plot in a clockwise direction. Each tree is measured at DBH, and its DBH class determined. Trees ≥9.5cm have more data collected (see Introduction and Data Sheet Com-

ponents). The information is called out to the recorder. The tree is then marked with chalk on the side towards the trap station to avoid counting it more than once.

4.   The recorder calls back the information to the observer to corroborate it.

5.   After all trees are measured, the observer measures all logs and stumps. (Note that the log "class" column contains both species and decomposition class data.) Those logs and stumps already recorded in the first line as "nearest" are not remeasured.

Data Sheet Components: Trees, Logs, and Stumps

STA#: Station number. To be taken from the aluminum tag attached to the red stake, e.g., 3G31.

Trees ≥9.5cm DBH: Refers to TI trees.

Spec: Tree species by code number (see Table 3–1).

DBH: Diameter at Breast Height (1.3 m), here refers to DBH class defined by rounding actual DBH to the nearest centimeter: 10cm class = DBH 9.5 to 10.49cm.

CND: Condition of the tree: live=0 dead=1.

Trees <9.5: Refers to REG trees.

Spec: Tree species code number (see Table 3–1).

   # : Number of individuals of that species. Use dot and dash tally and then record total number.

Logs: A log must be down and supported only by its branches or another log to be counted; no leaners or dead trees supported by other trees are counted. Evaluate only the portion of the log within the plot and >10cm diameter.

Dia: Average diameter of the log (usually at the midpoint) by centimeter class. When the midpoint does not appear average, estimate the diameter by taking measurements in several places.

Length: Total length of the log within the plot and >10cm diameter. For a forked log, add the length of both branches.

Class: Species and decomposition class separated by a decimal. Species number is the first listed, followed by the decimal point and then the class. Use the species codes from Table 3–1; when a log cannot be identified, the code = 0. Decomposition classes are based on those listed in Table 3–7.

Stumps: Dead trees <1.3m tall and with a basal diameter ≥9.5cm diameter at .25m above the ground will be considered stumps.

Basal Dia: Measure the diameter of the stump at .25m above the ground and record by centimeter class.

Equipment

Diameter tape	Tree fork
50m tape	7.98m rope
Height stick	Chalk
Clipboard	Data sheets
Pencils	

Tree species codes from Table 3–1

Procedure: Vegetation Coverage Estimates

To create a more complete picture of the vegetation at each trap station, vegetation coverage estimates are made at each station where the timber inventory work was conducted. This should be completed as close to the time of the inventory as possible. Estimates are made for the entire 200m^2 area.

On the data sheets (Figures 3–14 and 3–15), there are three coverage categories: ground coverage, (total) coverage, and evergreen coverage. A fourth category, the dominant species category, is for recording the number code of the dominant species, if there is one, in each height class. The four height classes are <0.25m, 0.25–1m, 1–5m, and >5m.

Record the trap station number in the STA# column. Percentage coverages for total coverage and evergreen categories are estimated to the nearest 10%. The coverage codes are as follows:

0 = no coverage in strata

1 = < 5% coverage

10 = 5–15% coverage

20 = 15–25% coverage and etc. by 10% classes to >95% which is 100.

See "Relevé Instructions" for estimating percentage coverage. Total coverage estimates should include all species coverage while evergreen coverage estimates are for evergreen species only. Evergreen species are any that maintain live needles or leaves throughout the year. The evergreen estimate should be a percentage of the 200m^2 plot (*not* percentage of the total coverage percentage).

The ground coverage category should include the code for all ground components which are >5% of the area and their percentage codes. The ground components are dry or wet litter, log, tree root or bole, moss, lichens, soil, bare rock, slash, or water. See Table 3–2 for descriptions and number codes of the components.

Procedure: Light Measurements

Ceptometer readings are taken at each transect trap station as close to the time of the inventory as possible. A reading should be taken in each of the four cardinal directions at a height of 1m. These four readings are averaged to a single reading for each station. Take a checklist of trap stations and record the memory number of the stored data point at each station. See "Light Measurements with a Ceptometer" for more detail on the use of the ceptometer.
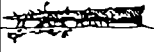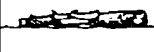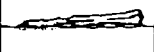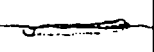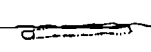
Evaluation

These methods seem to work well, but we have not done enough analyses to be able to evaluate them thoroughly. The selection of these variables was based on other small mammal habitat studies. These measurements should allow us to document both temporal changes and differences between sites. Most of the physical parameters are quantitative, and changes are easily de-tected, but the vegetative and ground cover estimates are ocular, and subtle changes are not as detectable.

Date: 13 JAN 1988   File name: SMTI. INS

Table 3–7. Decomposition classes for logs. From: Thomas, J.W. et al. 1979. Snags. In *Wildlife habitats in managed forests: The Blue Mountains of Oregon and Washington*, ed. J.W. Thomas, pp. 60–77. USDA Forest Service Agricultural Handbook No. 553. Washington, DC.

class 1	class 2	class 3	class 4	class 5

Log Decomposition

Figure 3–13. Small mammal trap station tree inventory data sheet

HOLT RESEARCH FOREST
SMALL MAMMAL TRAP STATION TREE INVENTORY

Date 10SEP86   Observers JWW JJJ   Weather Clear Cool

STA #	Spec	DBH	CND	Spec	DBH	CND	Spec	#	Dia	Length	Class	Basal Dia
		Trees ≥9.5cm DBH					Trees<9.5		Logs			Stumps
4K33	Nearest			3	12	O	—		14	4	3.3	12
	Distance			.5m			—			1.8m		6.4m
	6	11	O	6	16	1	7	⊠9	11	3	4.4	14
	7	12	1	7	14	O	6	‥2				16
	7	10	O	7	11	O						
4K32	Nearest			9	32	O	—			None		None
	Distance			1.4m			—					
	7	22	O	7	21	1	1	‥5				
	7	29	O	5	12	O	7	‥3				
	1	15	O	1	14	O	5	1				
	1	26	O									
4K31	Nearest			5	22	1	—		13	7	2.2	None
	Distance			1.1m			—			2.1m		
	5	11	O	2	17	O	1	‥3	20	3	1.4	
	5	19	O	2	14	1	3	⊐7				
	1	12	O	3	11	O	4	‥2				
	6	15	O									
4K13	Nearest			3	11	O	—			None		None
	Distance			4m								
	7	11	O	7	12	1	1	‥2				
	7	14	O	8	24	O	7	∷4				

Figure 3–14. Small mammal trap station coverage estimates data sheet.

HOLT RESEARCH FOREST
SMALL MAMMAL TRAP STATION COVERAGE ESTIMATES

Date _11 SEP 90_ Observers ___JWW___ Weather ___fog, cool___

Page __1__ of __6__   Line ___3___

STA #	GRND COV	% Coverage Height class[a]				% Evergreen Height class				Dominant Species Height class			
		1	2	3	4	1	2	3	4	1	2	3	4
I13	100 dl	20	40	20	20	10	1	10	10	746	747	—	—
I12	80 dl 20 moss	20	20	20	10	10	1	10	1	756	747	—	—
I11	100 dl	10	30	1	20	1	1	1	10	—	—	—	—
H33	100 dl	10	10	10	30	10	1	10	20	746	95	—	-
H32	100 dl	20	20	20	30	10	1	10	10	746	95	—	5
H31	100 dl	10	20	10	30	1	1	1	1	—	—	—	5
H13	90 dl 10 moss	10	1	20	30	10	1	20	20	—	—	—	2
H12	80 dl 20 moss	10	1	20	30	10	1	20	20	746	-	4	—
H11	80 dl 20 moss	1	1	30	20	1	1	30	10	—	—	4	—
G33	40 dl 10 rock	1	1	10	10	1	1	10	1	—	—	4	—
G32	90 dl 10 slash	40	40	10	10	1	1	1	1	—	185	7	—
G31	90 dl 10 slash	20	20	20	30	1	1	20	10	—	—	4	-
G13	90 dl 10 slash	30	20	10	20	1	1	1	—	—	—	—	5
G12	90 dl 10 slash	10	10	10	20	1	10	10	1	—	—	4	—
G11	90 dl 10 slash	20	10	30	10	1	1	10	1	—	—	7	—
F33	100 dl	10	10	1	30	1	10	1	30	—	3	—	2
F32	100 dl	10	1	1	20	1	1	1	20	—	—	—	—
F31	100 dl	10	1	10	20	1	1	1	10	—	—	—	—
F13	80 dl 20 moss	1	10	10	10	1	10	10	10	—	3	3	2
F12	90 dl 10 moss	20	10	10	20	10	10	10	20	—	3	3	—
F11	90 dl 10 slash	20	60	10	1	1	1	1	—	245	75	—	—
E33	80 dl 20 slash	10	30	20	30	1	10	10	10	—	—	—	—
E32	100 dl	20	40	10	20	1	1	1	1	245	—	—	9
E31	90 dl 10 slash	10	30	20	10	1	1	1	1	—	12	—	14

[a] where 1 = low herbaceous (<0.25m), 2 = high herbaceous (0.25–1m), 3 = shrub (1–5m), 4 = tree (>5m).

Figure 3–15. Small mammal trap station coverage estimates data sheet, p. 2.

HOLT RESEARCH FOREST
SMALL MAMMAL TRAP STATION COVERAGE ESTIMATES

Date __11 SEP 90__ Observers __JWW__   Weather __fog, cool__
Page __2__ of __6__   Line __4__

STA #	GRND COV	% Coverage Height class[a]				% Evergreen Height class				Dominant Species Height class			
		1	2	3	4	1	2	3	4	1	2	3	4
E31	100d1	20	40	10	10	1	1	1	10	245	—	—	—
E32	90d1 10 slosh	20	40	10	1	1	1	20	1	—	12	—	—
E33	90d1 10 slosh	10	20	10	20	1	1	1	1	—	—	—	—
F11	80d1 20 moss	10	1	20	30	10	1	20	20	—	—	—	2
F12	90d1 10 moss	20	10	1	1	10	1	1	1	—	3	—	—
F13	100d1	10	1	10	20	1	1	1	10	—	—	—	2
F31	100d1	10	10	1	1	10	20	10	10	—	3	3	2
F32	90d1 10 slosh	20	10	20	10	1	1	10	1	—	—	7	—
F33	100d1	10	10	1	30	1	10	1	30	—	3	—	—
G11	90d1 10 slash	20	10	10	20	1	1	20	10	—	185	—	—
G12	100d1	10	1	10	10	1	1	1	10	—	—	4	—
G13	90d1 10 slash	10	10	10	10	1	1	20	10	—	—	7	—
G31	90d1 10 slash	20	20	10	30	1	1	1	—	—	—	4	—
G32	90d1 10 slash	40	20	10	10	1	1	10	10	—	—	4	5
G33	90d1 10 moss	1	1	10	20	1	1	10	1	—	—	—	2
H11	80d1 20 moss	1	1	10	10	1	1	30	10	—	—	4	—
H12	80d1 20 moss	10	1	10	10	1	10	1	10	746	—	—	—
H13	90d1 10 moss	10	1	20	10	10	1	20	10	—	—	5	—
H31	100d1	10	20	10	30	1	1	10	10	746	—	—	5
H32	100d1	20	10	20	30	1	10	20	20	—	747	—	—
H33	100d1	20	10	10	20	10	1	20	20	746	95	—	—
I11	90d1 10 moss	10	10	20	20	1	10	10	20	756	747	—	—
I12	100d1	10	30	10	20	10	1	10	1	—	95	—	—
I13	100d1	10	40	20	10	10	1	10	20	746	—	—	—