PROBABILITY MODELS TO PREDICT DOUGLAS-FIR SEED TREE

MORTALITY AFTER PRESCRIBED BURNING

A Thesis

Presented in Partial Fulfillment of the Requirements for the

DEGREE OF MASTER OF SCIENCE

With a

Major in Forest Resources

In the

GRADUATE SCHOOL

UNIVERSITY OF IDAHO


By

James Linwood Spicer

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Abstract

Two models for estimating interior Douglas-fir (*Pseudotsuga menziesii* var. *glauca*) tree mortality as a direct result of prescribed understory fire are presented. Three stands located in northern Idaho comprised the study area and, of the variables examined, tree height and percent crown scorch were the best predictors of mortality.

The models can be used in conjunction with existing fire behavior models and burning guidelines to aid managers in making site preparation decisions.

Study Site

Three stands harvested by the seedtree method in 1980 on the University of Idaho Experimental Forest's Flat Creek Unit near Princeton, Idaho, were chosen for this project. In each of these, Douglas-fir and western larch were the favored species, with minor component of ponderosa pine in one stand. Stand numbers were 1-6-9, 1-4-8, and 1-4-6.

Stand Map of the
Flat Creek Unit,
College of Forestry,
Experimental Forest
1986

N
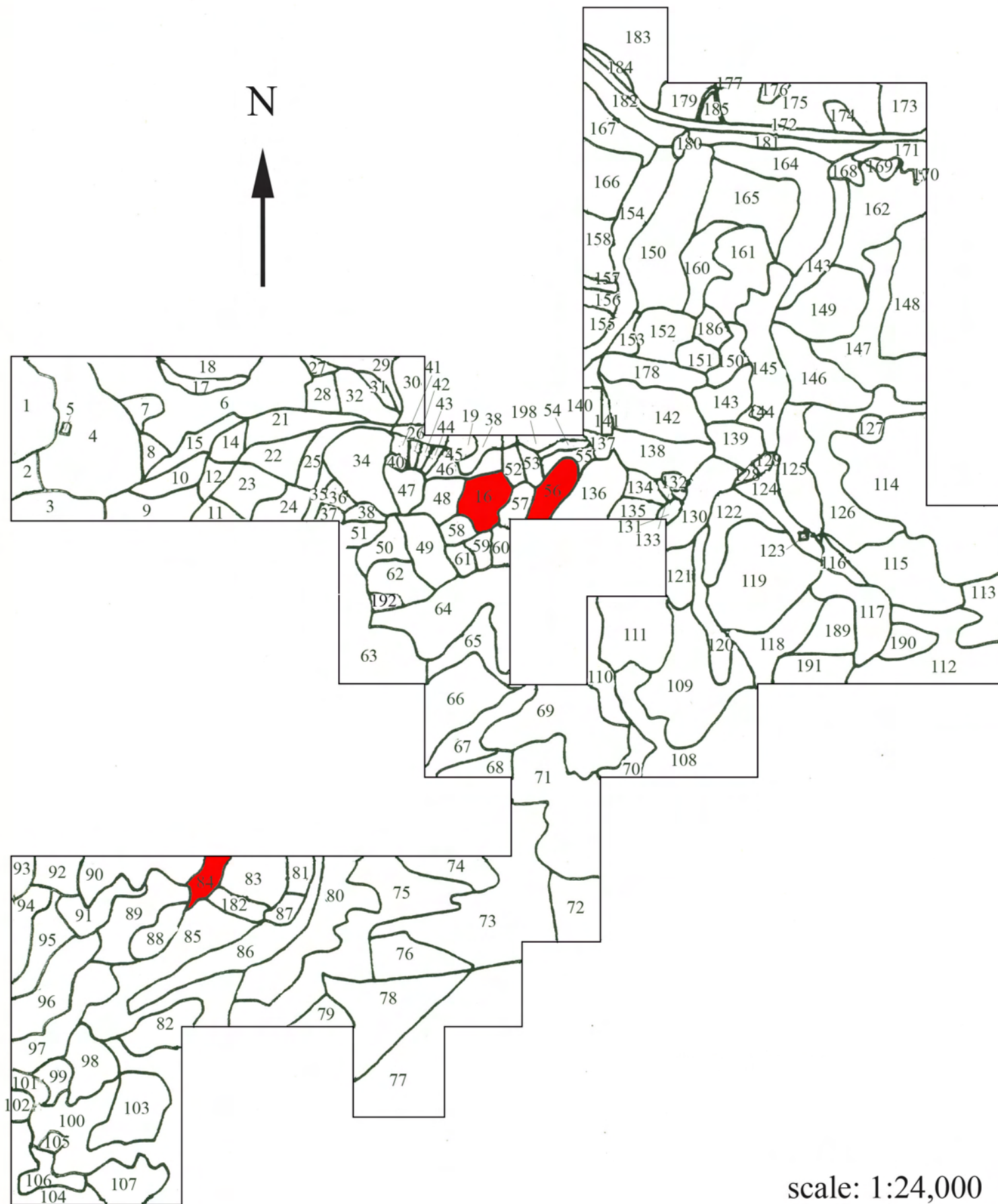
By finding the stand number
on the table for the map, you
are able to then find the stand
number on the map an see
where the research took place
on the experimental forest.
This map and table came from
*A Combined Report For
Fiscal Years 1980 Through
1986*

By
Forest Manager,
Harold Osborne
The maps were edited by
Rachel Voss

scale: 1:24,000

Table 6-1. Continued

STAND #	MAP #	STAND DESCRIPTION	ACRES	HARVEST ACTIVITY CODE	FY HARVEST	SLASH/ SITE PREP CODE	FY PREP	REFOREST CODE	FY REFOREST	LOGGING METHOD
10114	174	MINI SKIDDER BY RAILROAD	4.2	T	80	L&S	86	NR	86	G
10406	56	ZIMMERMAN SEED TREE #2	13.7	ST	80	BB	81	NR		
10408	16	ZIMMERMAN SEED TREE #1	12	ST	80	BB	81	NR	81	C
10411	48	ZIMMERMAN CLEARCUT	8	CC	80	BB	81	P	81	C
10510	71	CLEARCUT / RELOG	44	CC	80	BB	81	P	81	G
10601	96	AMOEBA CLEARCUT	22	CC	80	BB	81	P	81	G
10602	102	BENNY'S LINE STRIP	4	CC	80	BB	81	P	81	C
10606	99	SEED TREE	5	ST	80	DP&B	80	NR	80	G
10608	95	CEDAR POLE SALE	18	CC	80	BB	82	P	82	G
10609	84	SEED TREE WITH PEELERS	15	ST	80	BB	81	NR	81	G
10609	89	SEED TREE NORTH	6	ST	80	DP&B	81	NR	81	G

TABLE 6. AN EXPLANATION OF CODES USED IN TABLES 6-1 AND 6-2.

HARVEST ACTIVITY CODES

CC - CLEARCUT
SHWD - SHELTERWOOD
ST - SEEDTREE
SE - SELECTION
T - THINNING
LT - LOW THINNING
N - NO HARVESTING
IMP - IMPROVEMENT CUT
P - CUT PRIOR TO FY80

REFORESTATION CODES

P - PLANTED
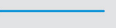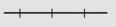NR - NATURAL REGENERATION
IP - INTERPLANT
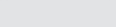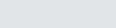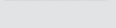
SITE PREPARTAION CODES

BB - BROADCAST BORD
DP&B - DOZER PILE AND BURN
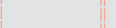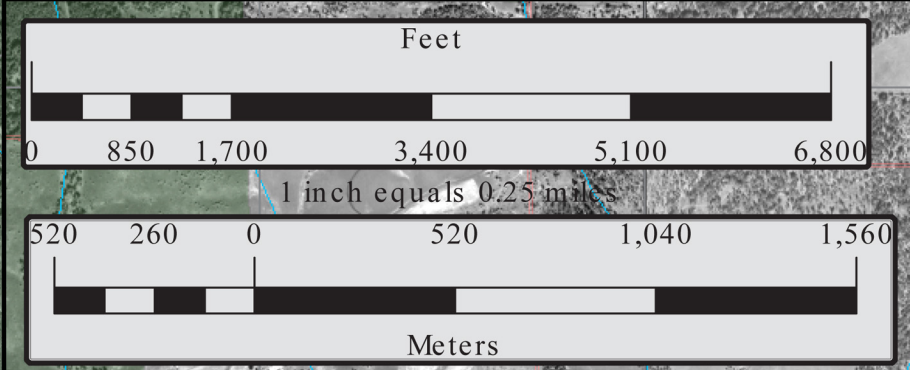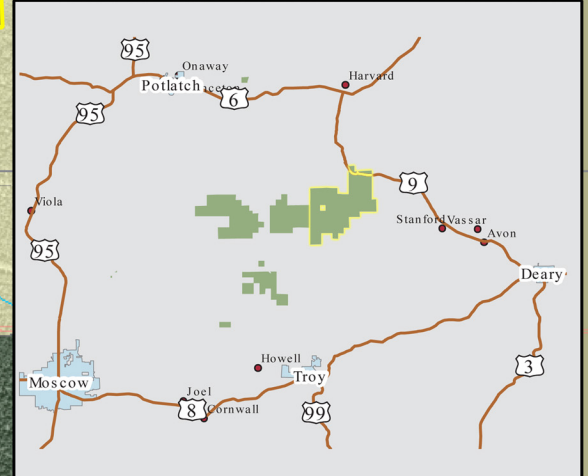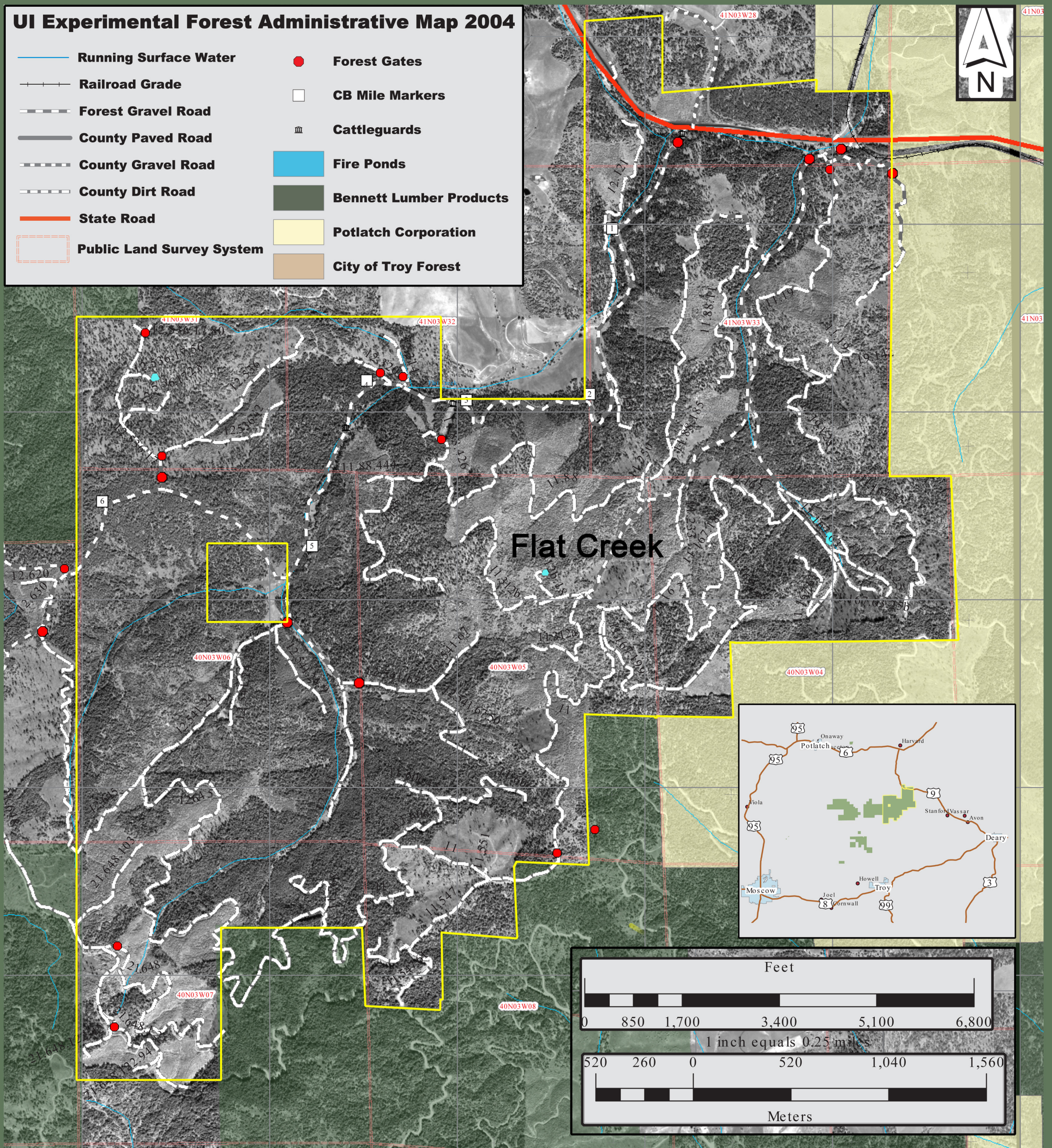L&S - LOP AND SCATTER
JPB - JACKPOT BURN
HPB - HAND PILE AND BURN

LOGGING METHOD CODES

C - CABLE LOGGING
G - GROUND SKIDDING
H - HORSE LOGGING

UI Experimental Forest Administrative Map 2004

Running Surface Water	● Forest Gates
Railroad Grade	□ CB Mile Markers
Forest Gravel Road	Cattleguards
County Paved Road	Fire Ponds
County Gravel Road	Bennett Lumber Products
County Dirt Road	Potlatch Corporation
State Road	City of Troy Forest
Public Land Survey System	

Flat Creek

41N03W28

41N03W31   41N03W32   41N03W33

40N03W06   40N03W05   40N03W04

40N03W07   40N03W08

Onaway   Harvard
Potlatch
95   6
Viola
95   9
Stanford Vassar
95   Avon
Deary
Moscow   Howell Troy   3
Joel Cornwall
8   99

Feet
0   850   1,700   3,400   5,100   6,800

1 inch equals 0.25 miles

Meters
520   260   0   520   1,040   1,560

Flat Creek

Location of Complete Research:

Author & Title: Spicer, James Linwood
Probability Models to Predict Douglas-Fir Seed Tree Mortality After Prescribed Burning

University of Idaho Library:

Call Number- SD397.D7S65

College of Natural Resources:

Department- Forest Resources

Other Sources: