

YIELD OF  
PONDEROSA PINE SEEDLINGS  
FOLLOWING BROADCAST AND SPOT  
HEXAZINONE APPLICATIONS

A Thesis

Presented in Partial Fulfillment of the Requirements for the

Degree of Master of Science

With a

Major in Forest Resources

In the

College of Graduate Studies

University of Idaho

By

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## STUDY 1

### INFLUENCE OF HEXAZINONE SPOT SIZE ON AVAILABLE SOIL MOISTURE AND YIELD OF RECENTLY ESTABLISHED PONDEROSA PINE TREES

#### ABSTRACT:

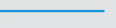

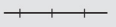



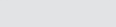

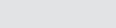

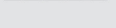



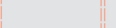
A 5-year study was established in a 2-year old ponderosa pine plantation to test the effect of competition control using hexazinone within varying disturbances of trees on available soil moisture and subsequent tree yields. Competition consisted of herbaceous vegetation in predominantly pinegrass community.

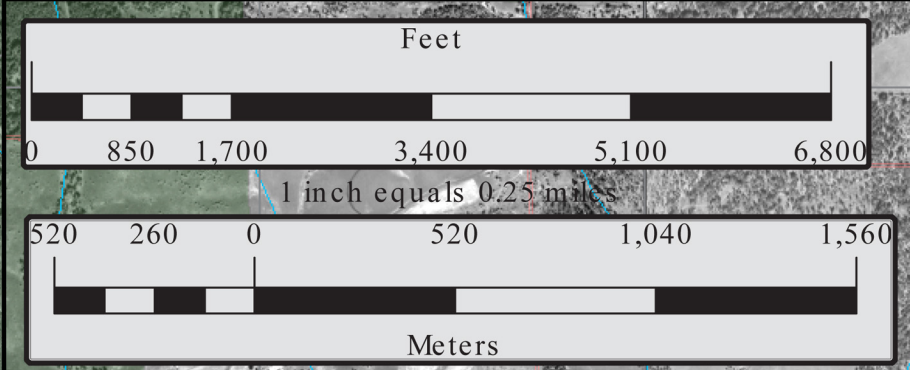
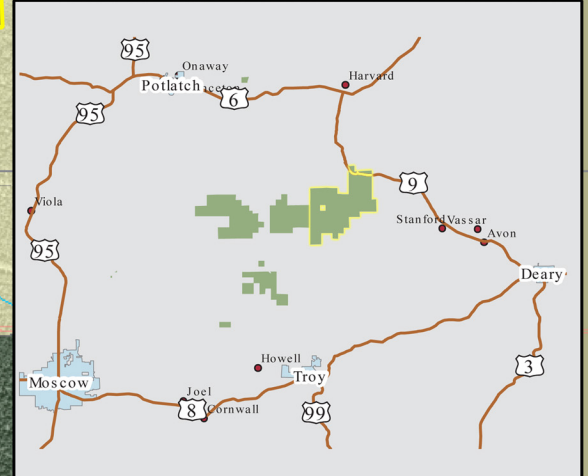
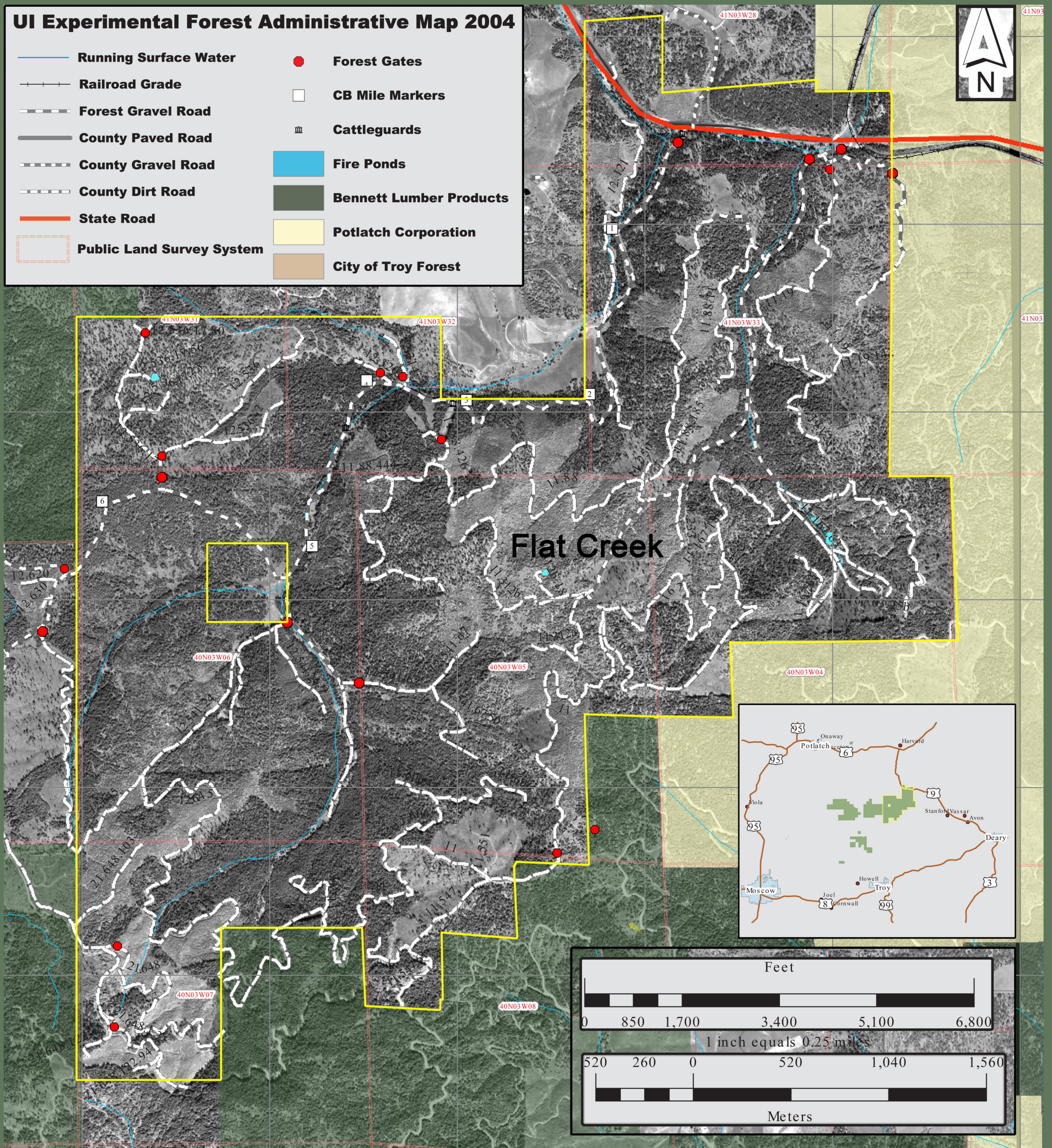
The size of the herbicide-treated area around a tree (spot-size) affected soil moisture. Available moisture near the tree increased with increasing spot diameter up to 4 ft. during the first post-treatment growing season. These soil moisture effects were correlated with subsequent volume yields of the ponderosa pine. After 5 years following treatment was significantly related to percent soil moisture measured during the first growing season following treatment.

#### AREA OF STUDY

The study is located on the Flat Creek Unit of the University of Idaho Experimental Forest. The site ranges over an area of northwest, west and southwest aspects with moderate slopes of 10-35% at an elevation of 3,000 feet. Moderately deep, well-drained soils were formed in a discontinuous mantle of loam resulting primarily from Mt. Mazama volcanic ash deposited over loess which overlay granodiorite residuum. Surface soil texture is silt loam and rooting depth is approximately 53 inches, ranging from 40-60 inches. Annual precipitation in the area averages 30-35 in., with well defined summer drought of 2-3 months.

# UI Experimental Forest Administrative Map 2004

- |   |                                  |   |                                |
|---|----------------------------------|---|--------------------------------|
|  | <b>Running Surface Water</b>     |  | <b>Forest Gates</b>            |
|  | <b>Railroad Grade</b>            |  | <b>CB Mile Markers</b>         |
|  | <b>Forest Gravel Road</b>        |  | <b>Cattleguards</b>            |
|  | <b>County Paved Road</b>         |  | <b>Fire Ponds</b>              |
|  | <b>County Gravel Road</b>        |  | <b>Bennett Lumber Products</b> |
|  | <b>County Dirt Road</b>          |  | <b>Potlatch Corporation</b>    |
|  | <b>State Road</b>                |  | <b>City of Troy Forest</b>     |
|  | <b>Public Land Survey System</b> |   |                                |



Flat Creek



## Location of Complete Research:

Author & Title: DeGroot, John  
Yield of Ponderosa Pine Seedlings Following  
Broadcast and Spot Hexazinone Applications

University of Idaho Library:

Call Number- SD397.P6115D44 1991

College of Natural Resources:

Department- Forest Resources

Other Sources: