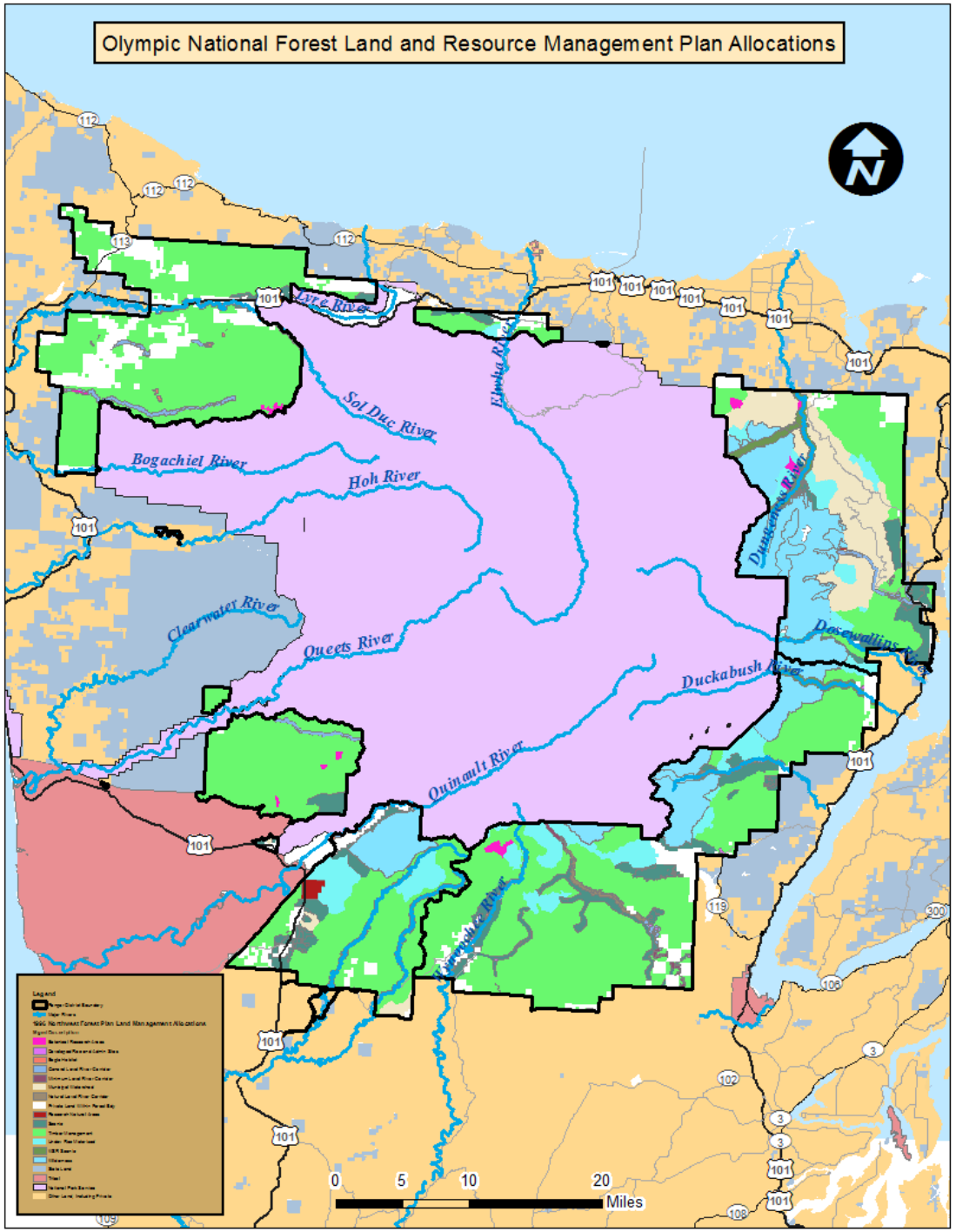
Timber Management, Obstacles and Opportunities

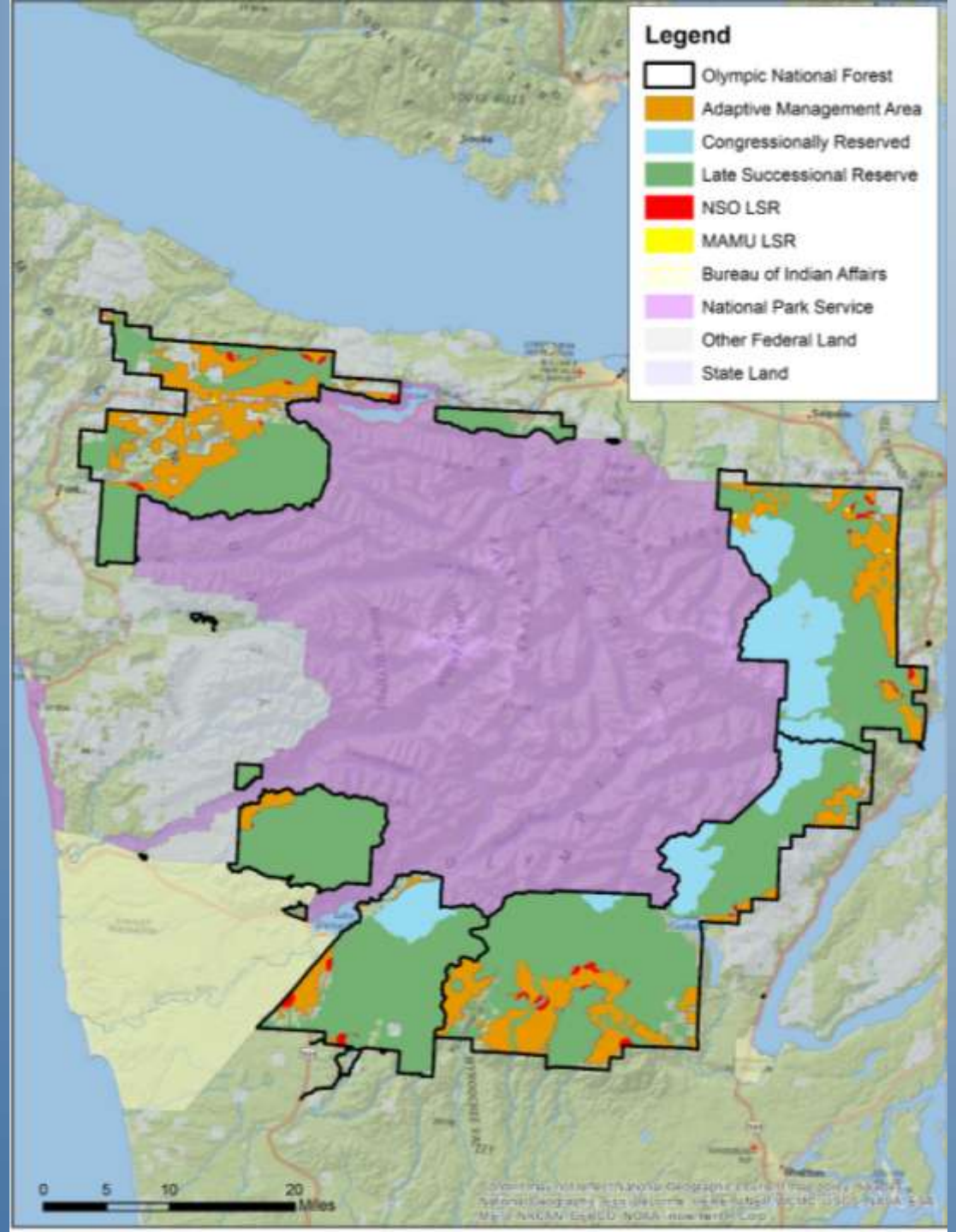
The Olympic National Forest



Olympic NF LRMP Allocations

Federal Forest Management Gridlock in the 80's and early 90's

- 1970's-1980's Old-growth on private lands almost all harvested shifting harvest of old-growth onto Federal lands
- ONF timber sold in 1983—406 million board feet,
- 1989 Congress convenes the Interagency Scientific Committee (ISC) to develop conservation strategy for the NSO
- Early 1990's lawsuits, injunctions stopped old-growth logging on Federal lands
- 1991 Congress calls upon "Gang of Four" to produce an assessment and plan for management of Late Successional Old-Growth on Federal Lands in the PNW, "Scientific Panel on Late-Successional Forest Ecosystems"
- Northern Spotted Owl & Marbled Murrelet listed under ESA in early 90's.



Olympic NF NWFP Land Use Allocations

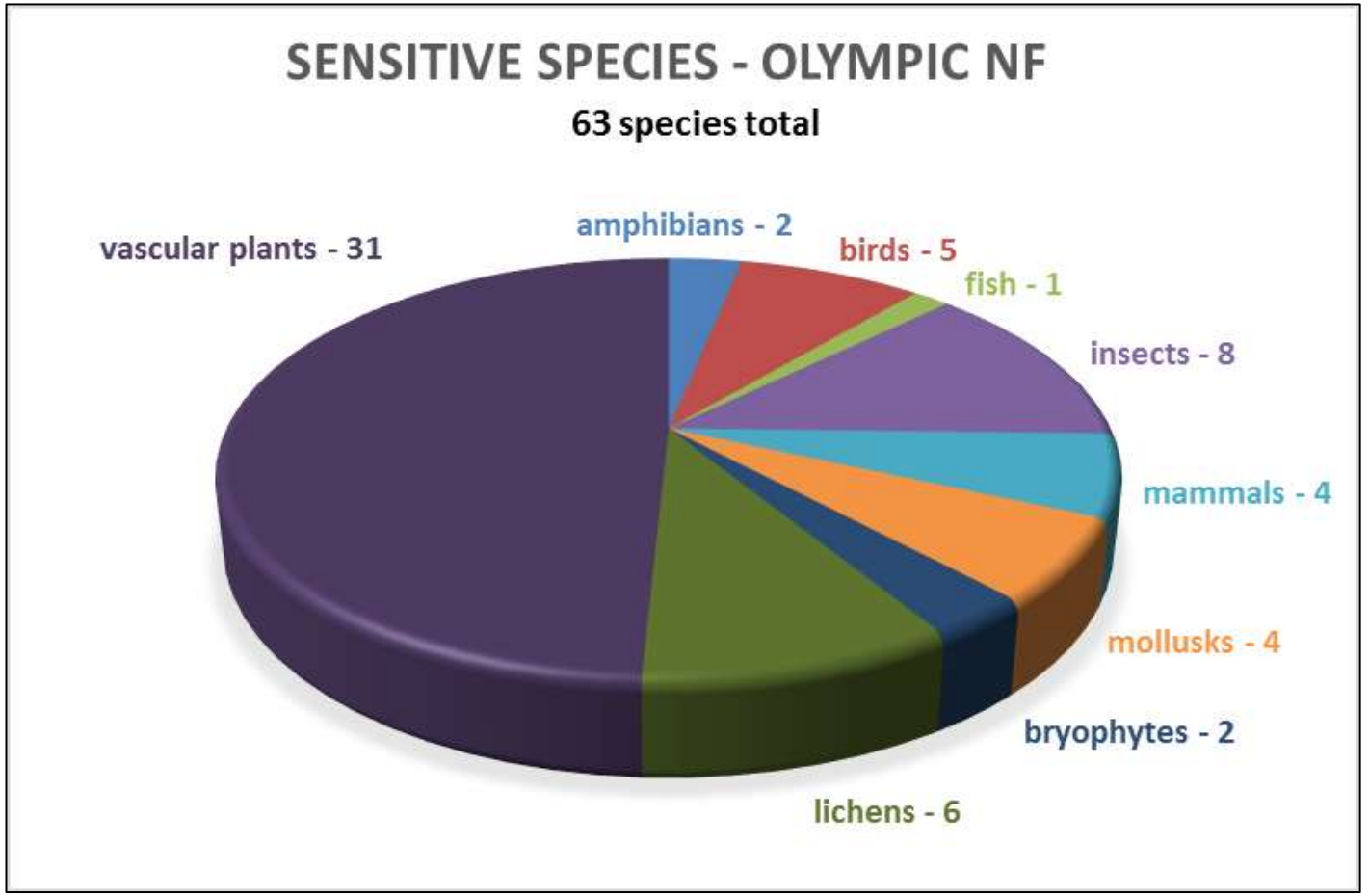
Federally Listed Species on Olympic National Forest

- Taylor's Checkerspot (E) and Designated Critical Habitat
- Northern Spotted Owl (T) and Designated Critical Habitat
- Marbled Murrelet (T) and Designated Critical Habitat
- Bull Trout (T) and Designated Critical Habitat
- Puget Sound Chinook Salmon (T) and Designated Critical Habitat
- Hood Canal Summer-run Chum Salmon (T) and Designated Critical Habitat
- Puget Sound Steelhead (T) and Designated Critical Habitat

Western bumblebee

Harlequin duck

Quinault fawn lily



Malone jumping slug

Olympic torrent

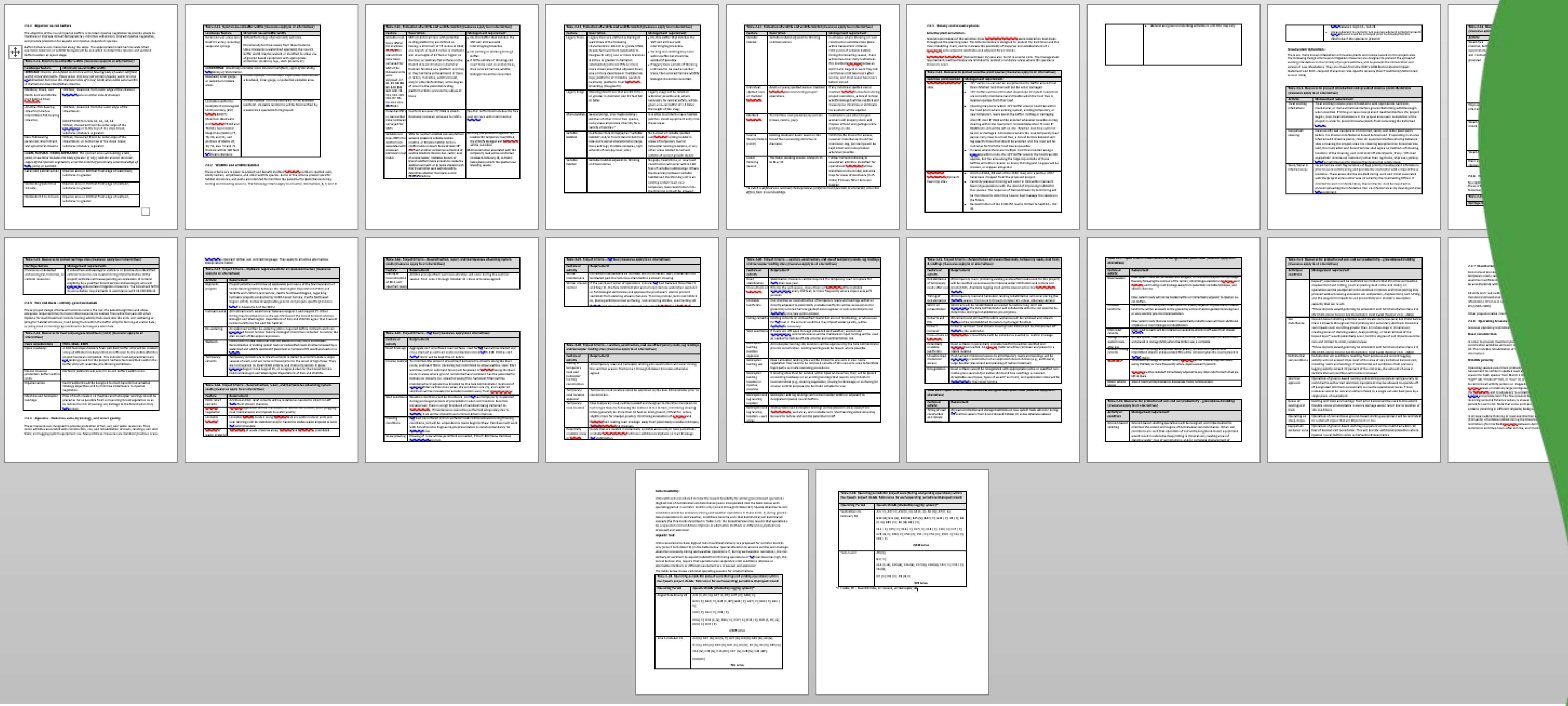
Keen's myotis

Niebla cephalota

Iwatsukiella leucotricha

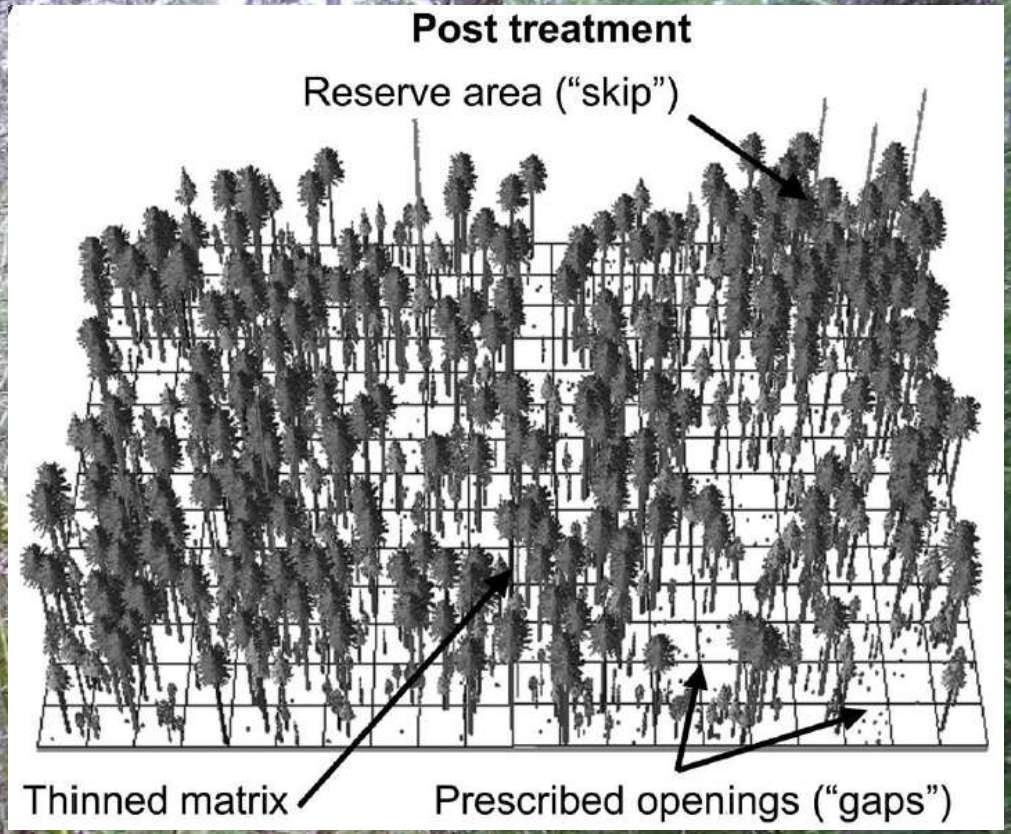
Bog clubmoss

Example Project Design Criteria



Infrastructure

Variable Density Thinning (VDT) - a technique to accelerate the creation of within-stand structural and compositional variety of mid-successional stands and move them more towards an understory reinitiation stage.



Variable Density Thinning unevenly thins a unit using differing densities, unthinned (skip) areas and openings (gaps) to promote a structural mosaic.

The objective is to create structural components that make the stand more inviting to plant and animal species dependent on late-successional habitat more quickly than if natural processes were allowed to take place.

Easy to apply

Variability in growth rates

Increased plant cover and tree regeneration

Tree and Understory Responses to Variable-Density Thinning in Western Washington

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ABSTRACT

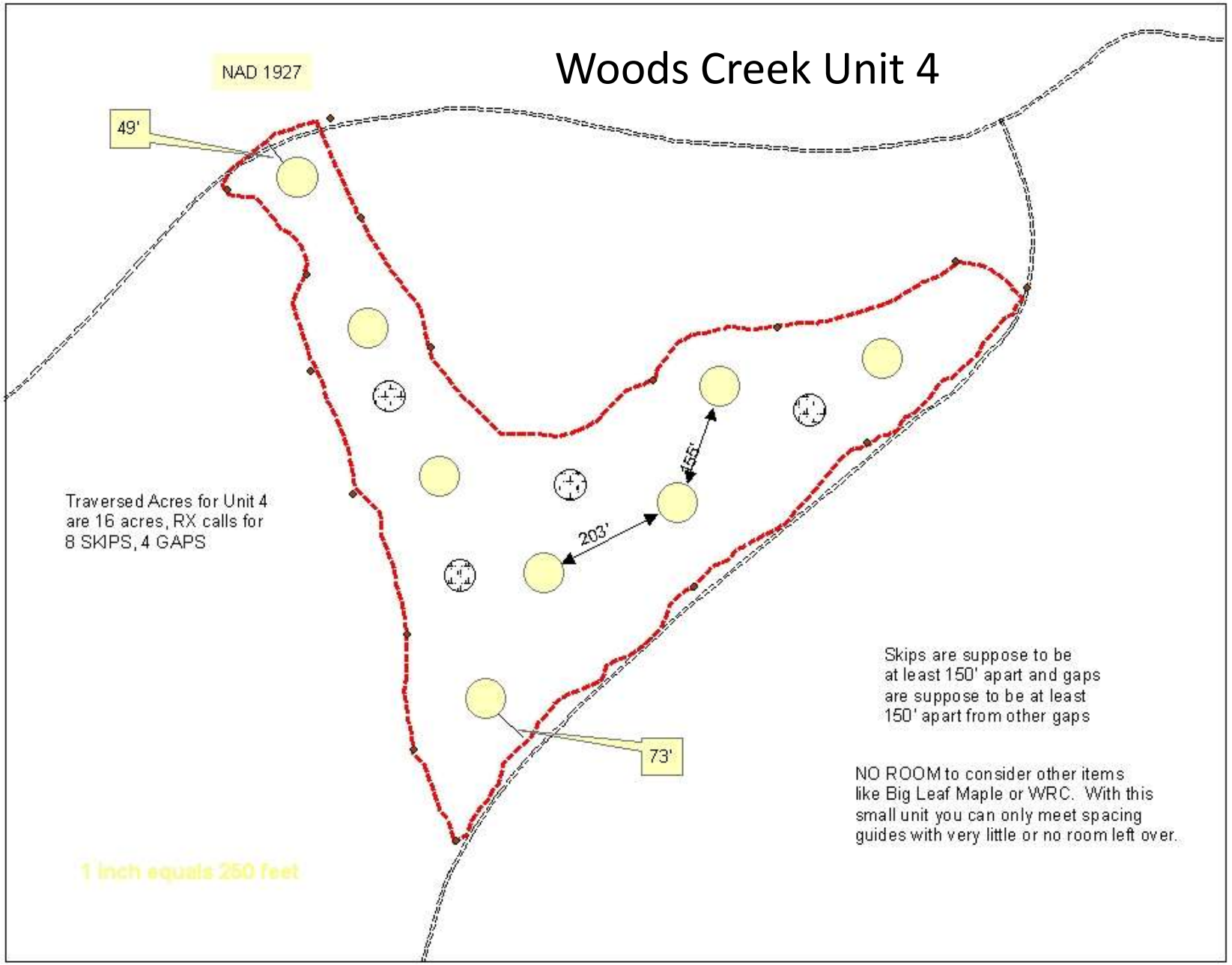
The Olympic Habitat Development Study was initiated in 1994 to evaluate whether active management in 35- to 70-year-old stands could accelerate development of stand structures and plant and animal communities associated with late-successional forests. The study used a variable-density thinning prescription as the main tool to alter stand structure; the prescription included creating gaps and retaining uncut areas, and thinning the remaining forest matrix. We assessed tree damage (primarily windthrow) following thinning, 5-year tree growth, and 3-year vegetation development in control and thinned plots. Windthrow damage was minor in most plots, occurring primarily in stands with high height-to-diameter ratios and located in vulnerable topographic positions. Tree growth responded positively to thinning. In addition, tree growth differed spatially—trees near gaps or along skid trails had better-than-average growth whereas trees near uncut patches had poorer-than-average growth. Understory vegetation responded to thinning with increased percentage of cover and number of herbaceous species in created gaps. Percentage of cover of mosses and liverworts was greatest in undisturbed areas. Early results from thinning is operationally feasible and demonstrate that the variable-density thinning increases spatial heterogeneity in the stands.

owth, windthrow, implementation, new techniques.

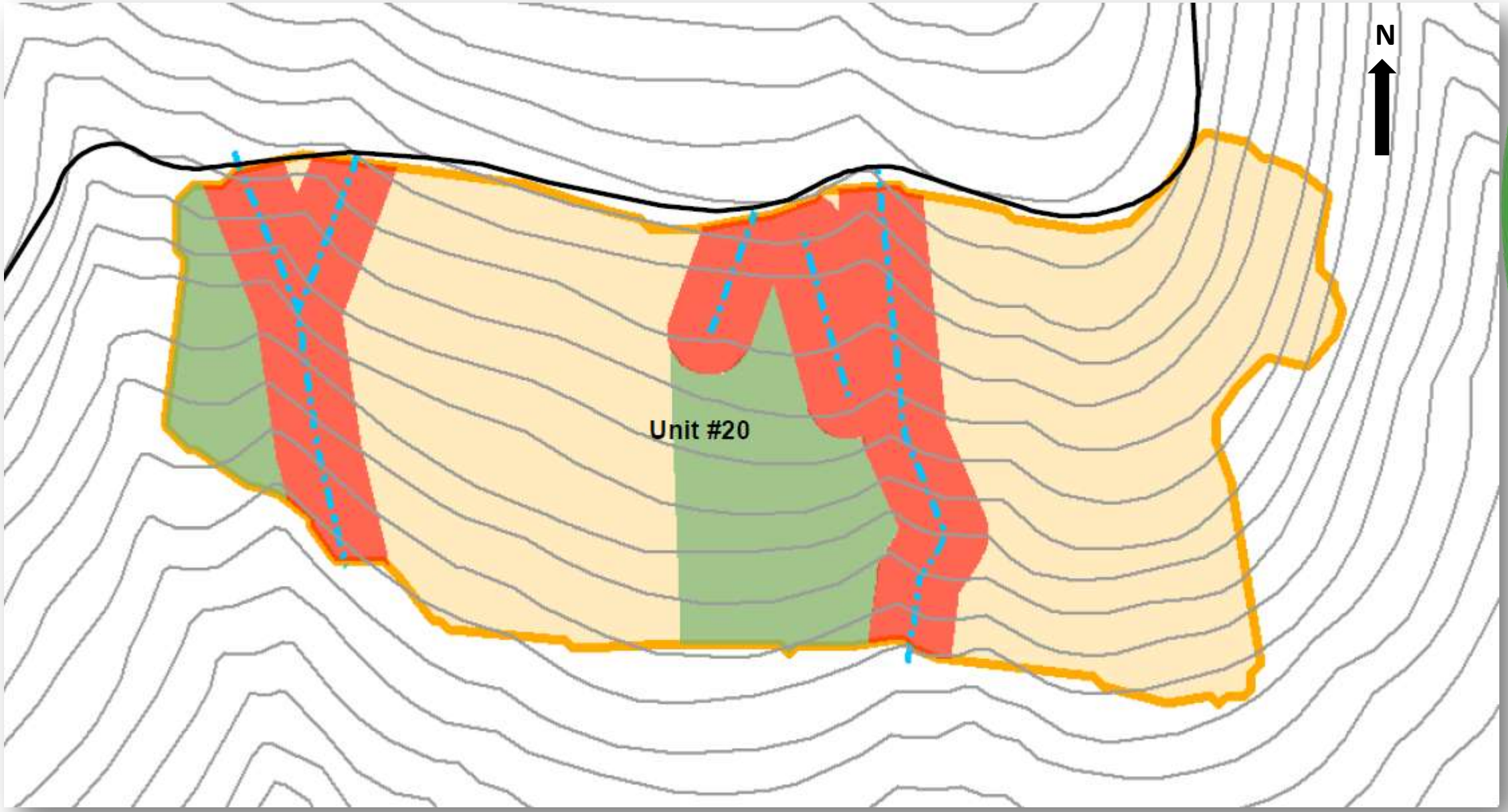
The Olympic Habitat Development Study was initiated in 1994 to evaluate whether variable-density thinning and ... could accelerate development of stand structures and plant and animal communities associated with late-successional (or old-growth) forests. The study was established in the Olympic ... Pacific Northwest Research Station ... Natural Resource Management ... for the study also ... University of Washington, ... Natural Resources, the U.S. ... Washington Department of Fish and Wildlife. Plot sizes were selected to be large enough to assess population responses of small mammals. In addition, the treatments manipulating coarse woody debris were designed specifically to enhance wildlife habitat. Pretreatment surveys of forest-floor small mammals and arboreal rodents were conducted on all plots (Carey and Harrington 2001). Post-treatment surveys of small mammals and arboreal rodents were collected in 2004 in a subset of the plots but that data, and aspects of the study related to course woody debris, are not included in this report.

Variable-density thinning is a relatively recent term for thinning in a nonuniform manner, typically with wildlife or biodiversity along with traditional economic objectives. Despite much discussion about the potential of this approach, as well as the implementation of many projects involving variable-density thinning in the western United States and Canada in the last 10 years, little information is available to managers on stand responses. This report provides early findings on treatment implementation, logging damage and

Woods Creek Unit 4




Skip
Gap


N
Unit #20


Gap Areas
Skip
Skip Area
Skip Area
post treatment
2003
Imagery Date: 6/9/2015 46°28'11.18" N 121°46'41.50" W elev 2707 ft eye alt
Google Ear

Designation Schemes

DxD - Designation by Description is a method used to designate leave or take trees without painting individual trees, but by describing the trees to be removed based on characteristics that can be verified after removal and can be replicated. (e. g. tree diameter, distance between trees)

DxP - Designation by Prescription specifies the end result on the ground. The description must include specific information that allows all parties to arrive at a similar result. The choices of which trees to take or leave may not be the same for all parties. (e. g. trees per acre, basal area)

ITM – Individual Tree Mark physically marks all trees that are to be either taken or left.

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An evaluation of tree marking methods for implementing spatially heterogeneous restoration

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ABSTRACT

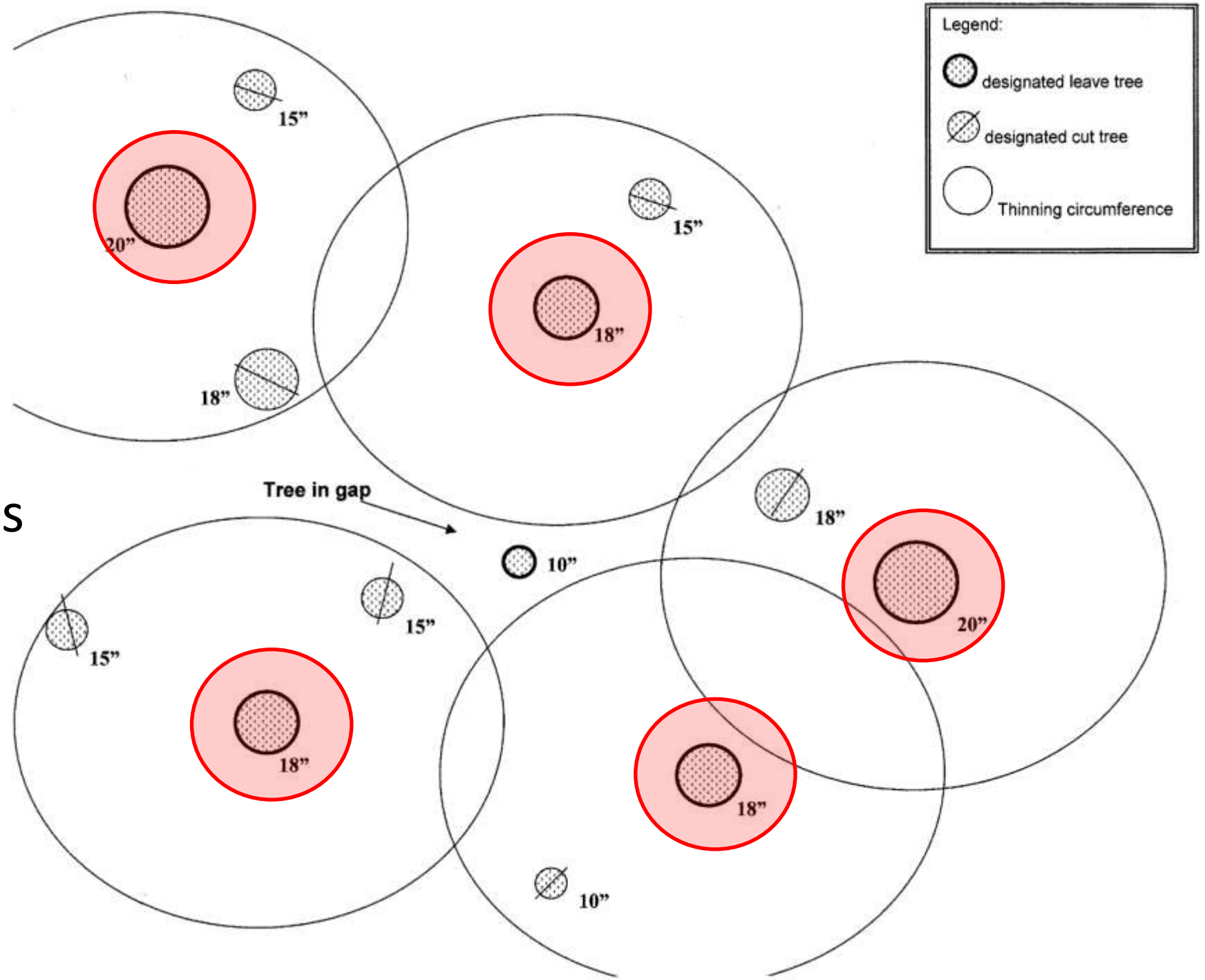
Silviculturists are increasingly focused on the development of structurally complex forests through spatially heterogeneous treatments; however, the implementation of these treatments is challenging. We investigated the effectiveness of three tree marking methods used to implement spatially heterogeneous restoration treatments on Colorado's Front Range: Individual Tree Marking (ITM) physically marks all trees that are either to be cut or left; Designation by Description (DxD) provides a description of the trees that are to be removed based on specific tree characteristics; and Designation by Prescription (DxP) provides the operator with a description of the desired outcomes of the treatment. We employed a mixed methods approach by (a) quantitatively comparing the heterogeneity of stands that have been treated; and (b) interviewing personnel involved in the implementation of these treatments to qualitatively evaluate their efficiency and effectiveness. Neither the quantitative nor the qualitative study methods found a single marking method that was superior to the others in all respects. However, several factors should be considered when selecting a tree marking method, including: the need to set clearly defined silvicultural objectives; personnel experience; trade-offs among personnel; the use of hybrid marking methods; and the range of acceptable outcomes.

KEYWORDS

Designation by description; designation by prescription; forest structural complexity; individual tree marking; operator select

Designation by Description

- Radial spacing
- Diameter limits
- Minor species



Skips for Biodiversity


Double DxD

Legacy features


Wildlife features


Funding Opportunities
Timber Sale: KV Funding
Stewardship Sale: Retained Receipts
Good Neighbor Authority: Program Income

Understory Conifer Planting

Down wood creation

Log Pyramids

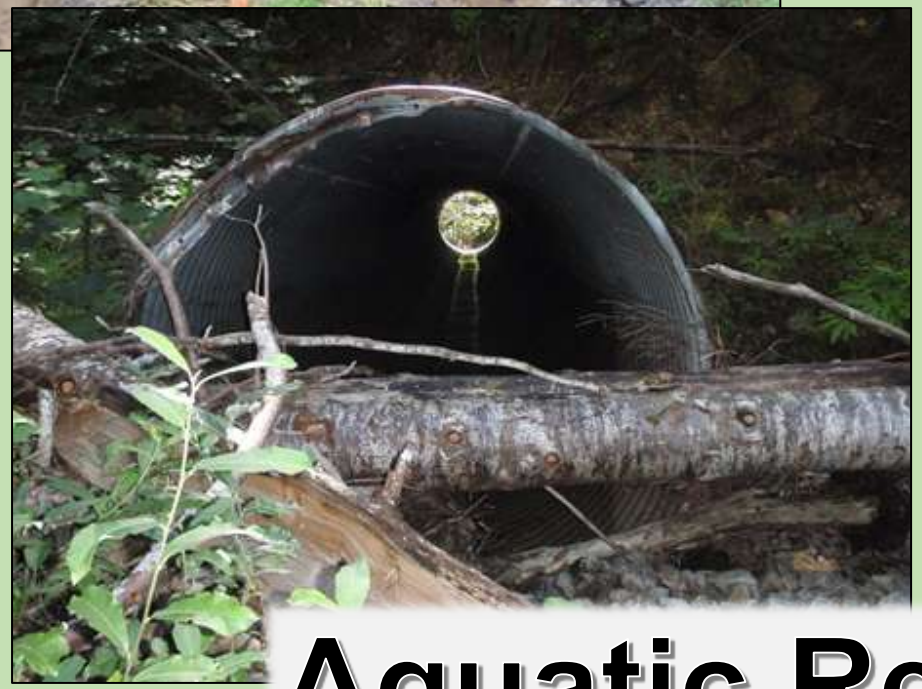
Log Pyramids

Snag Creation


Slash Piling

Nest Box Installation

Pollinator Habitat Enhancement



Aquatic Resources


Weeds!

for the greatest good