

Successional Relationships of Vegetational Composition
to logging, Burning, and Grazing in the
Douglas-fir/Physocarpus Habitat Type
of Northern Idaho

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ABSTRACT

The Pseudotsuga menziesii/ Physocarpus malvaceus habitat type is an important timber-producing habitat type in the northern Rockies. It also has good potential for livestock grazing, and many of the member shrubs are important big game browse species. Little, however, is known regarding successional relationships of vegetative composition. Descriptions were made of some of the seral communities in this habitat type and an ordination of these same communities was also made to develop a secondary successional sequence.

Stands undisturbed since 1900 have vegetative compositions which generally parallel published records of climax Douglas fir/ Physocarpus communities. Burning produced high cover of Ceanothus sanguineus and Spiraea betulifolia, while logging produced high cover of Holodiscus discolor and Rosa gymnocarpa. Rosa nutkane is the only shrub with highest cover on grazed sites. In the herbaceous layer, Calamagrostis rubescens has high cover on burned sites while Arnica cordifolia has high cover on logged sites. Species composition in the herbaceous layer of grazed sites shows the most dissimilarity to other sites.

The ordination produced results which, when graphed, form a cone or pyramid-like model of succession. Highly disturbed sites form the base and climax sites form the apex. The time required to reach climax is related to degree or intensity of disturbance. Disturbance intensity is the most important factor affecting succession. The successional sequence, furthermore, can not be divided into recognizable stages, but forms a continuum with vertical as well as horizontal direction.

Study Site

The study area is centered in Latah County in northern Idaho, between the Columbia plateau on the west and the Rocky Mountain Foothills on the east. It extends north to Plummer, Benawah County, to Kamiah Butte, Whitman County, Washington, on the west end of the south side of the Potlatch River canyon at Kendrick, in Nez Perce County. (Fig. 3).

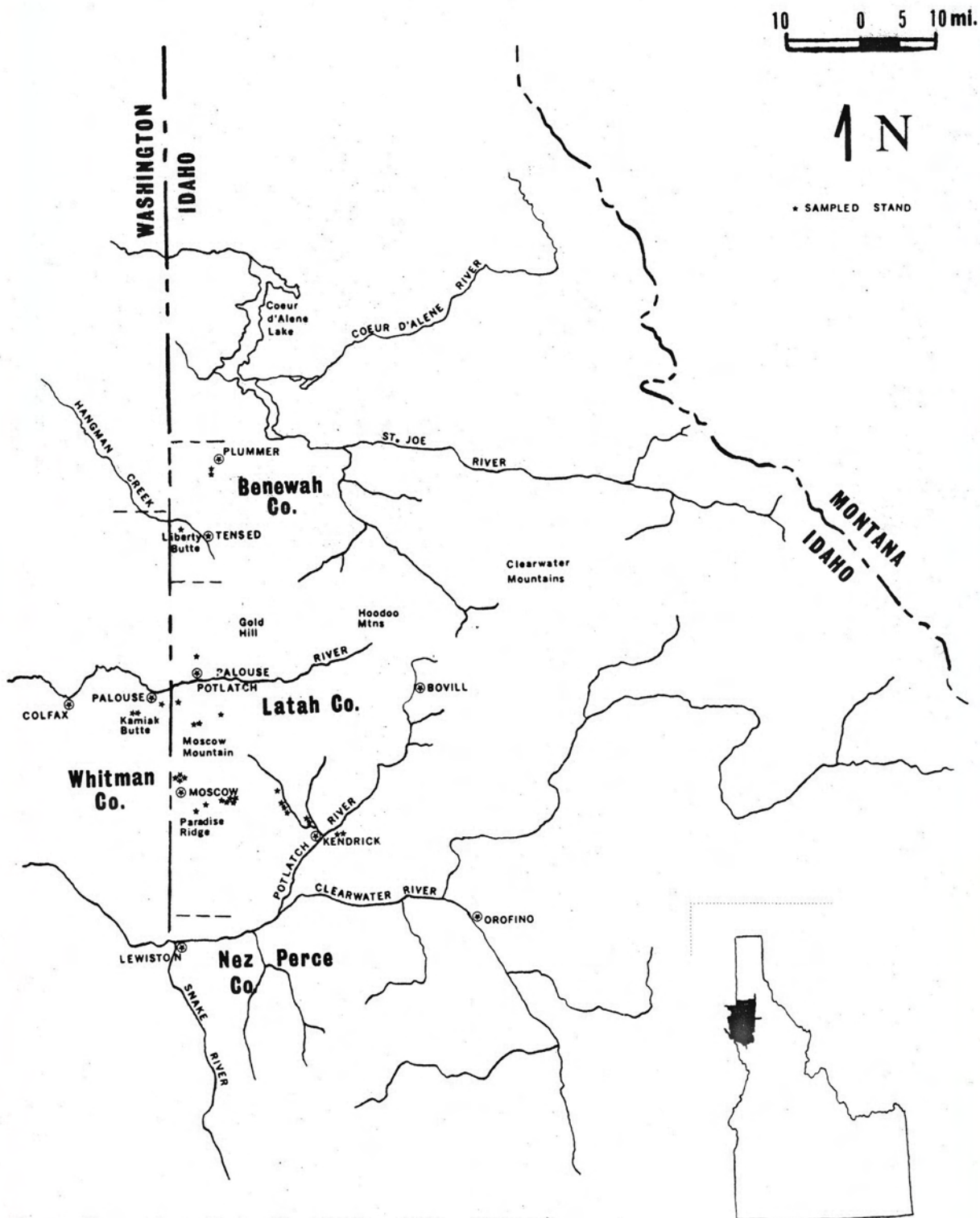


Figure 3: Location of study area (insert) and sample stands.



Location of Complete Research:

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