



Silviculture Treatments for Ecosystem Management in the Sayward

STEMS is an integrated research experiment that tests seven silvicultural systems with different management strategies. The objective of the study is to use the concepts of ecosystem management to create diverse, multiple values within the project area by fostering a balanced distribution in time and space of many stand conditions and stages of development. The results of this long-term research will develop significant knowledge about how and where to successfully apply publicly-acceptable harvesting alternatives while using ecosystem management techniques to achieve healthy, sustainable forests. This knowledge will determine how best to meet the goals and targets set out in the Vancouver Island Land Use Plan and other applicable higher level plans.

The Sayward Forest

The southern unit of the Sayward Forest Landscape Unit is an area of high recreational values characterized by an abundance of large lakes. The forest stands are between 40 and 60 years old. This highly uniform age class is the legacy of progressive clearcut logging and forest fires during the 1930s and 40s. Over the ensuing decades, the desire to create a more balanced age class distribution across the landscape has resulted in this area having one of the highest levels of silviculture investment in the province.

The Vancouver Island Land Use Plan proposes that the Sayward be managed for a variety of forest values. Management is directed towards the integration of fish, wildlife, visual, recreation, and tourism values with harvesting and second-growth timber management, as well as the long-term replacement of old-growth forest attributes through active silviculture measures. These management objectives can be achieved using the concepts of ecosystem management.

Silvicultural Treatments for Ecosystem Management

Goals of ecosystem management techniques are to sustain diversity in the structure, composition, and function of entire ecosystems. The STEMS project uses silvicultural systems to create diversity in forest structures that results in a variety of canopy layers (vertical structure) and spatial patchiness (horizontal structure) to enhance biodiversity and wildlife habitat.

Silvicultural systems are defined as planned programs of silviculture treatments designed to achieve specific stand structure objectives during the whole life of the stand. The STEMS project studies seven different silvicultural systems:

- Extended Rotation
- Extended Rotation with Commercial Thinning
- Group Selection
- Patch Cut
- Aggregated Retention
- Dispersed Retention
- Clearcut with Reserve

Within these silvicultural systems, retaining wildlife tree patches (WTPs), individual tree reserves, and riparian reserves maintains elements of forest structure. Retaining these components provides habitat, scenic, biodiversity, or other values for at least one rotation. Temporarily deferred areas can also retain structure, but are deferred from harvest only until the desired forest conditions develop in the existing or adjacent stand.

The STEMS experiment is located in the Snowden Demonstration Forest. The self-guided walking tour is an introduction to this long-term experiment which will provide valuable information about the public perception, economic viability, and forest dynamics of each of these seven different silvicultural systems.



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An Introduction and Self-guided Walking Tour

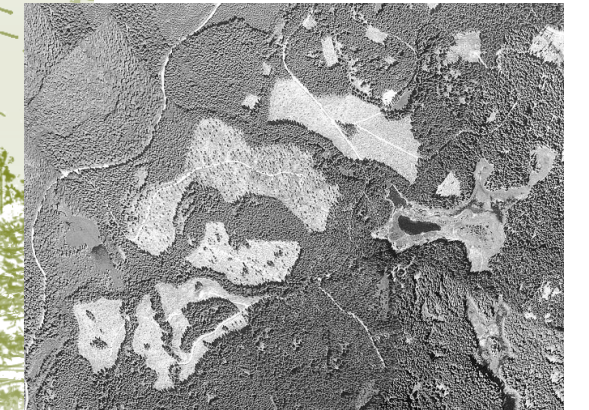
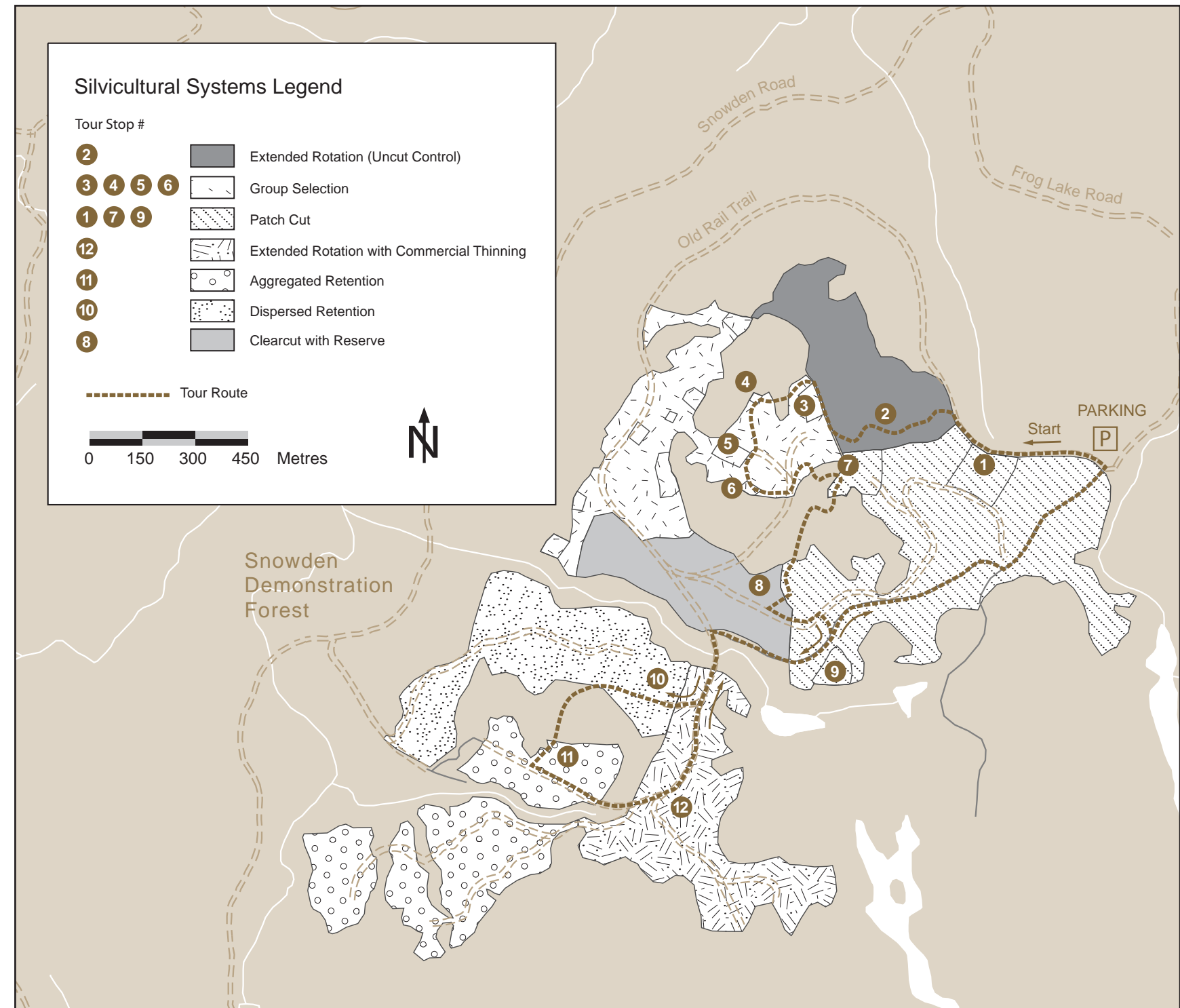


Table 1: Summary Description of Key Features

Tour Stop No.	Silviculture System	Total Volume Removed (%)	Treatment Unit Size (ha)	Opening Size (ha)	Deferred Areas Objective	Retention Structures
2	Extended Rotation (Uncut Control)	0	12	0	Entire area to be deferred from harvest for 80 years	3 ha of adjacent WTPs*
3 4 5 6	Group Selection	19	21.6	11 openings varying in size from 0.06 to 0.5 ha	2.5 ha to be cut every 10 years over 80 yrs	12 ha of adjacent WTPs
1 7 9	Patch Cut	19	35.7	0.7, 1.4, and 1.8 ha	3.5 ha to be cut every 10 years in 0.5-to 2.0-ha openings over 80 yrs	10 ha of adjacent WTPs and individual trees
12	Extended Rotation with Commercial Thinning	46	18.6	Single Trees	350 overstorey and 150 understorey trees per ha over 80 years	5 ha of adjacent WTPs
11	Aggregated Retention	83	25.5	4.4, 6.4, and 11.5	3.2-ha adjacent area temporarily deferred	2.6 ha of internal reserves and 5.5-ha riparian reserve
10	Dispersed Retention	90	18.2	18.2	None	40 trees dispersed per ha and 6 ha of adjacent WTPs
8	Clearcut with Reserve	100	10.9	10.9	None	0.3-ha reserve



* Wildlife Tree Patches