

## Lesson 5

# Developing Pruning Prescriptions

40 minutes

### Objectives:

1. Participants will investigate some potential conflicts in management objectives with pruning projects.
2. Participants will discuss the two pruning scenarios that require a pruning treatment in a silviculture prescription to meet free growing obligations.
3. Participants will become aware of requirements in an SMP that are critical to pruning prescriptions.

### Equipment Needs:

- ▲ overhead projector
- ▲ flip chart
- ▲ *Pruning Guidebook*

### Method:

The instructor reviews several overheads and uses lecturettes and questioning to bring forward relevant points.

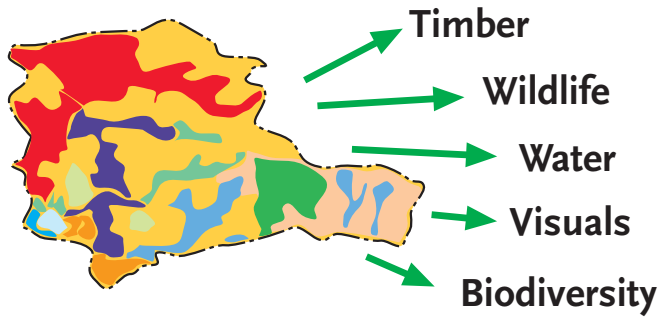
### Note:



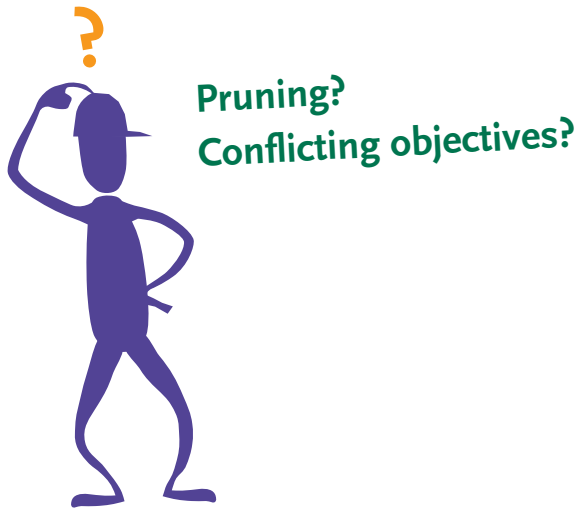
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# Management Objectives and Pruning

## Management Objectives



## Stand Structural Objectives



## **Overhead: Management Objectives and Pruning**

### **Facilitator:**

- ▲ Pruning helps to build the desired structure for the stand. It must fit with all management objectives for the stand.
- ▲ Ask the participants if there could be some potential conflicts between pruning and your various management objectives, and to provide some local examples. Debrief some approaches to avoid conflicts.

### **Key Points**

Potential conflicts? (Most are related to wildlife habitat.)

- ▲ **Ungulate security cover** is reduced or virtually eliminated. This can be avoided by:
  - leaving visual buffers along main and secondary access roads. These can be spaced or unspaced buffers.
  - Consult with MoE staff: you may be able to work out other solutions like managing access through the access management plan.
  - leave some unpruned trees in the stand. You may choose unsuitable stems (smaller stems, deciduous, or poor quality wolf trees).
    - Note:** It may be better to leave these as small unpruned clumps. Partial-pruning with unpruned trees throughout the stand may create a situation where the pruned stems lose height dominance since growth is reduced for 1–2 years. Also, at time of harvest, it may be impossible to sort the pruned from the unpruned logs.
- ▲ **Reduced arboreal lichen production for woodland caribou and mule deer.** If areas have been identified as important mule deer or caribou winter range, consult the forest ecosystem specialist before pruning.
- ▲ **Restricted harvesting in Riparian Management Areas** may reduce the economic feasibility of pruning if you are unsure of recouping your investment in the future.
- ▲ **Aesthetics – may look too artificial and managed** (although this is a benefit with some viewers). You can avoid this in much the same way as you can avoid conflicts with security cover.





**Overhead: SMPs and SPs**

**Facilitator:** Review the key points in the overhead

**Key Points**

**Pruning as an incremental opportunity:**

- ▲ Pruning is generally considered an incremental activity.
- ▲ Prescriptions for pruning will generally be included in an SMP, usually when it is written for the initial juvenile spacing treatment.

**Pruning as a free growing obligation:**

- ▲ There are, however, two occasions when pruning is a free growing obligation (*Operational Planning Regulation*).
  1. Pruning western white pine to control blister rust. (District manager's discretion on pruning Idaho rust-resistant white pine.)
  2. Pruning stands established for wildlife habitat with very low densities.



**Note:** Proposed changes in legislation to give the district manager discretion on pruning trees on lower productivity sites to meet free growing obligations where the volume and value of the timber is marginal (e.g., dry, low productivity sites that will not grow any appreciable large clear wood in a reasonable time frame).



## Pruning White Pine Crop Trees

Normally Pw retained but not counted as a crop tree

Where Pw are to be managed as a crop tree, and if control of white pine blister rust is necessary, the Pw must be pruned to meet free growing requirements.

– *Operational Planning Reg. 51(2)(d)(i)*

### Rationale:

- ▲ to directly remove threatening branch infections
- ▲ to reduce potential infection sites
- ▲ increasing clear wood – secondary objective

**Note:** Proposed change in legislation to give the district manager discretion on pruning rust-tolerant white pine seedlings grown from Idaho seed stock to meet free growing requirements.

**Overhead: Pruning to Control White Pine Blister Rust**

**Facilitator:** Review the key points in the overhead

**Key Points**

- ▲ Throughout its range, western white pine often occurs as a minor component in many southern BC stands.
- ▲ Generally these trees are left during spacing treatments to maintain the white pine gene pool, hopefully helping the tree develop more resistance to the rust.
- ▲ Usually these white pine are not counted as crop trees and are often referred to as ghost trees.
- ▲ **However, where white pine are left as crop trees and counted as a component of the stand and white pine blister rust is a concern, they normally must be pruned to meet free growing requirements.**
  - to directly remove threatening branch infections
  - to reduce potential infection sites.

**Note:** The rust enters through the needles. It is felt that most infections start in the lower crown where conditions seem to be right for inoculation.

- to increase the amount of clear wood on the bole. A secondary objective. If this becomes a main objective, usually a second lift will be planned as an incremental activity.

- ▲ Where blister rust resistant white pine seedlings are planted, pruning will likely not be required, although this will depend on the degree of resistance bred into the seedlings.
- ▲ An SP must include pruning of white pine to consider it as a potential free growing crop tree.
- ▲ Lift #1 – done when the trees are 2.5–4 m tall to a lift height of 1.3 m (dbh)
- ▲ Lift #2 – completed when trees are greater than 5 m tall to a minimum of 2.5 m in height, leaving 50% live crown.





## Pruning Very Open Stands Created for Habitat

Pruning required where minimum stocking is reduced to 30% lower than the guideline.

– *Operational Planning Reg. 51(2)(d)(ii)*

### Rationale:

- ▲ to address clumped stocking in coastal grizzly habitat
- ▲ volume is already compromised
- ▲ do not want to compromise value (high % juvenile wood and knots)

**Note:** Proposed change in legislation to give the district manager discretion on pruning trees on lower productivity sites to meet free growing obligations where the volume and value of the timber is marginal (e.g., dry, low productivity sites that will not grow any appreciable large clear wood in a reasonable time frame).



**Overhead: Pruning Very Open Stands  
Established for Habitat**

**Facilitator:** Review the key points in the overhead

**Key Points**

- ▲ Pruning will be required where stocking is reduced to 30% or greater BELOW the minimum suggested in the guidebook to meet wildlife habitat objectives:
  - The SP will describe the treatment and the pruning will become part of the free growing criteria.
  - As with other basic obligations, licensees will have to pay for this treatment.
- ▲ This regulation was created to address the very open stands created for grizzly bear habitat on the coast and may also apply to very open habitat for deer and elk.
- ▲ It was felt that without pruning, these stands will produce open-grown, extremely low-value wood. Since these sites already are producing volume far below the site potential, the serious loss of value on the remaining stems is a concern.
- ▲ This requirement may not apply to dry belt fir sites below  $SI_{50}$  of 15 m since the returns on such an investment will be very low—the Ministry is currently working on an interpretation of this requirement.
- ▲ While pruning is an expensive treatment, fewer stems will be pruned in such open stands.
  - Where the MSS is normally 700/ha, the stocking would have to be 490/ha or less for this requirement to kick in.
  - Where MSS is 500/ha (as in dry belt fir stands) the stocking would have to be 350/ha or less for the requirement to take effect.
  - The lower cost associated with fewer stems may be somewhat negated on the coast in grizzly range since the brush (grizzly forage) in these open stands may be a serious impediment for pruners.
- ▲ At this point it may be wise to discuss any concerns or experiences that people have had regarding this regulation, since it will likely be a contentious topic.

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# Pruning Prescriptions and SMPs



**B-2 – Stand Level Objectives**  
e.g., 1000 m<sup>3</sup>/ha of 50 cm sawlogs at 90 years

**D – Target Conditions & Strategy**  
e.g., The stand is to be spaced to 700 sph, followed immediately by pruning to 3 m. A second lift to 5.5 m will follow in about 8 years.

**D-1 – Post-treatment Standards**

**E – Treatment Specifics**

e.g., Shears or hand saws only – no chain saws will be allowed.

## **Overhead: Pruning Prescriptions and SMPs**

**Facilitator:** Review the key points in the overhead

1. Have several transparencies of a blank SMP just in case there are other questions regarding the SMP format, etc. You should be familiar with the format (refer to the *Stand Management Prescription Guidebook*). Remember, this is not an SMP training session, so there is little time to discuss the intricacies of the SMP form.
2. Point out that these are the key sections pertaining to a pruning treatment in the SMP.

**Key Points** At this point make sure that all of the following key points are brought forward:

### **Section B-2 – Stand Level Objectives**

- ▲ In section B-2, the management objectives should include the specific end product objectives for the pruned stems. In this example, WINTYPSY was used to get a rough estimate of volume and end product piece size.
  - This objective is for a coastal Douglas-fir stand of SI of 35 and a density of 500/ha. The OAF#1 was set at 10% and OAF #2 at 0.
- ▲ You may have some other objectives for pruning too—wildlife, forest health, fire protection (reduce ladder fuels in dry belt IDF stands), etc. All of these should be entered in the appropriate sections of this form.

### **Section D – Target Conditions and Strategy**

- ▲ Tells the story of the stand. Should describe the pruning treatment and other stand tending treatments in general terms and show how they fit together.

### **Section D-1 – Post-treatment Standards**

- ▲ Shows timing of treatments with measurable parameters listed. The key issues here for pruning are:
  - timing relative to other treatments
  - timing relative to diameter size and height
  - species and stems per hectare to prune
  - minimum lift height by lift (% live crown retention)
  - number of lifts



- ▲ May consider including a maximum diameter as well as the target. So that if the stand goes beyond the maximum, the pruning treatment would be canceled (remember access to funding may be constrained).

**Section E – Treatment Specifics**

- ▲ Shows any specific recommendations that may be incorporated into the Schedule C as clauses in the contract. An alternative would be to write up the clauses in a blank schedule C and staple to the SMP for future reference.

# Pruning Prescriptions and SMPs

## The Window of Opportunity Concept

The image shows a sample Stand Management Prescription (SMP) form. The form is titled "STAND MANAGEMENT PRESCRIPTION" and "OBJECTIVES". It contains several sections with headings such as "1. STAND INFORMATION", "2. STAND MANAGEMENT OBJECTIVES", "3. STAND MANAGEMENT PLAN", and "4. STAND MANAGEMENT MONITORING". Each section has various fields for text entry, checkboxes, and tables. The form is a standard document used for managing forest stands.



Consider including a  
*Pruning Window of Opportunity*  
in Section D-1 (Post-treatment standards).

- ▲ Use an upper limit for diameter beyond which no pruning will occur (e.g., 15 cm).
- ▲ In case funding does not come through in a timely fashion.

**Overhead: Pruning Prescriptions and SMPs:  
Window of Opportunity Concept**

**Facilitator:** Review the key points in the overhead

**Key Points** At this point make sure that all of the following key points are brought forward:

- ▲ In Section D-1 you can add a maximum diameter limit so that the treatment is dropped if funding does not come through in time.
- ▲ This is different than anything that you may include in an SP, because we are dealing with incremental activities that are usually going to be dependent on obtaining an outside funding source.

