

# Lesson 3

# SMP and Project Development Issues

## Considerations to Make your Spacing Project a Success

90 minutes

### Objectives:

1. The participants will be aware of the critical issues for developing an SMP and subsequent contract for juvenile spacing.
2. The participants will discuss and/or develop strategies to address these issues in a manner which will contribute to project success.

### Equipment Needs:

- ▲ Overhead projector
- ▲ Flip chart

### Method:

Mostly small group – “turn to your neighbour” exercises supported by small lecturettes.

The approach is to allow the group to discuss these issues in small groups, then list them on the flip chart, discussing strategies to address each issue. The instructor will ensure certain issues are raised, and selectively introduce lecturettes with relevant overheads, where required.



**Overheads: Introduction to Spacing and the SMP**

**Facilitator:** Introduce this section by emphasizing the relevance of spacing to the SMP. Use four overheads to show a blank SMP form.

**Key points:**

- ▲ Most SMPs are initiated for a spacing project;
- ▲ Often these stands are free growing, just under max density and still need some stocking control;
- ▲ You may wish to prune or fertilize, but want to ensure that the stands are at the optimum density to respond; and
- ▲ May include CT – may not.

**Point out the key sections on the SMP form (FS 68)**

**Section B-1:** show linkages to higher level plans.

**Section B-2:** has boxes to complete for each potential stand management objective.

**Section C:** Information on stand and site features is summarized for each standards unit. A separate sheet like this should be completed for each SU.

**Section D:** The Target Stand by Standards Unit (SU):

This section includes a “story” of the stand that describes in general terms where you are headed with stand structure. Someone reviewing or implementing the SMP can get a good idea what you are doing by reading this first. This section also includes:

- ▲ post-treatment standards, and
- ▲ special area designations.

**Note:** Forest health – see the following overhead.

# STAND MANAGEMENT PRESCRIPTION

FOREST DISTRICT \_\_\_\_\_

SINGLE       MULTI-AREA

<b>MANAGEMENT OBJECTIVES</b>	( ) ORIGINAL      ( ) AMENDMENT	DATE    Y / M / D
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## A. LOCATION

### A-1. GENERAL DESCRIPTION OF AREA

SU	TREATMENT AREA IDENTIFIER (OPENING NO.; CUTBLOCK; TIMBER MARK; OTHER)	NET TREATMENT AREA (ha)

FIELD WORK BY:	DATE COMPLETED:	TOTAL NET TREATMENT AREA (ha)
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## B. MANAGEMENT OBJECTIVES

### B-1. HIGHER-LEVEL PLANS

ARE THESE TREATMENT AREAS WITHIN LOCAL RESOURCE USE, TOTAL RESOURCE, INTEGRATED WATERSHED MANAGEMENT, OR OTHER SPECIFIC PLANNING AREAS?      ( ) YES ( ) NO

ARE ANY OF THESE TREATMENT AREAS WITHIN A COMMUNITY WATERSHED ?      ( ) YES ( ) NO

IF YES:	PLAN NAME	Date		
		Y	M	D

**IF NO:**      CONSULT WITH OTHER RESOURCE AGENCIES TO ASSIST IN DEVELOPING MANAGEMENT OBJECTIVES FOR THE PRESCRIPTION.

SUMMARY OF HIGHER-LEVEL OBJECTIVES FOR THESE TREATMENT AREAS (Please rank specific objectives [1 = highest priority, 10 = lowest]):  
 ( ) Timber ( ) Range ( ) Recreation ( ) VQO ( ) Wildlife Habitat ( ) Biodiversity ( ) Wildlife Trees ( ) Fisheries ( ) Water Quality ( ) Other:

UTILIZE SECTION B2. STAND-LEVEL OBJECTIVES TO CLARIFY, CONFIRM AND SPECIFY MANAGEMENT OBJECTIVES FROM HIGHER-LEVEL PLANS.

### B-2. STAND-LEVEL OBJECTIVES

ANY SPECIAL AREA(S) WITHIN ANY TREATMENT AREAS?      ( ) Yes ( ) No  
 IF 'YES,' PLEASE CLEARLY DELINEATE ALL SPECIAL AREAS WITHIN EACH TREATMENT AREA ON THE APPROPRIATE STANDARDS UNIT MAP:

ARE CURRENT STAND-LEVEL OBJECTIVES AVAILABLE FROM SILVICULTURE PRESCRIPTIONS?      ( ) Yes ( ) No    IF 'YES,' SEE FS 711A.

ARE CURRENT STAND-LEVEL OBJECTIVES STILL APPROPRIATE FOR THESE STANDS?      ( ) Yes ( ) No

USE THIS SECTION TO SUMMARIZE OBJECTIVES FROM HIGHER-LEVEL PLANS OR FOR DEVELOPING OR CLARIFYING STAND-LEVEL OBJECTIVES.

#### TIMBER OBJECTIVES

THESE OBJECTIVES APPLY TO: SU \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

<b>WILDLIFE – HABITAT / BIODIVERSITY / WILDLIFE TREES</b>	STAND-LEVEL ATTRIBUTES/ MANAGEMENT OBJECTIVES
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THESE OBJECTIVES APPLY TO: SU \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

<b>WATERSHED</b>	<b>MANAGEMENT OBJECTIVES</b>		
THESE OBJECTIVES APPLY TO: SU _____			
-			
-			
<b>FISHERIES</b>	<b>MANAGEMENT OBJECTIVES</b>		
THESE OBJECTIVES APPLY TO: SU _____			
-			
-			
<b>RANGE</b>	CATTLE USE? <input type="checkbox"/> Yes <input type="checkbox"/> No	IF 'YES,' RANGE UNIT PASTURE:	
CATTLE PRIMARY ACCESS TRAILS? <input type="checkbox"/> Yes <input type="checkbox"/> No	IF 'YES,' LOCATE ON ATTACHED MAP	SEEDED? <input type="checkbox"/> Yes (Year) <input type="checkbox"/> No	
THESE OBJECTIVES APPLY TO: SU _____			
-			
-			
<b>VISUAL LANDSCAPE (VQO)</b>	LANDSCAPE SENSITIVITY	VISUAL QUALITY OBJECTIVE	
THESE OBJECTIVES APPLY TO: SU _____			
-			
-			
<b>RECREATION</b>	FEATURE SIGNIFICANCE	MANAGEMENT CLASS	
THESE OBJECTIVES APPLY TO: SU _____			
-			
-			
<b>OTHER FOREST VALUES</b>	<b>MANAGEMENT OBJECTIVES</b>		
THESE OBJECTIVES APPLY TO: SU _____			
-			
-			

<b>B-3. PRESCRIPTION APPROVAL</b>			
<b>PREPARATION</b>		<b>PRESCRIPTION REVIEW</b>	
PREPARED BY <i>(SIGNATURE / SEAL-RPF)</i>		MINISTRY OFFICIAL <i>(SIGNATURE)</i>	
PRINTED NAME	DATE PREPARED Y / M / D	DATE REVIEWED	Y / M / D
<b>LICENSEE SIGNING AUTHORITY</b>		<b>FINAL APPROVAL</b>	
SIGNATURE		DISTRICT MANAGER <i>(SIGNATURE)</i>	
PRINTED NAME	DATE SIGNED Y / M / D	DATE APPROVED	Y / M / D



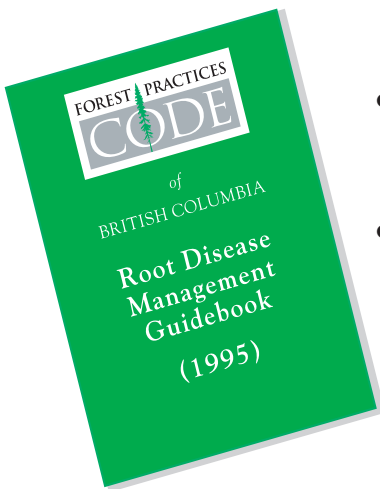


# Forest Health and the SMP

Must calculate incidence by agent

FOREST HEALTH		AGENT OCCURRENCE			
SU	AGENT CODE	AGENT NAME	% INCID.	AREA (ha)	SU
A	DRA	<i>Armillaria ostoyae</i>	4	36	
MANAGEMENT OBJECTIVES					
The objective is to avoid accelerating the spread of the pathogen through stand tending activities. The goal is to keep the % incidence between 5–10% throughout the rest of the rotation.					

**Note:** For any incidence of an agent – refer to the relevant forest health guidebook.



**Example:** *Armillaria* root rot

- 1–5% in a silviculture survey and you must do a formal surey
- 2–5% – alternate treatment level
  - District manager will usually only approve spacing for free growing
  - Pop-up space (high cost)
  - Alternate species (susceptible species must be <20%).



**Overheads: Forest Health and the SMP – Section B-2, pg. 2**

**Facilitator:** Note: Forest health – % incidence information by agent.  
Data are to be collected and calculated as per the recommendations in the *Silviculture Surveys Guidebook*.

▲ The use of the silviculture survey cards (FS 657 and 658) are now suggested just to standardize the collection of information. Use of these cards is probably more important for free growing/pre-stand tending surveys.

▲ **Note:** For any level of forest health agent, refer to the associated forest health guidebook. This is critical!

**Example:** Armillaria root disease (*Root Disease Management Guidebook*):

▲ 1–5% in silviculture survey – must have a formal survey

▲ about 2–5% – alternate treatment level

- generally the DM will only approve spacing for basic obligations to meet maximum density requirements.
- restricted to high-cost, pop-up spacing or alternate species management to try to keep the susceptible species at <20% composition.

**Key points:**

▲ There are some very serious guidelines in these guidebooks that you do not want to miss.

▲ You should temper these recommendations with suggestions from local pathologists – none of this is carved in stone and there is still considerable disagreement as to the correct strategy in every instance (in some cases, the guidebooks are not very clear).

# SMP and the Spacing Contract

The spacing contract must keep the SMP on target.

**STAND MANAGEMENT PRESCRIPTION**  
FOREST DISTRICT  
 SINGLE  MULTI-AREA

MANAGEMENT OBJECTIVES DATE: Y/M/D

**A. LOCATION**

**A-1. GENERAL DESCRIPTION OF AREA**

SU	TREATMENT AREA IDENTIFIER (OPENING NO., OUTBLOCK, TIMBER MARK, OTHER)	NET TREATMENT AREA (ha)

FIELD WORK BY: \_\_\_\_\_ DATE COMPLETED: \_\_\_\_\_ TOTAL NET TREATMENT AREA (ha): \_\_\_\_\_

**B. MANAGEMENT OBJECTIVES**

**B-1. HIGHER LEVEL PLANS**

ARE THESE TREATMENT AREAS WITHIN LOCAL RESOURCE USE, TOTAL RESOURCE, INTEGRATED WATERSHED MANAGEMENT, OR OTHER SPECIFIC PLANNED AREAS?  YES  NO

ARE ANY OF THESE TREATMENT AREAS WITHIN A COMMON WATERSHED?  YES  NO

IF YES: PLAN NAME: \_\_\_\_\_ Y: \_\_\_\_\_ M: \_\_\_\_\_ J: \_\_\_\_\_

IF NO: CONSULT WITH OTHER RESOURCE AGENCIES TO ASSIST IN DEVELOPING MANAGEMENT OBJECTIVES FOR THE PRESCRIPTION

ESPECIALLY HIGHER LEVEL OBJECTIVES FOR THESE TREATMENT AREAS (PLEASE INCLUDE OBJECTIVES FOR:  Riparian  Wetlands  Wildlife  Watershed  Water Quality  Other: \_\_\_\_\_)

USE THIS SECTION TO SUMMARIZE OBJECTIVES FROM HIGHER LEVEL PLANS

**B-2. STAND LEVEL OBJECTIVES**

ANY SPECIAL TREATMENTS WITHIN ANY TREATMENT AREAS?  YES  NO

IF YES, PLEASE INCLUDE IN TREATMENT AREAS WITHIN EACH TREATMENT AREA ON THE APPROPRIATE STANDARDS LHM MAP

ARE CURRENT STAND LEVEL OBJECTIVES AVAILABLE FROM SILVICULTURE PRESCRIPTIONS?  YES  NO

ARE CURRENT STAND LEVEL OBJECTIVES STILL APPROPRIATE FOR THESE STANDS?  YES  NO

USE THIS SECTION TO SUMMARIZE OBJECTIVES FROM HIGHER LEVEL PLANS OR DEVELOP OR CLARIFY STAND LEVEL OBJECTIVES

**TIMBER OBJECTIVES**

THESE OBJECTIVES APPLY TO: SU \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

WILDLIFE - HABITAT DIVERSITY BY WILDLIFE TREES: \_\_\_\_\_ STAND LEVEL ATTRIBUTES: \_\_\_\_\_

MANAGEMENT OBJECTIVES: \_\_\_\_\_

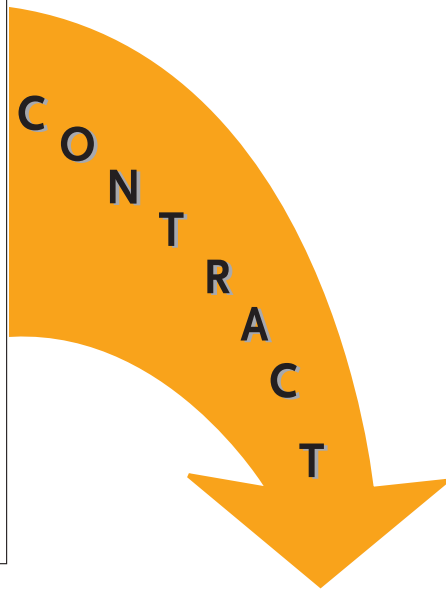
THESE OBJECTIVES APPLY TO: SU \_\_\_\_\_

\_\_\_\_\_

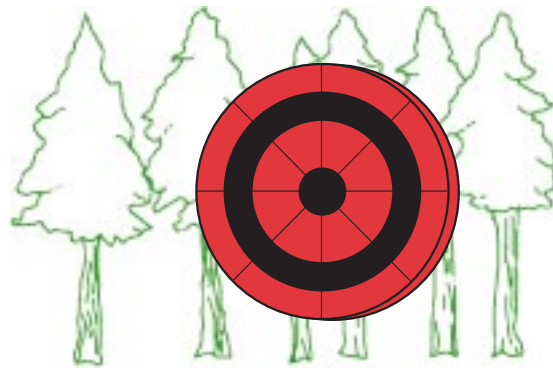
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The contract and the SMP must be closely linked.  
How do you do it?



**Overhead: The SMP and the Spacing Contract**

**Facilitator:** This overhead suggests that the SMP and the spacing contract should be closely linked.

You should expand on this and explain why this is the case.

▲ The SMP often goes beyond spacing and includes considerations for future treatments like pruning or commercial thinning. The spacing contract must closely follow the post-treatment standards in the SMP. If not, the opportunities for these future treatments may be considerably diminished.

▲ The SMP may project a stand strategy that is somewhat complex and the spacing project may be critical to ensuring that the stand gets on the right trajectory for this strategy.

**Question:** How can we ensure this linkage occurs?

Solicit suggestions from the group.



**Key points: You can handle it in one of probably two ways:**

1. Complete the Schedule C with the clauses specific to your project, at the same time as completing the SMP, and append it to the SMP; or
2. Include the clauses as part of section D (target stand conditions and strategy) when you describe the initial spacing treatment in this section.

You may also wish to staple the SMP onto the contract.

**Note:** Several districts are currently appending the Schedule C to their SMPs (Boundary is one of them), and it seems to be working quite well.

# The Structure of Schedule C

 BRITISH COLUMBIA	Ministry of Forests		<b>Silviculture Contract</b>
FOR: Juvenile Spacing			
Silviculture Contract Admin. No. DUD 35 96 022E		Attachment to Contract Dated the 31st day of July, 1995	
<b>Schedule C</b>			
<b>PART 1: Spacing and Density</b>			
a) Inter-tree distance at the edge of a void shall be reduced to 1.1 m.			
b) 10% of the net treatable area will be left unspaced. These areas will be identified on photos and ribboned in the field.			
<b>PART 2: Selection of Crop Trees</b>			
a) The following species are shown in order of preference:			
1. Douglas-fir			
2. Lodgepole pine			
<b>PART 3: Miscellaneous</b>			
a) Slash height shall be left under 0.5 metres			
b) Every third skidtrail shall be kept free of slash, so as not to impede ungulate movement.			





## **Overhead: Considerations for Spacing Prescriptions and Projects**

**Facilitator:** Discussion

1. Ask the participants to turn to their neighbour (optional) and discuss the question on the overhead. Get them to develop a list based on their experience. Small groups of 3–4 are likely best. (20 minutes)

### **Flip chart:**

- ▲ List the responses on the flip chart.
- ▲ Add relevant issues from the list below that are not raised by the group.
- ▲ As these issues are raised:
  - Check the relevancy with entire group.
  - Ask the group to suggest strategies to deal with each issue. Debrief these and list the strategies on the flip chart.
  - Where needed, *use the discussion points and optional overheads included in the following pages* to fully explain the critical issues listed below. Use the *blank SMP overhead* to point out relevant sections.

### **Critical issues:**

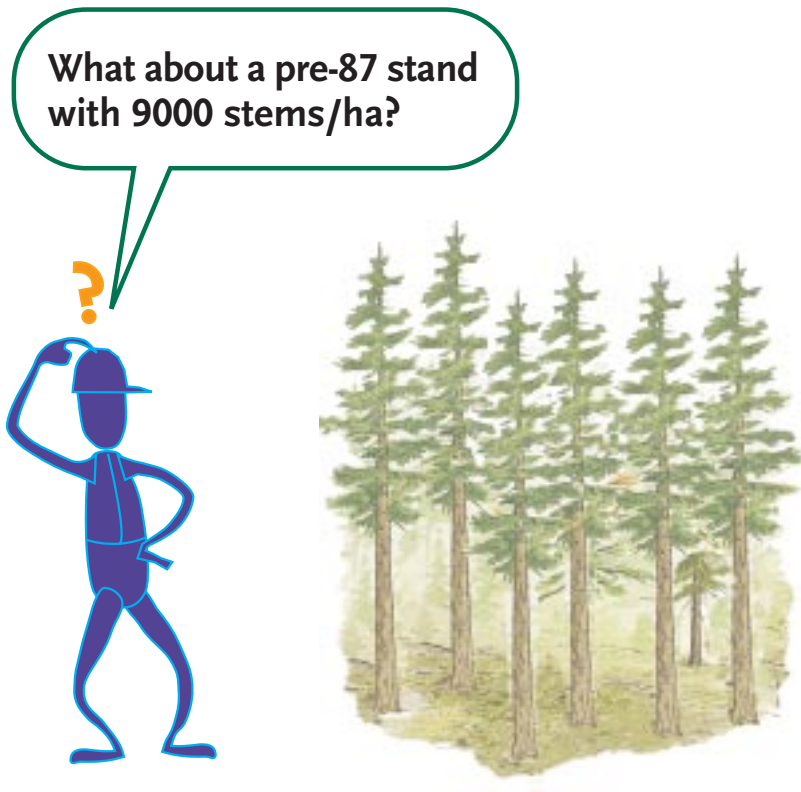
- ▲ Do all spacing projects require an SMP?
- ▲ What is expected for stratification?
- ▲ Do we have to follow a previous SP? (e.g., Can we change the preferred and acceptable species?).
- ▲ Do I need to do anything special if I use wheeled or tracked equipment (e.g., the Hydroaxe for strip spacing or an excavator for pop-up spacing)?
- ▲ How do I address fire management concerns?
- ▲ How broad can you set the range for post-spacing density and inter-tree spacing?
- ▲ How do I deal with multi-storied stands?
- ▲ What about clumped stands?
- ▲ How do I deal with biodiversity?
  - What if no objectives from higher level plans?
  - How do I address wildlife tree patches, riparian areas, or other special areas?

**Note:** Point out to the participants that a handout with discussion regarding many of these critical issues is included in Appendix 3.

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## Do all spacing projects require an SMP?

Legally – only required for stands designated as free growing.



Only spacing?

MoF or licensee conducting work?



**Overhead:** Do all spacing projects require an SMP?

**Facilitator:** Check

**Key points:**

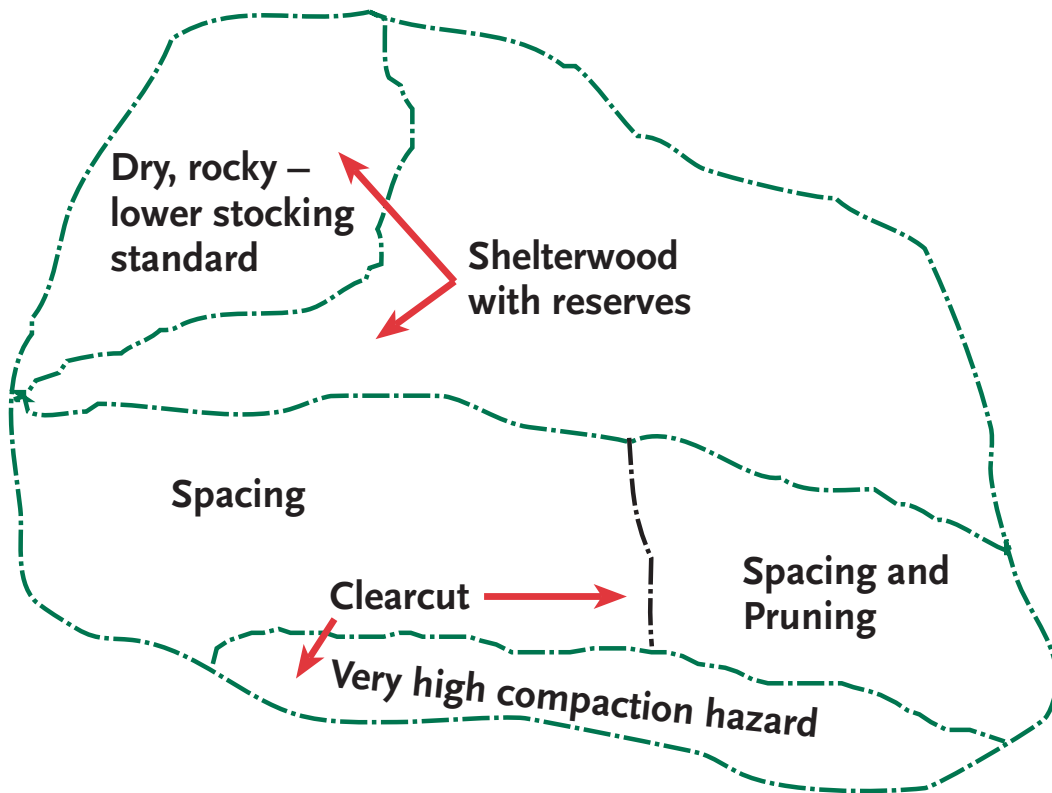
- ▲ SMPs are only **legally** required for stands designated as free growing.
- ▲ Generally, an old PHSP or SP should have been in place (post 87) to define the free growing condition, a free growing survey or walkthrough should have been conducted and a designation made.
- ▲ **What about a stand established pre-87 with 9000 stems/ha?**
  - Pre 87 is a ministry outstanding obligation.
  - An SMP is required by policy.
  - Development of an SMP is strongly recommended as subsequent treatments, such as pruning, fertilization, commercial thinning, may be considered. If so, the SMP is already in place and can be easily amended.
  - **For licensees:** the MoF may require an SMP regardless, as a matter of course, which is quite within their right to do so. Since the licensee will be taking on the spacing voluntarily (as an incremental project), and they are acting as a contractor to the Crown, the MoF can ask them to do this. It will provide the ministry with a better working document.

**Notes:**

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# What is expected for stratification?

Stratify by standards unit (SU) based on:



**Overhead: What is expected for stratification?**

**Facilitator:** Key points:

You must map the block to the site series level. Then you should stratify by standards unit.

▲ Stratify by standards unit (SU) based on:

- preferred species, and/or
- treatment(s) and treatment standards (e.g., post-treatment densities)
- uniform application of a *silvicultural system*,
- *soil conservation standards (when applicable)*.

▲ The SU will form the basis for compliance inspections.

▲ Often, SUs in spacing areas are quite large – but this is not always the case.

**Flip chart: Do we have to follow a previous SP?**

**Facilitator:** Key points

▲ NO – Recommended standards may have changed substantially since the last prescription. The old SP may have only gone to free growing with no further guidance. There also may be new higher level plans that could influence the prescription.

▲ A stand with a recent SP will likely be the easiest to follow; even still, changes can still be made:

**Example:** The stand may have developed in a manner where an *acceptable species in the old SP* is doing better than anticipated and should therefore be included as a *preferred species*.

**Flip chart: Do I need to do anything special if I use wheeled or tracked equipment?**

**Facilitator:** Use the blank SMP overhead to point out the relevant sections.

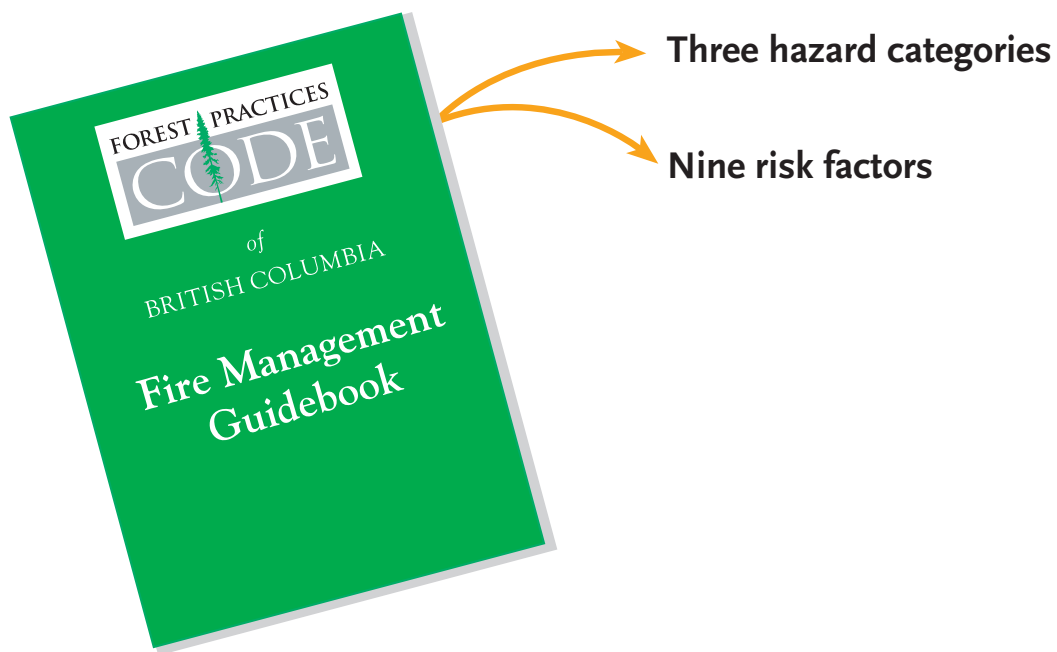
**Key points:**

YES – Just as in the SP for harvesting and site preparation, you must:

- ▲ Complete a field assessment of the site sensitivity to soil disturbance.
- ▲ Determine the Leading Soil Disturbance hazard (LSD) for the site (section C of SMP).
- ▲ Set a max allowable % soil disturbance (Section C of SMP).

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## Fire Hazard and Risk Evaluation Prior to Juvenile Spacing



**Fire hazard:** A function of slash loading.

**Fire risk:** Approximation of the uncertainty that no fires will occur.

**No Overhead: How do I address fire management concerns?**

**Facilitator:** Use the blank SMP to indicate that in Section B-2 in the SMP you are required to:

- ▲ Define the fire hazard post-spacing as low, moderate or high (see the *Spacing Guidebook*).
- ▲ Define the potential fire risk post-spacing.
- ▲ Describe the actions you will take to reduce the risk.

**Overhead: Fire hazard and risk evaluation prior to juvenile spacing – Guidelines 11 – 13 in the *Spacing Guidebook*.**

**Facilitator:**

- ▲ The current data collection procedures for pre-stand tending information provides enough information to assess fire hazard.
- ▲ The *Fire Management Guidebook* (August 1995) defines:
  - three hazard categories; and
  - nine factors that influence risk.
- ▲ You can read these in the guidebook.

**Note:** The guidebook is confusing in the manner in which it interchanges the terms hazard and risk. Remember this:

- **Fire Hazard** is a function of the slash loading after spacing. Basically, the fire potential based on fuel load.
- **Fire Risk** is an estimation of uncertainty that a fire will not occur (similar, but not quite the same as the probability that it will). Risk is related to a number of factors related to people as well as fuels.

**Notes:**

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## Strategies to Reduce Fire Risk from Spacing

### Smaller blocks

### Unspaced buffer strips

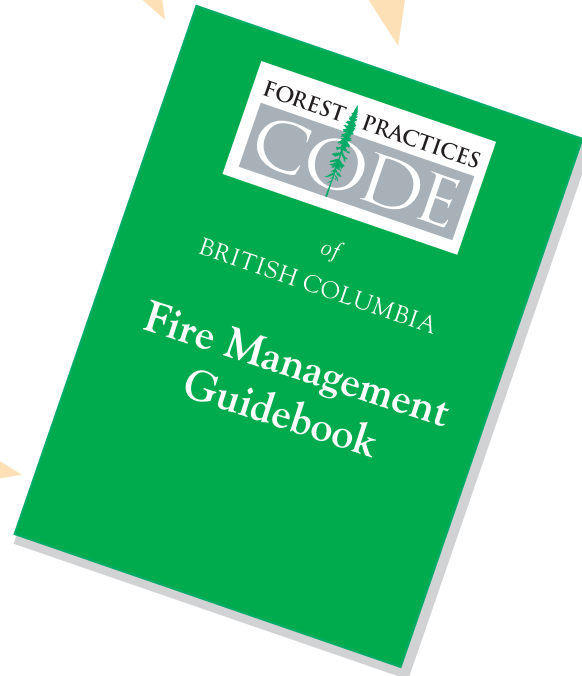
- 20 m (highways and major roads)
- 10 m (lesser travelled roads)

### Fuel modification

- No-slash buffer – pull back to road
- No-slash buffer – pull back to stand
- Retain deciduous
- Buck, lop and scatter
- Others

### Prevention

### Access restriction



**Overhead: Strategies to reduce fire risk from spacing**

**Facilitator:** The aim is to achieve an acceptable level of risk reduction.

Actions may include:

- ▲ Block size – smaller blocks where applicable.
- ▲ Buffer strips along roads – unspaced buffers (wider, the more well-traveled):
  - A 20 m leave strip along highways, main rural roads, and major industrial/recreational corridors.
  - A 10 m strip may be adequate along lesser traveled roads.
- ▲ Fuel modification:
  - Pull back slash to roads (pile and burn) to create a no-slash buffer.
  - Pull back slash into the stand for the same effect.
  - Retain deciduous component or other natural fuel breaks.
  - Chip slash or use for recovery or utilization (firewood, posts, rails etc.).
  - Directionally fall away from roads (often very difficult).
  - Buck, lop and scatter to reduce fuel depths and speed decomposition.
  - Underburn???
- ▲ No spacing allowed – in very high risk areas.
- ▲ Access restriction – deactivate or close roads during high fire danger.
- ▲ Prevention:
  - Space during low fire danger.
  - During high fire danger; post signs, ban campfires, increase patrols, close forest (if fire danger extreme).

**Notes:** Talk to fire centre for local input. Some districts require a certified fire fighter on all spacing contracts.

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## How broad can you set the range for post-spacing density?

**Key:** A range is needed to allow for spacer error and stem selection.

Target	Minimum	Maximum
800 sph	700	900
	↔ +/- 100 sph	
1200 sph	1000	1400
	↔ +/- 200 sph	



Should probably never go beyond +/- 200 stems per ha, but be sure to leave the best trees. If you must go over this range to ensure this, do so.



**Overhead:** How broad can you set the range for post-spacing density?

**Facilitator:** There are some critical considerations here:

The following discussion assumes that you have determined your optimum density for products and other objectives, as previously discussed.

**Key points:**

- ▲ You need a range to allow for some error since the spacer can not be expected to be perfect when only using his calibrated eyes.
- ▲ The maximum and minimums should be multiples of 100 to fit with the plot multiplier and allow for a range of “whole trees” in the plot.
- ▲ The range can be higher with higher densities, but should probably never get beyond +/- 200 stems per ha.

**Examples:**

- Target density = 800 (min = 700, max = 900)
- Target density = 1200 (min = 1000, max = 1400)

**Flip chart:** What about variation in inter-tree spacing?

**Facilitator:** Write this one on the flip chart and ask them what they think.

**Key points:**

- ▲ Inter-tree spacing should fit with the objectives for the stand and the stand and site characteristics.
- ▲ Your focus will rarely be on making your stand uniformly spaced.
- ▲ You want the focus to be on choosing the absolute best trees to utilize the growing spacing and the best growing microsites.
- ▲ You want to leave the trees best suited to meet your management objectives.
- ▲ You do not want spacers cutting quality merchantable trees that will be available to cut in the next harvesting entry.
- ▲ **There should be room for lots of variation when clear and appropriate justification is provided.**
- ▲ You may have different criteria for different species or size categories. **Ask the participants for some examples of this (from their experience).**

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## Examples of Inter-tree Spacing Variations

- Minimum inter-tree spacing is 2.0 m.
- Minimum inter-tree spacing between two layer 2 trees is 0.75 m.
- Minimum inter-tree spacing is 1.5 (or even 1.0).



**Overhead: Examples of Inter-tree Spacing Variations**

**Facilitator:** This overhead is available to demonstrate a range of different inter-tree spacings used under different circumstances. You may or may not wish to use it.

- ▲ Minimum inter-tree spacing between two layer 2 trees (7.5–12.5 cm diameter) is 0.75 m. To allow the spacers to leave two very closely spaced layer 2 trees among mostly layer 3 trees.
- ▲ Minimum = 2.0 for all layer 3 trees – probably a fairly common minimum.
- ▲ Minimum = 1.5 m or even 1.0 m – where there is lots of variation in species, height and quality in the preharvest stand.
- ▲ Leave all conifers of acceptable quality greater than the merchantability limits regardless of spacing.

Refer to Appendix 4 – MoF memo on inter-tree distance and crop tree selection.

Discuss what this memo means. By varying the minimum inter-tree distance, how can we account for selecting and retaining the best crop trees?

# Intent of the Preferred and Acceptable Columns in the SMP

LICENCE NO.	CP	BLOCK	OPENING NO.	DATE	Y	M	D	STANDARDS UNIT of
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D-1. POST-TREATMENT STANDARDS														
Use the table below to enter the schedule of stand-level treatments and appropriate standards. Complete only the relevant columns.														
TARGET				SCHEDULE			STAND STRUCTURAL ATTRIBUTES							
YEAR	AGE / HEIGHT	DBH	LAYER	TREATMENT	AREA ha	SPECIES		TARGET NO. WELL-SPACED / ha	MIN. PREF. WELL-SPACED SPH	MIN. INTER-TREE DIST.	MIN. TOTAL WELL-SPACED SPH	MAX. TOTAL WELL-SPACED SPH	MIN. BA OR VOL.	PRUNE MIN. LIFT HEIGHT
						PREFERRED	ACCEPTABLE							

Preferred	Acceptable
1. Fdi	
2. Lw	
3. Pli	
4. Cw	

Preferred	Acceptable
1. Se	3. Bl (100/ha max.)
2. Pl	

- To allow you to rank your species.

**Overhead:** What is the intent (for spacing) of the preferred and acceptable columns on the SMP?

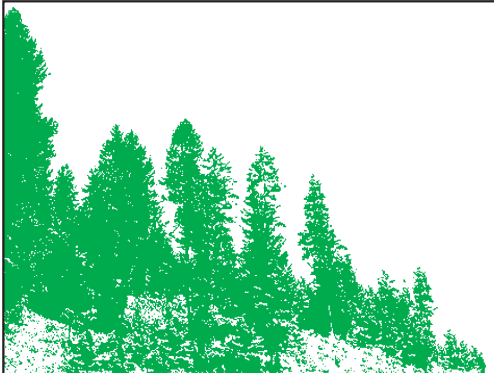
**Facilitator:** These columns were placed here to encourage you to rank species and apply different standards when it is appropriate. This ranking will provide guidance for preference ranking in Schedule C.

- ▲ The term “Preferred” is used to imply what are the best crop tree species for this site.
- ▲ “Acceptable” means, what other tree species on site will make a good crop tree if there are no preferred species available for that microsite.

**Notes:**

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## Multi-storied Stands SMP and Schedule C



Example:

Stand data – Douglas-fir

Layer 1	375 total trees
Layer 2	548 total trees
Layer 3	2314 total trees
Layer 4	2645 total trees

### Considerations for spacing

- Only space layers 2 and 3.
- Occasionally you may have different criteria for the layers.
- What about future thinning/spacing entries in an uneven-aged regime? Should these be in an SMP?

**Overhead:** How do I deal with multi-storied stands in the SMP and Schedule C?

**Facilitator:** Review the example data for the hypothetical stand on the overhead.

Point out that these are typical data for an interior Douglas-fir stand. If you are on the coast, remember, the concepts are the same and the data is probably not far off for some CDF stands.

There is a procedure for using standard silviculture survey cards (FS 657, 658) to gather these data (*Surveys Guidebook*). Also, the MoF has a Windows-based software program available to compile the data.

**Key points:**

You only write in standards for layers 3 and 2 into section D-1 of the SMP since these are the only layers you will be treating under the SMP.

If you anticipate commercial thinning under an uneven-aged regime in the future, which is likely the schedule of thinnings (cutting interval), all of the information associated with the CT (residual basal area, etc.) should be in an SP, either completed previously, or after the SMP.

If no SP was done in the past with acceptable information for future commercial thinning entries, you may set up the future harvesting regime by describing a strategy in the Target Stand Conditions and Strategy Section. However, an SP will still have to be done before the first harvest in the future.

**Note:** You may have different criteria for layer 3 trees compared to layer 2.

▲ Inter-tree spacing may be less for layer 2 to allow you the opportunity to leave larger trees when they are scattered amongst layer 3 – as in a previous overhead.

▲ You may wish to have different post-spacing densities where you have clumps of each layer and perhaps you do not wish to open up one more than the other for some biological reason (e.g., you have very high densities of layer 3 and you fear they may be damaged by snow breakage).

**Notes:**

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## How do I deal with even-aged clumpy stands?

Clumped = well-distributed clumps of SR in NSR matrix



### Naturally clumped

- If NSR >50% of block – do a backlog SP
- If NSR <50% of block – SMP (may prescribe some planting too)

### Cluster planted areas:

- Check original SP to choose plot radius:
  - 5.64 for >100 clusters/ha
  - may be larger for <100 clusters/ha



**Overhead: How do I work with clumpy even-aged stands?**

**Facilitator:** Only use this overhead if it comes up.

There are two situations here:

1. **Naturally clumpy stands** with open areas or mature timber between the clumps.
2. **Cluster planted blocks.** Trees are planted in uniformly spaced clusters or clumps to artificially provide spatial diversity.

The best way to approach this topic is to ask the person who raises the issue which of these two situations applies. Ask them what they would need to do differently in the SMP or contract. There is some guidance below.

▲ **Generally these stands will not need to be treated differently in an SMP and Schedule C** for a juvenile spacing treatment. They can be assessed and treated the same as a more uniform stand, except that a larger assessment plot may be required.

▲ There are a few exceptions to this general statement – see below.

**Naturally clumpy stands**

▲ If the entire block is basically SR, there is no issue. You should be able to collect data and develop your contract specifications as per normal SMP and contract clauses.

▲ What about a pre-87 stand that is clumpy with interspersed small openings of NSR?

- If the NSR openings make up >50% of the block, the area should be prescribed under a backlog SP, not an SMP. Both planting the openings and spacing the clumps may be prescribed under the SP if the clumps are excessively dense. Remember, this is a MoF responsibility – not the licensees, unless they volunteer to take it on.
- Small, but significant patches of NSR in a free growing stand may also be fill-planted as part of an SMP. Remember, this is an incremental activity.

**Cluster planted stands**

These are generally distinctly even-aged, but established in relatively uniformly shaped and spaced clusters to address several objectives including specialized habitat requirements (grizzly bear), and biodiversity (mix of tree/shrub species and development of vertical layers).

▲ The even-aged nature and relative uniform spacing of these stands make them easy to address with normal SMP and contract language. However:

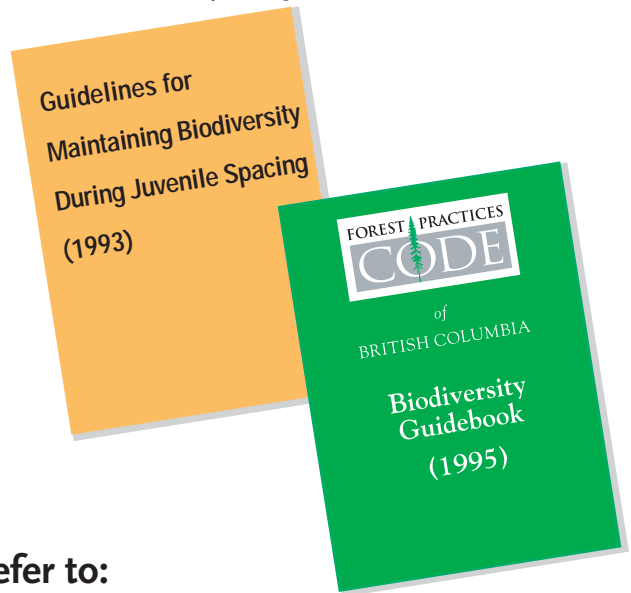
- Check the original prescription for the design of the clusters to choose a plot radius (for pre-stand tending and quality assessment plots) that will adequately reflect the distribution of clusters.
- Use a 5.64 m radius plot for stands with more than 100 clusters per ha.
- A plot radius greater than 5.64 m should be used for stands with less than 100 clusters per ha.

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## How do I approach managing for biodiversity?

Was a previous SP developed under the current FPC requirements?

- If yes – only fine tuning in the SMP
- If no – must develop an SMP considering FPC biodiversity requirements:



Also refer to:

- “ *... Identified Wildlife*” guidebooks
- *Riparian Management Guidebook*
- *SMP Guidebook*
- *Spacing Guidebook*

**Overhead: How do I approach managing for biodiversity?**

**Facilitator:** You should review this section as a matter of course.

Basically, biodiversity should not be approached any differently at the time of SMP development for spacing than during the development of the SP for harvesting.

▲ *If an SP was developed previously under the current Code requirements and guidelines*, consider the objectives and block design for biodiversity. You may have to do some fine tuning.

▲ *If no previous SP was prepared, or the previous SP was not prepared considering the current requirements for biodiversity*, you will have to assess the block and develop a prescription considering the requirements of the *Biodiversity Guidebook*.

**STEPS** where no previous SP in place under the Code:

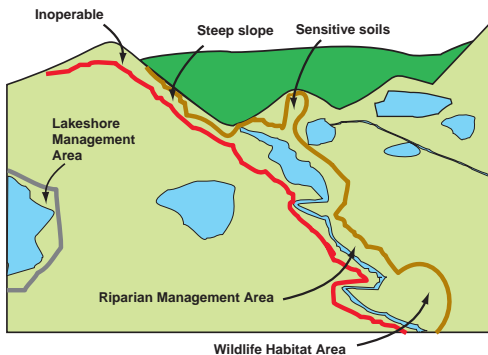
(Refer to: *Biodiversity Guidebook*, and *Guidelines for Maintaining Biodiversity During Juvenile Spacing*.)

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# Steps to Address Biodiversity in SMPs

## A. Project planning

### 1. Consult previous plans

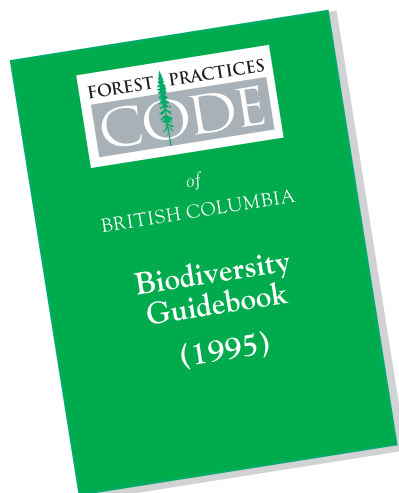


Objectives and locations for:

- identified species
- riparian areas
- wildlife tree patches
- other protected areas.

### 2. Determine the natural disturbance (NDT) and identify:

- Wildlife tree requirements (% of cutblock area)
- Other biodiversity requirements.



Overhead: Addressing Biodiversity in Spacing Projects

A. Project Planning Steps

1. Consult previous planning documents – prescriptions, higher level plans, development plans and other relevant information sources to locate:

▲ Objectives and areas specific to management for identified (feature) species, such as deer or elk winter range, grizzly forage areas, caribou winter range, goshawk nesting areas, spotted owl nesting areas.

– Refer to page 24, *Guidelines for Maintaining Biodiversity during Juvenile Spacing* for examples of the potential influence of such areas.

▲ Objectives and specific locations of other special areas such as riparian habitat, designated wildlife tree patches, and other protected ecosystems.

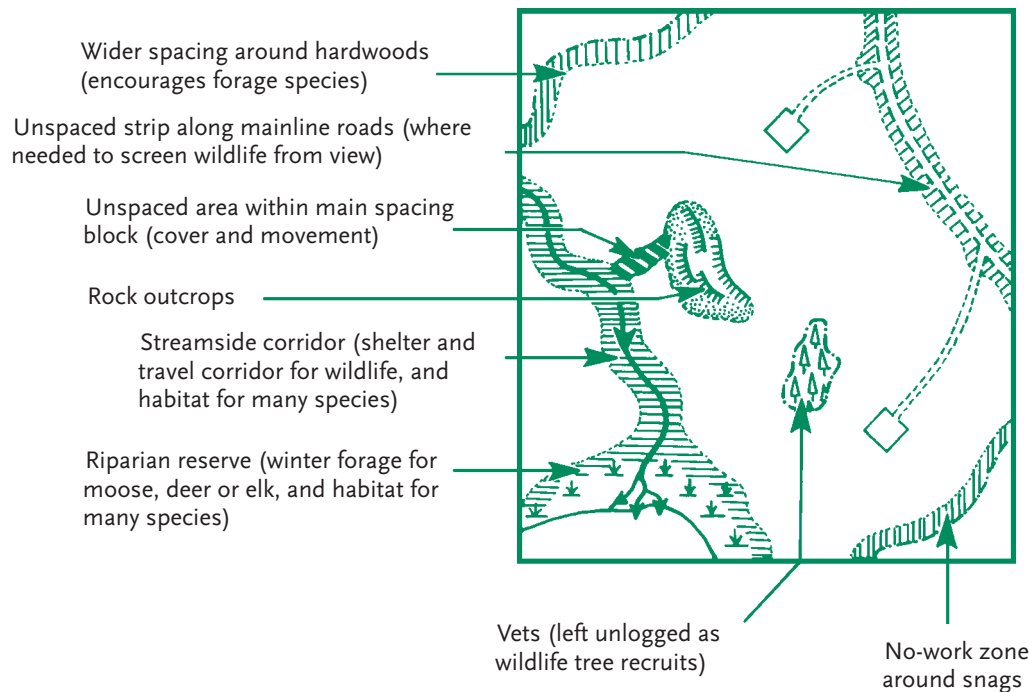
2. Determine the natural disturbance type (NDT) using the *Biodiversity Guidebook*, if not already provided in a landscape unit or higher level plan:

▲ *To determine the % cutblock area required in wildlife tree patches.*

▲ *To determine NDT – specific biodiversity recommendations.*

# Steps to Address Biodiversity in SMPs

## B. SMP and Contract Development



1. During the pre-stand tending survey, locate mappable units for biodiversity:
  - previously identified (e.g., FENS), and
  - previously unidentified (rock outcrops, clumps of vets, etc.).
2. Plan wildlife tree patches, riparian management reserves and other reserves.

**Overhead: Addressing Biodiversity in Spacing Projects**

**B. SMP and Contract Development**

**1. Locate mappable units for biodiversity and identify other reference points** – that can be mapped during the pre-stand tending walkthrough and data collection (FENs, etc.):

- ▲ Streams, lakes, wetlands (classify), wildlife trails, cliffs and rock outcrops (potential denning), clumps of certain tree species, concentrated standing snags, or coarse woody debris, clumps of large old veterans, open forage areas, etc.

**2. Note general stand level attributes** that may be a priority to maintain or enhance – also during the pre-stand tending walkthrough:

- ▲ Woody forage species (willow, saskatoon, elderberry etc.),
- ▲ Deciduous species, and
- ▲ Diversity of vertical layers, etc.

**Flip chart: Ask the participants:**

- ▲ What types of recommendations would they normally include for such attributes in Schedule C of a spacing contract?

**List these.**

- ▲ Point out that in the SMP the management of these attributes should also be explained in section D-Target Stand Strategy for the appropriate SU. Also the treatments should be linked back to the stand level objectives for *Wildlife/Habitat Diversity*.

**3. Plan wildlife tree patches, riparian reserves and other reserves** – just as in an SP, using the *Biodiversity Guidebook*.

# Steps to Address Biodiversity in SMPs

## Planning Wildlife Tree Patches and Other Reserves



### Key Principles:

- Make reserves work for more than one objective.
- Minimize logistical problems for future harvesting.

**D. TARGET STAND CONDITIONS AND STRATEGY**

**D.1. POST-TREATMENT STANDARDS**

Use the table below to enter the objectives of harvest treatments and post-treatment standards. Consider the following questions:

TREATMENT	ACTIVITY	STAND CHARACTERISTICS	STAND CHARACTERISTICS				STAND CONDITION	STAND CONDITION	STAND CONDITION	STAND CONDITION
			Tree	Shrub	Grass	Forb				

**D.2. SPECIAL AREAS**

Describe any management activities that are planned in this area (including treatments and associated clearcutting).

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COPIES	PREPARED BY	DATE	REVISIONS	DATE

### In the SMP Form:

- Include as special areas (Section D-2)
- Include as a separate SU if you want to do a treatment.



**Overhead: Addressing Biodiversity in Spacing Projects**

***Planning wildlife tree patches and other reserves***

**Key principles:**

- ▲ Try to make the reserves work for more than one objective (i.e., wildlife trees and riparian).
- ▲ Try to minimize logistical problems for future harvesting if the reserves will remain beyond that time period (i.e., if you are commercial thinning).
- ▲ In the SMP form:
  - Include these as *Special Areas* (section D-2). Note: no treatments are to occur in special areas. Include as a separate SU if a treatment is to be prescribed.
  - For example, you may want to do some spacing in the RMA to encourage the typical riparian characteristics (diversity of vertical layers, shrubs and deciduous species, etc.). This specific criteria will be included in the contract as well as the SU form in the SMP.

**Note:** You may wish to contact the regional stand tending officer to get an example of a completed map and SMP that captures these ideas well for the area you are presenting in.

# Steps to Address Biodiversity in SMPs

## C. Block Layout



1. Ribbon out all special areas
  - see *Boundary Marking Guidebook*
2. Identify and mark scattered individual wildlife trees.
3. Address potential danger trees

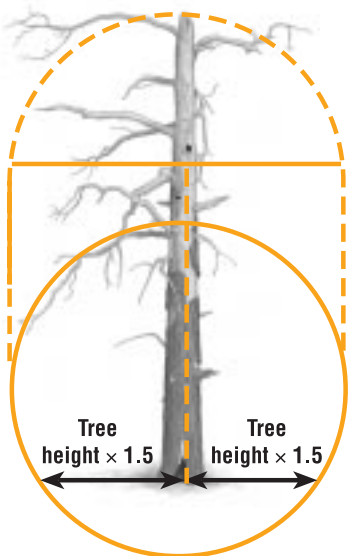
There are two choices:

- Designate as a wildlife tree and mark a “no-work” zone around it.

OR

- Fall the tree with a qualified faller.

You may want to assess the site with a qualified assessor first.



## Overhead: Addressing Biodiversity in Spacing Projects

### C. Block Layout:

3. **Ribbon out all of your designated *Special Areas*** in the SMP. Follow the *Boundary Marking Guidebook* procedures.

▲ For riparian reserve zones beside riparian management zones that will receive some treatment, special “RRZ” ribbon will be required.

▲ Where you wanted to leave, for example, 40% of the block unspaced (perhaps for hiding or thermal cover), reserves should be planned and distributed throughout to best achieve these goals. **These should also be marked.**

4. **Identify and mark individual wildlife trees** that you wish to remain uncut in the work area – non-dangerous snags and other important trees.

▲ Wildlife trees scattered individually throughout the block, outside of WTPs, may be marked for retention if they exhibit many characteristics important for wildlife. These should generally not be excessive in numbers, if WTPs have already been designated where they are the most concentrated.

▲ It may be a good idea to get a qualified wildlife tree assessor to first assess each of the designated individual wildlife trees to determine if a potential risk exists.

5. **Address potentially dangerous snags or trees with dead tops** – in the *Special Area* reserves, along block boundaries, or scattered throughout the stand.

You have **two choices** for trees designated as *danger trees*:

a) **Designate as a wildlife tree and delineate a no-work zone around them** (radius =  $1.5 \times$  the height of the snag or  $1.5 \times$  the height of the dead top).

*Refer to* page 12, *Guidelines for Maintaining Biodiversity During Juvenile Spacing*.

b) **Fall them with a qualified faller** prior to the spacing project.

### Notes:

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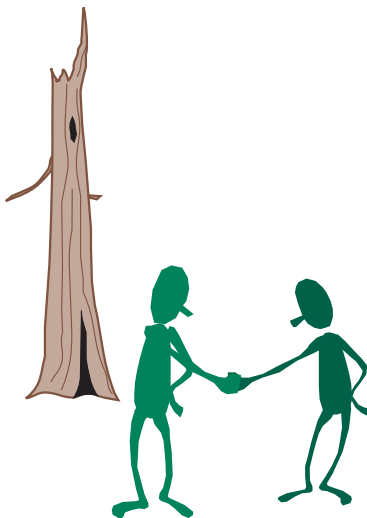
## Steps to Address Biodiversity in SMPs

What if I have to space a large old burn with a *sea of snags*?



This situation poses several problems

- The snags may not be useful for wildlife.
- Excessive no-work zones may mean **NO WORK!**
- Snags may be a bigger hazard if left standing.



You need a strategy.

- Do a broad scale assessment.
- Work with WCB to determine an appropriate mix of:
  - snag falling
  - sound snag retention
  - wildlife trees and no-work zones.

**Overhead: Addressing Biodiversity in Spacing Projects**

***What if I have a large area to space with a sea of snags from an old burn?***

**This situation poses several problems:**

- ▲ The snags may not be useful for wildlife – particularly if they are fire-hardened (depending on their species, size, etc.)
- ▲ No-work zones around each snag will effectively mean NO WORK!
- ▲ The snags may pose a greater threat to worker safety on the ground than standing due to the incredible slash loads with large obstacles for spacers.

**Such a situation requires a strategy to be developed as follows:**

- a) Do a broad scale assessment of the entire area with wildlife tree assessors or other similarly qualified people to get a sense of:
  - The general soundness of the snags, and
  - The usefulness of the snags for wildlife.
- b) Using the results of this assessment, consult with WCB to develop a strategy that satisfies their requirements as well as yours by determining the appropriate mix of:
  - Snag falling,
  - Sound snag retention, and
  - *Wildlife tree* and *no-work zone* designation.

*Notes:*