CANADIAN FOREST PRODUCTS LTD.

Vavenby Division

Forest Vegetation Pest Management Plan

2011 – 2016

Confirmation Number
124-0362-11/16

Prepared by

Canadian Forest Products Ltd.

February 18, 2011

Table of Contents

SECTION 1: INTRODUCTION 1
1.1 Canfor's Pest Management Plan For Silviculture Obligations 1
1.2 Geographic Boundaries of This Pest Management Plan 1
1.3 Responsibility For Vegetation Management 1
1.4 Pest Management Plan Legislation 1
1.5 Role and Term of This PMP 2
SECTION 2: INTEGRATED VEGETATION MANAGEMENT 3
2.1 Introduction 3
2.2 Objectives of Canfor's Integrated Vegetation Management Program 3
2.3 Integrated Vegetation Management (IVM) Process 3
2.3.1 Prevention 3
2.3.2 Pest Identification 4
2.3.3 Monitoring and Post Treatment Evaluation 5
2.3.4 Injury Thresholds and Treatment Decisions 6
2.3.5 Treatment Options and Selection Criteria 8
2.3.5.1 Aerial-Based Herbicide Methods 8
2.3.5.2 Ground-Based Herbicide Methods 9
2.3.5.3 Ground-Based Non-Herbicide Methods – Small Engine 10
2.3.5.4 Ground-Based Non-Herbicide Methods – Hand Tools 10
2.3.5.5 Ground-Based Non-Herbicide Methods – Livestock 10
2.3.5.6 Mechanical Site Preparation 11
2.3.6 Selection of Treatment Method 11
SECTION 3: OPERATIONAL INFORMATION 13
3.1 Procedures For Safely Transporting Herbicides 13
3.2 Procedures For Safely Storing Herbicides 13
3.3 Procedures For Safely Mixing, Loading, and Applying Herbicides 13
3.4 Procedures For the Safe Disposal of Empty Herbicide Containers and Unused Herbicides 14
3.5 Procedures For Responding to Herbicide Spills 14
SECTION 4 ENVIRONMENTAL PROTECTION STRATEGIES AND PROCEDURES 16
4.1 Strategies to Protect community Watersheds and Other Domestic Water Sources 16
4.2 Strategies to Protect Fish and Wildlife, Riparian Areas, And Wildlife Habitat 16
4.2.1 Definitions 16
4.2.2 Pesticide Free Zones (PFZ) 18
4.2.3 Wildlife Habitat Features 18
4.2.4 Riparian Areas 18
4.2.5 Species at Risk 19
4.3 Strategies to Prevent Herbicide Treatment of Food Intended for Human Consumption 19
4.4 Pre-Treatment Inspection Procedures For Identifying Treatment Area Boundaries 19
4.4.1 Cultural Heritage Resources 19
4.4.2 Wildlife Trees, Wildlife Tree Patches or Wildlife Habitat 19
4.4.3 Wildlife Values (Flora and Fauna) 19
4.4.4 Silviculture Techniques and Preventative Measures 20
4.5 Weather Monitoring and Strategies 20
4.6 Procedures for Maintaining and Calibrating Herbicide Application Equipment 20
4.6.1 Aerial Herbicide Equipment 20
4.6.2 Ground Herbicide Equipment 21
SECTION 5: FORESTRY HERBICIDES PROPOSED FOR USE UNDER THIS PMP 22
Appendix 1: Vavenby Division Pest Management Plan Area Map 23

SECTION 1: INTRODUCTION

1.1 CANFOR'S PEST MANAGEMENT PLAN FOR SILVICULTURE OBLIGATIONS

This Pest Management Plan (PMP) describes the integrated vegetation management process used by Canadian Forest Products Ltd. (Canfor) in relation to its silviculture obligations. The PMP is consistent with Canfor's Environmental Policy and Forest Management System. The PMP is to be used by Canfor staff and contractors when assessing and conducting vegetation management treatments, while considering the obligations of the Forest Stewardship Plan and other applicable forest management plan commitments.

A silviculture regimen that involves the potential use of herbicides considers economic, environmental, and social concerns. Canfor's silviculture goal is to establish healthy, well-stocked stands of ecologically suited commercial tree species that recognize the sites' growth potential. Vegetation management is an integral part of meeting Canfor's legal requirements to produce Free Growing stands on its harvested obligations, and Canfor's vegetation management strategy includes using herbicides where appropriate and as permitted by this PMP.

1.2 GEOGRAPHIC BOUNDARIES OF THIS PEST MANAGEMENT PLAN

This PMP applies to the various licences that Canfor Vavenby Division has or manages within the Kamloops Timber Supply Area of the Kamloops Forest Region and within the Headwaters and Kamloops Forest Districts. This area includes any of Canfor's managed openings within TFL 18 and FLA18688 that are identified on the Vavenby Division Integrated Vegetation Management Plan Area Map (Appendix 1).

1.3 RESPONSIBILITY FOR VEGETATION MANAGEMENT

Within Canadian Forest Products Ltd., Vavenby Division, the principal contact for information relating to this Pest Management Plan (PMP) is David Poole, RFT, Operations Coordinator @ (250) 676-9518.

1.4 PEST MANAGEMENT PLAN LEGISLATION

A PMP is a plan that describes:

- A program for managing vegetation populations or reducing damage caused by vegetation, based on integrated vegetation management; and,
- The methods of handling, preparing, mixing, applying and otherwise using herbicides within the program.

The *Integrated Pest Management Act* (IPMA) and the Integrated Pest Management Regulation (IPMR) require pesticides to be used pursuant to the principles of Integrated Pest Management (IPM), which requires the development of a PMP and the use of pesticides in accordance with the terms and conditions of the PMP.

1.5 ROLE AND TERM OF THIS PMP

This PMP shall be in force for a five-year period from the date that the Pesticide Use Notice has been confirmed by the BC Ministry of Environment (MoE).

The PMP ensures the following:

- Legal accountability with the provisions of the IPMA, as well as all applicable federal, provincial and regional legislation;
- The incorporation and use of the principles of IPM; and,
- Public awareness of Canadian Forest Products Ltd., Vavenby Division vegetation management program.

SECTION 2: INTEGRATED VEGETATION MANAGEMENT

2.1 INTRODUCTION

In the context of this document the term Integrated Vegetation Management (IVM) will be used to describe vegetation management using the principles of Integrated Pest Management. Vegetation refers to all plant life including, without limitation, grasses, sedges, forbs, vines, ferns, brush, deciduous trees, and coniferous trees.

2.2 OBJECTIVES OF CANFOR'S INTEGRATED VEGETATION MANAGEMENT PROGRAM

Canfor's integrated vegetation management objective is to prevent competing pest vegetation from causing injury or death, or having an unacceptable negative impact on:

- sites scheduled for planting or fillplanting,
- newly planted seedlings,
- juvenile, commercially valuable coniferous trees, and/or
- vehicle and driver safety along roads used to access forest sites within the area encompassed by this PMP.

While meeting the objectives of sustainable forest management by ensuring healthy and vigorous plantations, Canfor will use herbicides:

- appropriately as a vegetation management tool and seek a balance between social, economic, and environmental values; and,
- in a biologically and ecologically appropriate manner, with treatment strategies based on sound science.

2.3 INTEGRATED VEGETATION MANAGEMENT (IVM) PROCESS

The elements of Canfor's IPM program are:

1. Prevention
2. Pest Identification
3. Monitoring and Post-Treatment Evaluations
4. Injury Thresholds and Treatment Decisions
5. Treatment Options and Selection Criteria

Each of the above IPM elements form an integral part of Canfor's vegetation management program and are discussed in detail below.

2.3.1 Prevention

Canfor employs the following preventative measures to avoid competitive vegetation problems:

- *Early Identification of Brush Prone Sites* – Biogeoclimatic Ecosystem Classification zones and site series known to have high brush hazards are identified in the pre-harvest inspections, and appropriate treatment regimes are scheduled.
- *Use of Improved Seed* – Seed of the highest genetic worth available for the area is used to grow seedlings for planting and fillplanting activities. Seedlings grown from improved seed show faster growth than those grown from wild seed, providing these seedlings with an improved ability to compete with encroaching vegetation.
- *Selection of Appropriate Species* – The selection of species to be grown on a site must be ecologically suited to the site. Pre- and post-harvest ecological classification will provide

guidelines for species selection to maximize seedling performance and minimize the need for brushing treatments.

- *Selection of Appropriate Stock Type* – The physiological characteristics that seedlings possess have a significant impact on seedling establishment and capacity to compete against encroaching vegetation. Small stock types may be appropriate for use on sites with a low competition hazard or other limiting factors, while larger stock types may be appropriate on sites with high competition hazard.
- *Minimizing Regeneration Delay* – Seedlings that are quickly established are more likely to compete successfully with problematic vegetation. Especially on brush-prone sites, seedlings should be planted as soon as possible following harvesting.
- *Maximizing Seedling Performance* – Seedlings that are planted in the best microsite possible and that remain undamaged during the planting process are more likely to compete successfully with problematic vegetation. Guidelines on stock handling to avoid seedling damage and optimizing the quality of planting microsites should be followed during planting activities.
- *Site Preparation* – Site preparation will be conducted, where appropriate, to improve microsites for newly established seedlings by reducing or rearranging slash, ameliorating adverse forest floor, soil, above and below ground vegetation structure, or other site biotic factors.

2.3.2 Pest Identification

A pest, in the context of this PMP, is an organism that limits or eliminates the ability of a seedling crop tree from establishing and/or reaching free growing status. While this could include many kinds of organisms, the focus of this PMP is on plant species.

A fundamental activity in managing competing vegetation is the timely identification of vegetation that has the potential for negatively impacting crop trees. The first step is sound ecosystem classification from which vegetation species can be predicted. This prediction helps plan the most appropriate reforestation strategies that may help to control competing vegetation.

The next step in prompt pest identification is a post harvest site assessment, which is carried out in order to prescribe silviculture treatments. The site is assessed for site limiting factors including frost, drought, aeration, saturation, heavy vegetation competition, soil temperature and stability. Pest identification will also occur in monitoring program described below.

The chief references for the identification of vegetation pests commonly found within the PMP area include:

- *Plants of Northern British Columbia* (Mackinnon, Pojar, and Coupe)
- *Plants of Southern Interior British Columbia* (Parish, Coupe, and Lloyd)
- *Trees, Shrubs, Flowers* (Lyons)
- *Autecology of Common Plants in British Columbia: A Literature Review* (Haeussler, Coates, and Mather)

2.3.3 Monitoring and Post Treatment Evaluation

Post-harvest treatments are implemented and monitored on a formal and informal basis. Canfor monitors and assesses sites using a combination of the following methods.

Monitoring Method and Data Collected	Frequency
Walkthrough - Post Harvest – Walkthrough survey used to confirm ecology classification on the block, and to identify areas where vegetation is expected to become a concern. Results of the walkthrough will guide planting timing, species and stocktype selection, need for site preparation, and scheduling of future treatments and assessments.	Once – after harvesting, prior to planting
Survey - Regeneration Performance – This more intensive type of survey is used on the more heterogeneous sites where it may be difficult to evaluate the performance of planted and natural stock and recommend brushing treatments. Required data collection must be adequate to determine if thresholds are exceeded for brush problems.	Once - 2 or 3 growing seasons after planting
Walkthrough - Regeneration Performance – Informal walkthroughs on more homogenous sites where seedling performance and competition hazard are easier to evaluate. Required data collection must be adequate to determine if thresholds are exceeded for brush problems.	May be scheduled when more information is required for a treatment decision.
Walkthrough - Free Growing Recce - Walkthrough survey used to confirm that block, or specific strata, will meet standards for Free Growing before a Free Growing Survey is undertaken. Data appropriate to determine if thresholds are exceeded for brush problem (if one exists) is collected.	Once – 5-10 growing seasons after planting. Scheduled as needed as survey regime progresses.
Aerial Recce - A site visit from the air and is mainly used to assess crop tree height, density and distribution, as well as brush competition and distribution.	May be scheduled when more information is required for a treatment decision.
Survey - Free Growing - The purpose of the Free Growing Survey is to gather data required to provide confidence and reliance that a free growing stand has been established. Data will be collected to produce a Free Growing report. Data appropriate to determine if thresholds are exceeded for brush problem (if one exists) is collected.	Once - 5 to 15 growing seasons after planting.
Post Treatment Audit – Ground or aerial inspection which collects the following: ➢ Effectiveness of the brushing treatment in controlling the target vegetation. ➢ Effects on any non-target vegetation. ➢ Need for follow-up treatments. ➢ For chemically brushed areas, any impact of herbicide application on "no treatment zones".	Once per treatment year within 12 months of treatment.
Ocular Road Assessment – An ocular assessment of roadside vegetation and its potential impacts to vehicle/worker safety. No official report or data will be collected however pictures will be taken with a description of the location and the potential adverse impacts identified.	Once per treatment year within 12 months of treatment.

2.3.4 Injury Thresholds and Treatment Decisions

Decision Thresholds and Action Levels

With respect to a development and implementation of a *decision protocol* for determining whether or not treatment is required, there are three scenarios to address:

1. Obvious Herbaceous – Vegetation levels are well developed, and crop trees have been established long enough that a response can be assessed with respect to seedling attributes.
2. Predictive Herbaceous – Current vegetation levels may or may not be fully expressed, and/or crop trees have not been established (prior to planting), or have not been established long enough that response can be assessed with respect to seedling attributes.
3. Obvious Deciduous Vegetation Competition – Expressed deciduous competition results in imminent or measurable negative crop tree impact.

Decision thresholds will be different for each of these generalized scenarios, as will treatment objectives.

Scenario 1: Obvious Herbaceous

In this scenario, herbaceous vegetation levels are well developed, and crop trees have been established long enough (1-2 growing seasons) that response can be assessed with respect to seedling attributes. Treatment objectives are to control competing vegetation long enough that crop trees are able to recover from injury, and that crop trees can generate adequate growth to keep ahead of recovering brush levels. The table below provides indicators of both seedling impacts and vegetation indices, and their associated thresholds based on past experience and historical data to be factored into IPM treatment decisions.

Indicators of Injury	How the Thresholds were Chosen	Measure	Threshold Beyond Which Treatment will be Applied
1. Sturdiness Ratio / Height-to-Diameter Ratio (HDR)	Seedlings will react to competition for light by emphasizing height growth rather than putting growth resources into an even balance between height and diameter growth. This will result in high height to diameter ratios, and a tree susceptible to vegetation and snow press. These thresholds are derived from past experience and monitoring.	Seedling Height (cm) *divided by* Root Collar Diameter (cm)	Sx, Fdi > 50 Pl, Bl > 40* > 50% of stems exceeding HDR
2. Vigour	Seedlings will react to competition for light in ways that can be visually categorized into seedling vigor classes. Thresholds indicated are derived from past experience and monitoring.	1 - Poor 2 - Fair 3 - Good	All Species: > 50% in Class 1 or 2
3.Vegetation Index: Comeau's Index**	A commonly used vegetation index is Comeau's Index, which is a measure of total density of vegetation multiplied by vegetation height divided by crop tree height.	sum (% cover of brush species x height) *divided by* (tree height)	> 80
4. Crop Tree Status	Status of a crop tree with respect to height and density of competing vegetation will impact the degree with which the seedling is being affected.	1 - Overtopped 2 - Threatened 3 - Above Brush	All Species – > 50% of trees in 1 or 2

* Sx = Interior hybrid spruce, Fdi = Interior douglas-fir, Pli = Lodgepole pine, Bl = Subalpine fir

**Comeau's Index (CI) is a simple index that measures the competition for sunlight with regards to crop trees. CI is calculated as the sum of the products of cover and height for all non-crop species within a 1.26 meter radius around a crop tree, divided by crop-seedling height. CI shows that growth declines with increases in competition index. There is a very rapid decline in growth as CI increases from 0 to 100. At CI=100, growth is approximately 60% of that of a seedling growing free from competition. At a CI=150, seedlings receive 30% of the full sunlight in midsummer and would achieve approximately 45% of potential growth rates (Comeau, 1993).

Scenario 2: Predictive Herbaceous

In scenario 1, the response cannot be assessed with respect to seedling attributes because current vegetation levels are not fully expressed, seedlings have *not* been established (prior to planting or fill planting), or established long enough. Treatment objectives focus on maintaining current seedling vigor prior to injury; specifically on sites where (if left untreated) we forecast that vegetation competition will overtop seedlings and cause injury. This is a predictive scenario, whereby observed data from past treatments and site ecology are integrated to make treatment decisions before crop tree injury occurs. In general terms, ecological classification forms a starting point for hazard ratings for forest vegetation establishment.

Brush hazard ratings associated with biogeoclimatic ecosystem classification (BEC) applicable to the Vavenby Division are as follows:

Biogeoclimatic Zone, Subzone and Variant	Site Series									
	01	02	03	04	05	06	07	08	09	10
ESSF wc2	mod	low	low-mod	mod	mod	high	very high	high		
ESSF vc	high	low	mod	high	high	mod				
ESSFdc2	mod	low	low	low-mod	mod	mod	mod	mod	low	
ICHmw3	mod	low	mod	low	mod	high	high	high	mod	
ICHwk1	mod	low	low	low	high	very high	high	high		
ICHmk2	mod	low	low	mod	high	mod				
ICHmk3	mod	low	mod	mod	high	very high	very high			
ICHvk1	high	nil	mod	mod	very high	very high				
SBS mm	med	low	low	mod	mod -high	high	high	mod	mod	
SBS dw1	mod	low	low	low	mod	mod	mod	mod	mod	
IDFmw2	low	low	low	mod	low					
IDFxh2	low	nil	low	low	low	mod	mod	low		

Ecology classed as moderate, high, or very high may need treatment based on the predictive herbaceous scenario. The ecology classification is then combined with local knowledge of treatment responses and site-specific attributes. Treatment is conducted in this scenario prior to injury; therefore, shorter-term brush control is often acceptable, as crop trees do not have to first recover from injury. These proactive treatments result in lower injury thresholds, avoiding repetitive silvicultural treatments. The thresholds are described in the following table:

Indicators	Cause	Measure	Threshold
1. Brush Hazard by BEC Association	Based on local knowledge of treatment responses, observed data from surveys, and Biogeoclimatic Ecosystem Classification (BEC), we are able to predict which site types have likelihood of requiring brushing treatments. This is combined with the indicators below to prescribe treatment.	See Table above	Moderate, High to Very High brush hazard rating
2. Vegetation Index (Comeau's)	See Comeau's Index description under Scenario 1. For a site preparation decision where no tree data exists, use 26 cm (target height for Sx 512 2+0).	sum (% cover of brush x height) / (tree height)	> 80
3. Indicator Species	Prediction of vegetation development potential is aided by consideration of species present at the time of assessment. Presence/absence of a narrow list of species in early brush development provides an indication of likelihood that brushing will be required.	Visual	Presence of devils' club, soopollalie, birch leaved spirea, Sitka valerian, red-osier dogwood,Vaccinium spp, Ribes spp, Rubus spp, ceanothus, elderberry, thimbleberry, false azalea, Saskatoon, mountain ash, fireweed, rhododendron, bracken and lady ferns

**: This list identifies the primary indicator species and should not be considered exhaustive or limiting manual or herbicide treatments to these species.

Scenario 3: Obvious Deciduous Vegetation Competition

For the purpose of this scenario, "deciduous vegetation" refers to Trembling aspen, Cottonwood, Alders, Willows, Maples, and Birches.

Treatment objectives for this scenario are the release of crop trees from competition of deciduous species. Definition of thresholds is more difficult for this scenario as some densities and distributions of deciduous may not be harmful to the stand, whereas others may be deleterious. Specific thresholds with respect to treatment of deciduous are difficult to prescribe and must be measured against *legal silviculture obligations.* The following threshold provides a guide:

> Without treatment, Free Growing obligations will not be met because the distribution of deciduous species results in a stand > 1.0 contiguous hectare with less than the prescribed minimum well-spaced stocking standard due to the relative height rule (that is, the deciduous species is encroaching upon the *effective growing space* of the crop tree). Without treatment, Free Growing obligations will not be met.

The impact that deciduous trees have upon the crop tree when it encroaches with the *effective growing space* has been subject to much discussion, and includes the extent to which deciduous competition is considered to be *deleterious*. This PMP uses current practices as per the obligations and definitions pertaining to a "Free Growing Tree" as described in stocking standards found in the current Forest Stewardship Plan. If the free growing definition should change to accommodate a different proportion of deciduous stems, this PMP's thresholds will be adjusted accordingly.

2.3.5 Treatment Options and Selection Criteria

2.3.5.1 Aerial-Based Herbicide Methods

<table>
<tr><th colspan="2">Herbicide - Helicopter Methods</th></tr>
<tr><td colspan="2">Helicopter Discretionary - Non-continuous, discretionary application of herbicide across portions of areas within a cutblock. Equipment includes a helicopter with low-pressure boom with conventional or high volume nozzles. Varying glyphosate application rates possible.</td></tr>
<tr><td colspan="2">Helicopter Broadcast - Continuous application of herbicide across all or a portion of areas within a cut block. Equipment includes a helicopter with low-pressure boom with conventional or high volume nozzles. Varying glyphosate application rates possible.</td></tr>
<tr><th>Benefits</th><th>Limitations</th></tr>
<tr><td>➢ Highly effective control over a number of years
➢ Little to no contact of herbicide to workers
➢ Lowest cost brushing method
➢ Able to treat slashy, steep ground more safely than a ground treatment.</td><td>➢ Less selective than other methods.
➢ Stringent application constraints
➢ High public profile
➢ Intensive preparation and follow up
➢ Mature leave trees limit use of this method.
➢ Visual quality affected for a number of years
➢ Technically demanding</td></tr>
<tr><td colspan="2">Rationale for Selecting Treatment Method in PMP –We have not found a more effective, cost efficient method for vegetation control, and we have found this method to be the safest in regards to workers on the ground.</td></tr>
</table>

2.3.5.2 Ground-Based Herbicide Methods

Herbicide - Backpack Methods	
Backpack Discretionary - Non-continuous, discretionary application of herbicide across portions of areas within a cutblock. Equipment includes low-pressure backpack sprayer with adjustable nozzles. Varying glyphosate application rates possible.	
Backpack Broadcast - Continuous application of herbicide across all or a portion of areas within a cut block. Equipment includes low-pressure backpack sprayer with adjustable nozzles. Varying glyphosate application rates possible.	
Benefits	**Limitations**
➢ Effective control over a number of years. ➢ Can treat on blocks with lots of mature standing leave trees. ➢ Can be applied with more precision, and applicator can be more "selective" than a helicopter. ➢ Little or no buffer zone required protecting PFZ.	➢ Stringent application constraints ➢ Intensive preparation and follow up ➢ Effectiveness diminishes as height of brush increases. ➢ Needs a very high level of supervision and layout. ➢ Higher potential of worker exposure to herbicide. ➢ Safety concerns with wearing heavy equipment on rough terrain.
Rationale for Selecting Treatment Method in PMP –This method is a key tool, and is especially useful in areas that have lots of leave trees and herbaceous brush.	
Herbicide - Brushsaw Methods	
Cut Stump - Non-continuous, discretionary application of herbicide onto cut surfaces of target vegetation only. Equipment generally includes a brushsaw with a user-controlled herbicide attachment that applies herbicide beneath the surface of the cutting blade. Varying glyphosate application rates possible but are much lower rates than Aerial and Backpack methods.	
Benefits	**Limitations**
➢ Effective control over a number of years preventing re-sprouting of target vegetation. ➢ Much bigger treatment window versus other herbicide treatment methods. ➢ Little or no buffer zone required protecting PFZ. ➢ Very little herbicide exposure to workers. ➢ Uses less herbicide on a given area (reduced application rate)	➢ Stringent application constraints ➢ Intensive preparation and follow up ➢ Needs a very high level of supervision and layout. ➢ Safety concerns with wearing heavy equipment on rough terrain. ➢ Expensive equipment required.
Rationale for Selecting Treatment Method in PMP –This method is a good tool for blocks that have high numbers of leave trees or numerous water bodies with primarily broadleaf competition, and shows good effectiveness in preventing re-sprouting of aspen.	
Herbicide – Basal Bark	
Basal Bark – Non-continuous, discretionary application of herbicide onto surfaces of target vegetation only.	
Benefits	**Limitations**
➢ Effective control over a number of years. ➢ Can treat on blocks with lots of mature standing leave trees. ➢ Can be applied with more precision, and applicator can be more "selective" than a helicopter. ➢ Little or no buffer zone required protecting PFZ.	➢ Stringent application constraints ➢ Intensive preparation and follow up ➢ Needs a very high level of supervision and layout. ➢ Higher potential of worker exposure to herbicide. ➢ Safety concerns with wearing heavy equipment on rough terrain.
Rationale for Selecting Treatment Method in PMP –This method is a good tool for blocks that have high numbers of leave trees or numerous water bodies with primarily broadleaf competition, and shows good effectiveness in preventing re-sprouting of aspen. Treatment does not immediately increase slash level in treatment area.	
Herbicide – Roadside Brushing	
Roadside Brushing – Broadcast application of herbicide onto target vegetation for control of brush along roadsides, to improve visibility and safety for road users. Typically applied using a truck- or ATV-mounted sprayer.	
Benefits	**Limitations**

➢ Increases road safety by improving visibility ➢ Cost-effective control for a number of years	➢ Relatively limited by access, depending on equipment availability and choice ➢ Stringent application constraints ➢ Needs a high level of supervision ➢ Higher potential of worker exposure to herbicide. ➢ Moderate public profile
Rationale for Selecting Treatment Method in PMP –This method is a good tool for controlling vegetation along roadsides, namely where there are safety concerns due to poor visibility from encroaching vegetation.	

2.3.5.3 Ground-Based Non-Herbicide Methods – Small Engine

Non-Herbicide – Brushsaw Method	
Manual Brushing – Worker cuts target vegetation with a brushsaw or chainsaw.	
Benefits	**Limitations**
➢ No herbicide use. ➢ Public acceptance ➢ Can be applied selectively ➢ Can be used in riparian areas or pesticide free zones	➢ Re-sprouting of target species, may require re-treatment ➢ Safety hazards associated with saws, exhaust fumes, and repetitive motion injuries. ➢ High treatment cost. Expensive equipment required. ➢ Relative short window for treatment (after leaf out to end of July). ➢ Not effective on herbaceous brush.
Rationale for Selecting Treatment Method in PMP - Can be effective if crop trees are taller and not suppressed (but will not make "Free Growing")	

2.3.5.4 Ground-Based Non-Herbicide Methods – Hand Tools

Non-Herbicide – Girdle	
Manual Girdling – Worker uses hand-girdling tool and removes a continuous strip of bark around individual stems, eventually (2-3 years) killing the trees.	
Benefits	**Limitations**
➢ No herbicide use. ➢ Public acceptance. ➢ Can be applied selectively. ➢ Low cost hand tools so workforce can gear up easily.	➢ Re-sprouting, may require multiple treatments. ➢ High treatment cost due to low productivity. ➢ Cannot use for herbaceous. ➢ Repetitive strain injuries common.
Rationale for Selecting Treatment Method in PMP - Can be effective if crop trees are taller and not suppressed (but will not make "Free Growing")	

2.3.5.5 Ground-Based Non-Herbicide Methods – Livestock

Non-Herbicide – Sheep	
Sheep Grazing – 1-3 shepherds guide a herd of sheep (1,000 – 1,500 head) through areas where they eat target vegetation.	
Benefits	**Limitations**
➢ No herbicide use. ➢ Not constrained by weather conditions.	➢ Moderate to high amounts of damage to crop trees (especially Pli and Fdi and any species in June) ➢ High treatment cost. ➢ Can only use for certain herbaceous species and only provides a couple months of control. ➢ Can only use on good access, flat blocks with low to no slash. ➢ Need a group of blocks in close proximity to make a "program". ➢ Risk of disease spread to wild ungulate populations. ➢ Potential damage to pesticide free zones and riparian areas from herd. ➢ Risk of predation.
Rationale for Selecting Treatment Method in PMP - Only other realistic option to herbaceous treatment if herbicide cannot be used.	

2.3.5.6 Mechanical Site Preparation

Non-Herbicide – Mechanical Site Preparation	
Mechanical Site Prep – Creating improved microsites for reforestation where site limiting factors might inhibit seedling performance, for example soil temperature, soil moisture, competing vegetation, or physical barrier (slash loading)	
Benefits	**Limitations**
➢ No herbicide use. ➢ Public acceptance. ➢ Increased soil temperature	➢ Temporary brush control ➢ Expensive ➢ Access limitations ➢ Possible soil compaction and rutting ➢ Potential for surface erosion ➢ High visual impact ➢ Site constraints – slope, slash, duff layer depth
Rationale for Selecting Treatment Method in PMP – Creates favourable microsites and achieves temporary brush control	

2.3.6 Selection of Treatment Method

Treatment method selection is complicated by a number of factors including treatment efficacy, treatment cost, physical constraints, legal constraints, political constraints and concerns from other users of the land and resources.

Where a treatment is warranted, it is important that the chosen strategy is effective in addressing the target species and is cost effective. This is complicated by constraints such as access to the site (e.g. road access with truck vs. quad vs. helicopter), geography of the site (e.g. 15% slope vs. 60% slope), and other site constraints such as slash loading, residual trees, wildlife and water concerns.

Legal and political constraints will influence treatment selection. Legal constraints must be addressed and accommodated within all strategies. Political constraints may come from a number of sources. These constraints may be identified through a number of avenues, for example public consultation, regulatory agencies, Forest Stewardship Plan processes, and Land and Resource Management Plan processes.

Due to the complexity of issues that may influence a treatment decision, this PMP does not attempt to create a treatment decision matrix that may exclude or that may apply extraneous constraints upon a treatment decision. If efficacy, cost, and operational constraints were to be the leading indicators of a treatment decision matrix, herbicide methods would likely be the leading treatment choice. However, employing the principles of integrated pest management minimizes the requirement to treat problem vegetation. The integrated pest management strategy starts prior to harvest, is carried through the site preparation and planting stages and is acted upon through monitoring and vegetation treatment strategies.

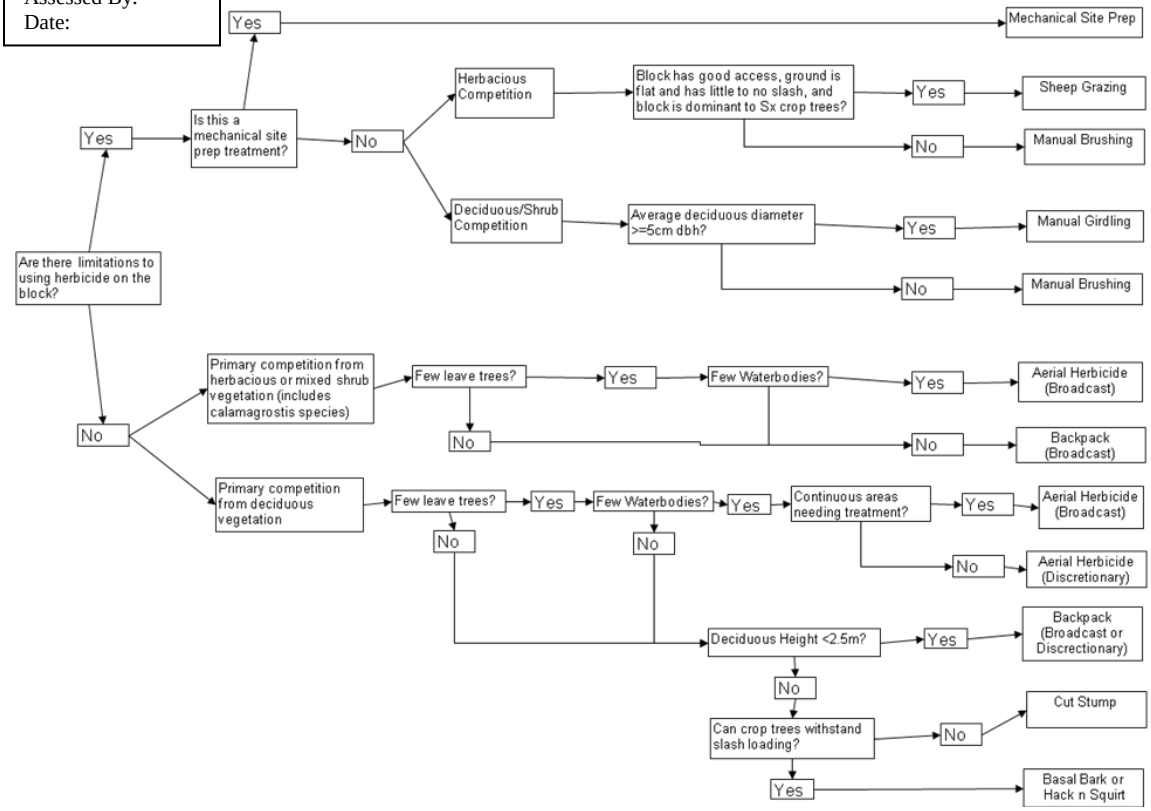
The flowchart below describes the process guideline for selecting a brushing method in Canfor Vavenby. This process is greatly simplified and the actual treatment choice may be different than below with a stated rationale.

For roadside brushing, treatment options are limited. Where feasible, chemical applications may be used as they provide a longer window of control and therefore maximize safety. A truck-mounted sprayer or backpack treatments will be used. In pesticide free zones or other sensitive areas (e.g. unstable slopes), manual brushing will be used.

Brushing Method Selection Model

Use this model to select the most suitable brushing method. Circle the final choice. Add any coments to rationalize treatment choice.

License:
CP/Block:
Assessed By:
Date:



Limitations to using herbicide on the block may include: specific SP requirements, wildlife habitats (i.e. nests, dens identified on block), ungulate winter ranges, stakeholder limitations, pesticide free zones, old growth management areas, and other limitations specified in higher level plans.

NOTE: This model is a guide to help determine brushing treatments; factors such as block location, size of treatment area, terrain issues (i.e. slope, slash levels), and cost should also be considered when reaching a final brushing treatment decision.

SECTION 3: OPERATIONAL INFORMATION

3.1 PROCEDURES FOR SAFELY TRANSPORTING HERBICIDES

The federal *Transportation of Dangerous Goods Act* (TDGA) and the *Integrated Pest Management Act* regulate the transportation and handling of poisonous substances, which may include some herbicides.

The following procedures will be followed while transporting herbicides for application under this PMP:

- Limited amounts of herbicide concentrate will be carried in any one vehicle. The quantity will be no more than what is necessary for each project.
- Herbicide concentrate will only be carried in a secure lockable, signed compartment.
- Herbicide concentrate will only be transported in original labeled containers.
- Herbicide concentrate will always be carried separately from food and drinking water, safety gear, and people.
- Spill containment and clean up equipment will be carried separately from herbicides but in close proximity to the herbicide on each vehicle during herbicide transport and use.
- Appropriate documents such as operations records and material safety data sheets (MSDS) will be carried in each vehicle during herbicide transport and use.

3.2 PROCEDURES FOR SAFELY STORING HERBICIDES

Herbicides will be stored in accordance with the *Integrated Pest Management Act* and Regulations and the WorksafeBC document "Standard Practices for Pesticide Applicators". In summary, the storage area must:

- be ventilated to the outside atmosphere;
- be locked when left unattended;
- restrict access to authorized persons;
- be placarded on the outside of each door leading into the facility in which the herbicides are stored bearing, in block letters that are clearly visible, the words "WARNING – CHEMICAL STORAGE – AUTHORIZED PERSONS ONLY".

In addition, the person responsible for the storage area shall notify the appropriate fire department of the presence of herbicides on the premises.

Some contractors may store herbicides for extended periods of time in vehicles when performing herbicide treatments for Canfor. The vehicle is considered a mobile storage unit. Persons responsible for the herbicide storage shall ensure that all herbicides are stored in a locked canopy, or similar arrangement, separate from the driver and personal protective equipment.

3.3 PROCEDURES FOR SAFELY MIXING, LOADING, AND APPLYING HERBICIDES

All mixing, loading and application of herbicides shall be carried out by certified pesticide applicators in the appropriate category of certification. General procedures and precautions include:

- Mixing of herbicides must always be conducted in a safe manner.
- Safety spill kits, spill response plans and first aid supplies shall be present on or near the treatment site.
- Eye wash station(s) and protective clothing as recommended on the respective product labels shall be available on or near the treatment site.

- Product labels and Material Safety Data Sheets will be available on or near the treatment site to ensure that quantities of herbicides being mixed and used are consistent with label rates.
- There shall be no mixing or loading of herbicides within 15 metres of sensitive environmental features (i.e. riparian management areas as described in the *Forest and Range Practices Act* and non classified waterbodies).
- Ensure that the application equipment is in good working order and, if required, is calibrated to conform to the application rates on the pesticide label.
- Implement precautions to prevent unprotected human exposure to pesticides.
- Implement precautions to ensure that domestic water sources, agricultural water sources and soil used for agricultural crop production are protected for their intended use.
- Ensure that, to prevent treatment of watercourses, the suction hoses used for herbicide(s) will not be used to pick up water from natural sources such as streams or ponds. The intake of water for mixing will be protected from backflow into the natural source by an "air gap" or "reservoir" between the source and the mixing tank.

3.4 PROCEDURES FOR THE SAFE DISPOSAL OF EMPTY HERBICIDE CONTAINERS AND UNUSED HERBICIDES

Empty containers shall be disposed of in accordance with the manufacturer's instructions as noted on the product label or provincial instructions and recommendations that are detailed in the BC Ministry of Environment document Handbook for Pesticide Applicators and Dispensers (1995). As a minimum, empty herbicide containers shall be:

- returned to the herbicide distributor as part of their recycling program; or,
- triple rinsed or pressure rinsed, then altered so they cannot be reused; and,
- disposed of in a permitted sanitary landfill or other approval disposal site.

Unused herbicides will be stored at the herbicide distributor's warehouse or another approved facility.

3.5 PROCEDURES FOR RESPONDING TO HERBICIDE SPILLS

Spill treatment equipment shall be at or near storage (including mobile storage) mixing and loading sites, and it shall include the at least following:

- Personal protective equipment
- Absorbent material such as sawdust, sand, activated charcoal, vermiculite, dry coarse clay, kitty litter or commercial absorbent
- Neutralizing material such as lime, chlorine bleach or washing soda
- Long handled broom, shovel, and waste-receiving container with lid

A copy of an approved spill response plan shall be at or near each work site. All personnel working on a project involving herbicides should be familiar with its contents. If contractors that work under this PMP have their own spill response plan, it must meet or exceed the requirements as described in Canfor's Emergency Preparedness and Response Plan, generally described below:

- All personnel shall be protected from herbicide exposure by wearing appropriate protective clothing and safety gear;
- Any person exposed to a herbicide shall be moved away from the place of the spill;
- First aid should be administered, if required;
- The source of the spill should be stopped;

- The spilled material should be stopped from spreading by creating a dam or ridge;
- The project supervisor shall ensure operations cease until the spill is contained and the source is repaired;
- Absorbent material shall be spread over the spill, if applicable, to absorb any liquid;
- The absorbent material shall be collected in garbage bags or containers with the contents clearly marked;
- Contaminated soil or other material will be removed from the spill site and placed in garbage bags or containers;
- The person responsible for the project shall contact an approved representative of Canfor for shipping instructions and disposal requirements;
- When more than five kilograms of product of herbicide is spilled on land, or any amount into a waterbody, the person responsible for the project will immediately report it to the Provincial Emergency Program by telephoning 1-800-663-3456 or, where that is impractical, to the local police or nearest detachment of the RCMP and an approved representative of Canfor will be notified of the details related to the spill as soon as is practical by the Contractor project supervisor.

SECTION 4 ENVIRONMENTAL PROTECTION STRATEGIES AND PROCEDURES

All vegetation management activities intended for use within this PMP will incorporate measures designed to protect the following:

- Strategies to protect community watersheds, and other domestic water sources
- Strategies to protect fish and wildlife, riparian areas, and wildlife habitat
- Strategies to prevent herbicide treatment of food intended for human consumption
- Pre-treatment inspection procedures for identifying treatment area boundaries
- Procedures for maintaining and calibrating herbicide application equipment
- Procedures for monitoring weather conditions and strategies for modifying herbicide application methods for different weather conditions and

In this PMP, Canfor based the size of its pesticide-free zones (PFZ) and no treatment zones (NTZ) on the standards currently contained in the *Integrated Pest Management Act* and Regulations.

4.1 STRATEGIES TO PROTECT COMMUNITY WATERSHEDS AND OTHER DOMESTIC WATER SOURCES

There are no community watersheds in the IPMP area.

A Pesticide Free Zone (PFZ) will be established around any other established community watersheds that may be developed during the term of this PMP to ensure that the integrity of the watershed is maintained. The area of the PFZ will comply with the standards set at that time.

Pursuant to section 71 of the Integrated Pest Management Regulation, a 30 m no-treatment zone will be implemented around any water supply intake or wells used for domestic or agricultural purposes, including water for livestock or for irrigation of crops. Where Canfor is made aware of domestic water sources the information is tracked spatially, this information will be utilized when developing treatment plans.

4.2 STRATEGIES TO PROTECT FISH AND WILDLIFE, RIPARIAN AREAS, AND WILDLIFE HABITAT

4.2.1 Definitions

The following definitions are taken from the Integrated Pest Management Regulation, the Forest Planning and Practices Regulation, the *Forest and Range Practices Act*, the *Wildlife Act*, and/or the Government Actions Regulation. Refer to these Acts and Regulations for further information.

“Body of water” does not include a human-made, self-contained body of or structure for water.

“Stream” means a watercourse, including a watercourse that is obscured by overhanging or bridging vegetation or soil mats, that contains water on a perennial or seasonal basis, is scoured by water or contains observable deposits of mineral alluvium, and that

a) has a continuous channel bed that is 100m or more in length, or
b) flows directly into
   i. a fish stream or a fish-bearing lake or wetland, or
   ii. a licensed waterworks

“Wetland” means a swamp, marsh, bog, or other similar area that supports natural vegetation, that is distinct from adjacent upland areas

"Classified wetland" means a wetland as described in the Forest Planning and Practices Regulation section 48 (1) and (2)

"Fish stream" means a watercourse that

a) is frequented by any of the following species of fish:
   iii. anadromous salmonids;
   iv. rainbow trout, cutthroat trout, brown trout, bull trout, Dolly Varden char, lake trout, brook trout, kokanee, largemouth bass, smallmouth bass, mountain whitefish, lake whitefish, arctic grayling, burbot, white sturgeon, black crappie, yellow perch, walleye or northern pike;
   v. a species identified as a species at risk
   vi. a species identified as regionally important wildlife, or

b) has a slope gradient of less than 20% unless the watercourse
   vii. does not contain any of the species of fish referred to in paragraph (a),
   viii. is located upstream of a barrier to fish passage and all reaches upstream of the barrier are simultaneously dry at any time during the year, or
   ix. is located upstream of a barrier to fish passage and no perennial fish habitat exists upstream of the barrier

"Wildlife" means

a) vertebrates that are mammals, birds, reptiles, or amphibians and are prescribed as wildlife under the *Wildlife Act*,
b) fish from or in the non-tidal waters of BC, including
   i. vertebrates of the order Petromyzoniformes (lampreys) or class Osteichthyes (bony fishes), or
   ii. invertebrates of the subphylum Crustacea (crustaceans) or phylum Mollusca (mollusks), and
c) invertebrates or plants listed by the minister responsible for the administration of the *Wildlife Act* as endangered, threatened, or vulnerable species,

and includes the eggs and juvenile stages of these vertebrates, invertebrates, and plants.

"habitat" or "wildlife habitat" means the air, soil, water, food, and cover components of the environment on which wildlife depend directly or indirectly in order to carry out their life processes

"wildlife habitat feature" may be identified by the minister responsible for the *Wildlife Act* as habitat of with the following characteristics and is considered to require special management that has not otherwise been provided for under regulation:

a) a fisheries sensitive feature
b) a marine sensitive feature
c) a significant mineral lick or wallow
d) a nest of
   i. a bald eagle,
   ii. an osprey,
   iii. a great blue heron, or
   iv. a category of species at risk that is limited to birds
e) any other localized feature that the minister responsible for the *Wildlife Act* considers to be a wildlife habitat feature

4.2.2 Pesticide Free Zones (PFZ)

"Pesticide Free Zone" means an area of land that must not be treated with pesticide and must be protected from pesticide moving into it.

Water bodies are identified, pre-harvest, in conjunction with the development of Silviculture Prescriptions, Site/Exemption Plans, or Site Level Plans. Herbicide layout contractors conduct a treatment area reconnaissance to identify water bodies post-harvest.

A 10m PFZ will be maintained along all water bodies, dry streams and classified wetlands, except:

- Glyphosate may be applied up to 2 m from the high water mark, if:
  - (i) the body of water or classified wetland is not fish bearing at any time of the year and
  - (ii) selective application (including cut stump and hack & squirt) methods are used between 2m and 10m above the high water mark.
- Glyphosate may be applied up to but not below the high water mark, if the body of water is:
  - (i) a temporary free-standing body of water,
  - (ii) not a classified wetland or wildlife habitat feature, and
  - (iii) not fish bearing and does not drain into a fish bearing body of water within 100m.
- Glyphosate may be applied to a temporary free standing body of water if the body of water is:
  - (i) either smaller than 25 m^2 or not a wetland,
  - (ii) not a wildlife habitat feature, and
  - (iii) not fish bearing and does not drain into a fish bearing body of water within 100 m.

Glyphosate may be applied to a dry S-5 or S-6 stream if the dry stream is not a wildlife habitat feature and not fish-bearing when wet.

Riparian Reserve zones will be treated as Pesticide Free Zones and their integrity will be maintained through the establishment of a no-treatment zone of a sufficient distance to ensure the maintenance of the RRZ.

4.2.3 Wildlife Habitat Features

Wildlife Habitat features are identified pre-harvest and are managed through approved Silviculture Prescriptions, Site Plans, Forest Stewardship Plans, and/or Sustainable Forest Management Plans. Wildlife Habitat Features found in the Canfor Vavenby operating area include:

- Mule Deer Ungulate Winter Range,
- Caribou Ungulate Winter Range

The application of herbicides will be consistent with the protection measures stated in those operational plans. Observation of wildlife habitat features post-harvest will be reported to Canfor representatives, and where necessary, site-specific protection measures may be implemented.

4.2.4 Riparian Areas

Riparian features are identified pre-harvest and are managed through approved Silviculture Prescriptions, Site Plans, Forest Stewardship Plans, and/or Sustainable Forest Management Plans. The application of herbicides will be consistent with the protection measures stated in those operational plans.

4.2.5 Species at Risk

Canfor is certified under several forestry certification brands, and the application of herbicides under this PMP will be consistent with the protection measures stated in our Sustainable Forest Management Plan.

Canfor has developed annual training for staff and contractors for assistance in proper identification of at risk species and plant communities found within Canfor's operating areas. Observation of species at risk post-harvest will be reported to Canfor representatives, and where necessary, the observations will be reported to the Ministry of Environment and site-specific protection measures may be implemented.

4.3 STRATEGIES TO PREVENT HERBICIDE TREATMENT OF FOOD INTENDED FOR HUMAN CONSUMPTION

Canfor shall attempt to locate areas where there is food grown for human consumption and take the appropriate precautions during vegetation management operations to avoid treatment of these areas. Such precautions may include providing increased buffer zones around these areas during herbicide applications, timing applications, or using non-chemical methods of vegetation management. Signs will be posted at all entrances to the treatment site to meet regulatory requirements (as per Sec 64(1) of the Integrated Pest Management Regulations).

Herbicide will not be stored or transported in the same compartments as human food.

4.4 PRE-TREATMENT INSPECTION PROCEDURES FOR IDENTIFYING TREATMENT AREA BOUNDARIES

A pre-treatment inspection will be completed on all treatment sites by the contractor and/or Canfor supervisor to identify treatment area boundaries and the presence of the general public, grazing wildlife and livestock. During this inspection, sensitive areas such as bodies of water and no treatment zones are noted on maps. The contractor is instructed to follow the bagging/flagging requirements as depicted on the treatment layout map.

During the pre-work discussion, contractor representatives shall be instructed in the bagging/flagging requirements and precautions, and review the methodology and procedures for applications and handling of the herbicide.

No treatment is to proceed until it is confirmed there is no presence of the general public and there is no visible grazing wildlife or livestock in the treatment area.

4.4.1 Cultural Heritage Resources

Cultural Heritage resources are identified pre-harvest and are managed through approved Silviculture Prescriptions, Site Plans, Forest Development Plans, or Forest Stewardship Plans. The application of herbicides will be consistent with the protection measures stated in those operational plans.

4.4.2 Wildlife Trees, Wildlife Tree Patches or Wildlife Habitat

Refer to section 4.2, Strategies to Protect Fish and Wildlife, Riparian Areas, and Wildlife Habitat

4.4.3 Wildlife Values (Flora and Fauna)

Refer to section 4.3, Strategies to Prevent Herbicide Treatment of Food Intended for Human Consumption

4.4.4 Silviculture Techniques and Preventative Measures

Refer to section 2.3.1, Prevention Program

4.5 WEATHER MONITORING AND STRATEGIES

Measurements will be made to record weather conditions prior to treatment, at the end of treatment and in between treatment if there has been a change in site or weather conditions. The following items will be recorded for foliar treatment methods:

- Wind speed and direction
- Relative Humidity (RH)
- Presence of frost or dew
- Precipitation
- Temperature
- Sky conditions (clear, overcast, cloudy, partly cloudy)

The following table describes strategies for modifying application according to changing weather conditions:

	Temp.	Thick Dew or Frost on Leaves	Wind Speed (km/hour)	Relative Humidity (%)	Rain, Inversion, Fog	Freezing Conditions
Aerial Foliar (conventional)	**>26.5 C No Spray**	**No Spray**	**>8 No Spray**	**<40 No Spray**	**No Spray**	**No Spray**
Aerial Foliar (low drift)	**>30 C No Spray**	**No Spray**	**>8 No Spray**	**<35 No Spray**	**No Spray**	**No Spray**
Backpack, Foliar	**>26.5 C No Spray**	**No Spray**	**>10 No Spray**	**<40 No Spray**	**No Spray**	**No Spray**
Cutstump, Hack and Squirt					**No application if raining**	**No Application**
Basal Bark					**No application if stem is wet**	**As long as snow is below treatment height**

4.6 PROCEDURES FOR MAINTAINING AND CALIBRATING HERBICIDE APPLICATION EQUIPMENT

The application contractor shall ensure that the application equipment is in good working order and, if required, is calibrated to conform to the application rates on the pesticide label. Proper calibration is very important to ensure herbicide is not under or over applied.

4.6.1 Aerial Herbicide Equipment

All equipment shall be calibrated prior to commencing operations for that season. Proof of this calibration for aerial applications and the swath kit analysis shall be kept by the treatment contractor for at least 2 years.

Maintenance of the spray equipment is the responsibility of the application contractor. The contractor shall have qualified personnel on each spray site who will ensure the equipment conforms, at all times, to the manufacturer's standards.

4.6.2 Ground Herbicide Equipment

The application contractor shall calibrate equipment used for backpack applications. Equipment should be calibrated:

- for each individual applicator using hand-held or backpack equipment,
- at the beginning of each season
- at the start of each treatment job
- any time the application equipment is changed
- for each change in size or type of nozzle
- any time the herbicide or formulation of a herbicide is changed

A maintenance person, designated by the application contractor, must conduct maintenance and repairs. The maintenance person must be knowledgeable in the operation and repair of the equipment. The equipment operation must conform to the manufacturer's specifications.

Records will be kept by contractors for each piece of calibrated equipment for a minimum of 2 years.

SECTION 5: FORESTRY HERBICIDES PROPOSED FOR USE UNDER THIS PMP

Herbicides proposed for use within the scope of this PMP are registered for forestry use under the Pesticide Control Products Act. They have been deemed safe when applied according to the instructions outlined on their labels.

The herbicides listed below are proposed for use within the context of this PMP for vegetation control.

Herbicide Trade Name	Active Ingredient	Application			Pesticide Control Products Act #
		Usage	Aerial	Ground	
Vision, Vision Max Vantage Forestry, Weed-Master	glyphosate	common	yes	yes	19899, 27736, 26884, 29009
Release, Garlon RTU	triclopyr	new	no	yes	22093, 29334

The most common herbicide used in forestry is glyphosate. It is selected for its low toxicity and high efficacy in treating competing forest vegetation. When applied at relatively low rates, it effectively manages competing forest vegetation species without significant damage to coniferous trees.

Appendix 1: Vavenby Division Pest Management Plan Area Map

A more detailed map is available by contacting Canfor Vavenby at the contact information provided on page 1