

COVER LETTER

FOREST DEVELOPMENT PLAN

Period¹ (2005-2009)

Forest District: South Island

Khowutzun Forest Services Probationary Community Forest Agreement

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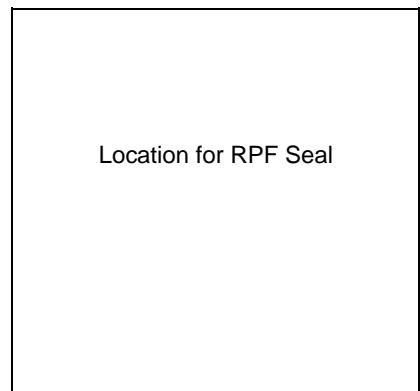


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INTRODUCTION

Cowichan Tribes signed an Interim Measures Agreement (IMA) in February 2001 with the Provincial and Federal governments. One component of the IMA was an invitation to the Cowichan Tribes community to submit an application for a Community Forest Pilot Agreement (CFPA) of 10,000 m³ per year.

The Community Forest Pilot Agreement (CFPA) is to be for a five year trial period, at which point Cowichan and the BC government will evaluate the CFPA and determine whether to proceed with a long-term community forest agreement. An application for the CFPA was submitted by Cowichan Tribes in June of 2003.

The Probationary Community Forest Agreement (PCFA) was awarded to Khowutzun Forest Services (KFS) in December 2004. The allowable annual cut is 10000 m³ per year. This AAC will remain in effect until another new AAC is determined, which must take place within five years.

Khowutzun Forest Services Ltd. does not own or operate a timber processing facility at this time.

This Forest Development Plan (FDP) has been prepared by Khowutzun Forest Services Ltd. in accordance with the Forest Practices Code Act of British Columbia and the Operational and Site Planning Regulation. The FDP outlines proposed harvesting and road building activities. This FDP is for the probationary period of the PCFA starting in May 2005.

The area under this Forest Development Plan is identified on the FDP key map. On the 1:10,000 scale FDP maps the area under the plan is identified by the red boundary. The area under the plan includes the entire area of the KFS PCFA. The PCFA is located in the South Island Forest District approximately 10 km west of Duncan and 10 km east of Lake Cowichan on the south side of the Cowichan River. The PCFA is bordered to the north by Cowichan River Provincial Park and to the south by private forest land owned by Weyerhaeuser. Access to the area is by Highway 18, Skutz Falls Road, and the Holt Creek Forest Service Road. The PCFA is located entirely within the traditional territory of the Cowichan Tribes.

There has been some harvesting in recent years in the area under the plan. Most of this has been through the Ministry of Forests Small Business Forest Enterprise Program (now B.C. Timber Sales). There are also two blocks expected to be harvested soon by Northwest Hardwoods. These are shown on the FDP maps but are not included in the PCFA. The PCFA is also included in the area under the plan for the 2002 to 2007 Forest Development Plan for Forest License A49541 (Weyerhaeuser – Northwest Hardwoods).

There is a significant road network in the area at present. It is accessed from the Holt Creek Forest Service Road.

This FDP references sections of the Forest Practices Code Act that have been repealed. This FDP is prepared under section 188 of the Forest and Range Practices Act (FRPA) which governs the preparation of Forest Development Plans during the transition period.

1.1 Referral Summary (to be completed with the final submission)

Activity	Date (yyyy/mm/dd)	Location (and media with respect to Public Review)	Comments received Y/N	Date (yyyy/mm/dd)
Submission of FDP				
MOF	March 21, 2005	South Island Forest District, Port Alberni, B.C.		
Government Agency Referrals				
MWLAP	March 21, 2005	2080A Labieux Road, Nanaimo, B.C. V9T 6J9		[Date]
MSRM	March 21, 2005	2080A Labieux Road, Nanaimo, B.C. V9T 6J9		
Cowichan Valley Regional District	March 21, 2005	175 Ingram Street, Duncan, B.C.		
First Nations Referrals				
Cowichan Tribes	[Date]	Duncan, B.C.		[Date]
Other Referrals				
Weyerhaeuser		South Island Timberlands, 1825 Timberlands Road, P.O. Box 75, Cassidy, B.C. V0R 1H0		
Public Review				
Advertising	March 20 & 27	Cowichan News Leader		[Date]
Public Viewing Forum(s)	March 30	Quw'utsun' Cultural Centre, 200 Cowichan Way, Duncan, B.C.		[Date]
Comments Deadline (60 days from the date of first publication, <i>unless otherwise extended</i>)	May 21/05			[Date]
Proposed Agency Meeting(s)				
[List]	[Date]	[Location]		[Date]
Final Submission for approval (if necessary)	[Date]	[Location]		[Date]
Expected Approval	[Date]	[Location]		[Date]

1.2 Referral Process

The PCFA is located entirely within the traditional territory of the Cowichan Tribes. The Cowichan Tribes is part of the Hul'Qumi'num Treaty Group.

The draft FDP has been developed in consultation with the following Cowichan Tribes Committees:

- The Cowichan Tribes Forest Sector Committee.
- The Cowichan Tribes Forest Sub Committee of the Environment and Resource Committee.

2. STRATEGIC PLANS

2.1 Higher Level Plans

2.1.1 List of Higher Level Plans

On December 1, 2000 the Vancouver Island Higher Level Plan came into effect. The Higher Level Plan (HLP) was established to implement and enforce objectives from the approved Vancouver Island Summary Land Use Plan (VISLUP) that are incremental or at variance with the Forest Practices Code (FPC). The HLP order established Special Management Zones where timber harvesting is to be carried out with special consideration of specified non-timber values.

The FDP blocks are located within the following management zones of the VISLUP:

Land Use Zone	Unit	FDP blocks
General Resource Management Area	34 E&N South	All FDP blocks

Under Section 10(1)(d) of the FPC Act a FDP must be consistent with any higher level plan covering the area of the FDP.

2.1.2 Measures to Address Higher Level Plan Objectives

General Resource Management area objectives will be achieved by implementing standard FPC management approaches.

2.2 Other Plans

Areas adjacent to (or within) the Cowichan PCFA for which other FDP's have been approved are:

- 2002 to 2007 Forest Development Plan for Forest License A49541 (Weyerhaeuser – Northwest Hardwoods).
- In addition, there is a large amount of private land adjacent to the PCFA, particularly along the southern boundary. These private lands are within “Managed Forest Units” and Forest Management Plans are submitted to the B.C. Assessment Authority.

3. MEASURES TO PROTECT FOREST RESOURCES

3.1 Timber

This FDP includes harvesting of second growth timber. Salvage operations may also occur on the area under the FDP.

Management measures

3.1.1 Silviculture systems

Information regarding the silviculture systems proposed for specific cutblocks is presented in the Harvest Summary Table (Section 4) of the FDP text. This FDP proposed a variety of silviculture systems. The silviculture systems have been chosen both to facilitate regeneration objectives (in particular to ensure adequate levels of light for regeneration and successful growth of Douglas-fir) and to address non-timber resource values. Some of the cutblocks will use a clear cut or clear cut with reserves silviculture system, others will use a system that meets the criteria for “retention” silviculture systems as defined in the Operational and Site Planning Regulation (OSPR). The Operational and Site Planning Regulation defines the retention silviculture system as follows:

“retention system” means a silvicultural system that is designed to

- (a) retain individual trees or groups of trees to maintain structural diversity over the area of the cutblock for at least one rotation, and
- (b) leave more than half the total area of the cutblock within one tree height from the base of a tree or group of trees, whether or not the tree or group of trees is inside the cutblock.

Regeneration will be accomplished by planting, regardless of the silviculture system used.

Stocking standards (add these tables to the final plan)

3.1.2 Harvest priorities

The following harvest priorities have guided the selection of cutblocks in this Forest Development Plan:

1-Older stands (excluding old growth) – (cutblocks 1, 6, and 13).

2-Stand conversion of off-site western hemlock to Douglas-fir and deciduous to coniferous (western hemlock – cutblocks 2, 3, 8, 9, 11; deciduous – cutblock 12).

3-Root rot and/or windthrow – (cutblocks 4 and 11)

3.1.3 Forest Health

Issues

The primary forest health issues that may potentially affect timber management on the PCFA are:

Biotic factors:

1 - Root disease – Laminated root rot (*Phellinus weirii*) is common in second growth Douglas-fir stands in the PCFA and throughout the east side of Vancouver Island. It is the primary root disease concern in the PCFA. Other root diseases including *Armillaria* (*Armillaria ostoyae*) and *Annosus* (*Heterobasidion annosum*) may also occur in the PCFA to a lesser degree. Douglas-fir and grand fir are highly susceptible to laminated root, western hemlock is moderately susceptible, western white pine is tolerant, cedar and deciduous species are immune. Laminated root rot is primarily found in advanced Douglas-fir second growth stands where it is spread by root contact. It has the potential to inflict high losses in infected stands, but laminated root rot also assists in creating stand diversity through the creation of small openings and pockets of deciduous in infection centers.

2 - Hemlock Dwarf Mistletoe (*Arceuthobium tsugense*) - This is a common endemic forest health issue in mature and older western hemlock trees. It is found in western hemlock throughout the PCFA area at varying levels of infection. Infection by hemlock dwarf mistletoe causes swelling and abnormal branching, which results in broom formation. Heavily infected trees suffer reduced lumber recovery, reduced height and diameter growth and occasional mortality.

Dwarf mistletoes are obligate parasites that can survive only on live braches or stems of living trees. Spread of mistletoe is most likely within 15 meters of an infected tree.

3 - White pine blister rust (*Cronartium ribicola*) – This non-native fungal disease attacks the stem of western white pine trees (and other 5 needle pines). It causes a bark canker, which is usually lethal when located on the stem. Most stem cankers occur within 2m of the ground and often begin as branch infections. White pine blister rust is the primary factor limiting the use of western white pine for use in reforestation in this area. It is important, however, to maintain the option of using white pine to reforest laminated root rot centers where inoculum removal is not performed and species options are limited.

There are also several other pests, that while potentially having serious impacts on the forest, tend to be more sporadic in their occurrence. These include:

4 - Balsam Woolly Adelgid (*Adelges piceae*) – The PCFA is located in a zone where this is considered to be a potential forest health issue. In the PCFA grand fir is susceptible to attack. Most trees can survive one attack but repeated attacks over several years can cause more damage.

5 – Engraver beetle (*Scolytus ventralis*) – This can be a problem in stressed trees (particularly grand fir). It is becoming more prevalent on the east side of Vancouver

Island due to the drier springs and summers that have occurred in recent years. Attacked trees are often top-killed and can be completely killed if attacked by enough beetles.

Abiotic factors

6 - Deer and elk browsing - This can be an issue, particularly with respect to cedar plantations.

7 - Windthrow - This is recognized in the PCFA as a forest health risk factor. Small cutblock sizes and reserves within cutblocks (wildlife tree patches and riparian management areas) expose more timber edge to potential damage from strong wind events). Windthrow in British Columbia forests is generally classified as either catastrophic or endemic. Catastrophic windthrow occurs as a result of peak storm winds that occur very infrequently and is very difficult to manage for. Windthrow management is directed at endemic windthrow which occurs more regularly, but on a smaller scale as a result of lower velocity windstorms.

Measures to Protect

1-Root rot – An overview assessment of root disease will be completed in all second growth Douglas-fir stands scheduled for harvest with more detailed surveys done as necessary. Strategies for addressing infections of laminated root rot include:

- Surveys to map infected areas.
- Selection of trees to retain within second growth blocks will consider the presence and location of root rot areas. Single trees selected for retention will have no visible infections. Group retention areas may have some infected trees, but these will not be located along the edge of the retained patch.
- Regeneration with resistant species (eg. cedar or deciduous in areas with laminated root rot).
- Stumping may be undertaken in limited situations particularly where infection levels are high and soil, terrain conditions are conducive to this treatment, and water quality objectives can be met.

2-Hemlock Dwarf Mistletoe - Hemlock Dwarf Mistletoe (DMH) will be managed through application of the following strategies:

- Assess levels of DMH during pre-harvest fieldwork.
- Locating boundaries along mistletoe free stands to as great a degree as possible.
- Avoiding the retention of infected trees either individually or in Wildlife Tree Patches wherever possible.
- Planting mistletoe resistant species adjacent (within 15m) to timbered edges with any infected trees remaining.

- Removing susceptible residuals over 2 metres tall after harvest.
- Monitoring, especially during pre-spacing assessments, will prescribe removal of any infested juvenile trees and preference for retention of species other than Hw within 15m of any infected Hw.

3-White Pine blister rust - White pine blister rust will be managed as follows:

- White pine will generally be used as a component of a mixed stand.
- White pine will only be prescribed on sites that are ecologically suited to its vigorous growth.
- Regular pruning of the white pine trees in accordance with MOF white pine pruning guidelines will be prescribed to eliminate foliage from the lower portion of the tree.
- Planting of white pine will be avoided in creek draws and other moist areas as these sites often harbour Ribes species (gooseberries and currants) which are the alternate host for white pine blister rust.

4 - Balsam Woolly Adelgid - If a BWA infestation is noted adjacent to any opening abies species will be considered to be acceptable only (and not preferred).

5 – Engraver beetle (Scolytus ventralis) – Prompt salvage of windthrow and proper disposal of slash will reduce opportunities for population build up.

6 – Deer and/or elk browsing - Ungulate browse damage will be reduced through the use of browse protectors. Where prescribed, these will be placed over the seedlings at time of planting. Protectors will be used where cedar is planted and browse is known to be a problem. This method will be applied to other tree species if necessary.

7 - Windthrow - Windthrow will be managed at the engineering stage of block development. The block level windthrow assessment will consider both hazard and consequence of windthrow. At the FDP level a preliminary overview to identify high consequence areas was undertaken. Blocks with high windthrow consequences are defined as those being adjacent to:

- Park boundaries;
- Wildlife Habitat Areas;
- Old Growth Management Areas;
- Power lines;
- Fish streams;
- Gullies;
- Unstable terrain;

- Private forest land;

The following blocks have been identified as having at least one high consequence boundary:

Cutblock 1 – East boundary along riparian reserve zone of Bear Creek.

Cutblock 3 – East boundary along riparian reserve of S3 stream.

Cutblock 5 – North boundary along park.

Cutblock 10 – Riparian reserves.

Windthrow will be managed as follows:

- Windthrow assessments will be carried out at the site planning stage. These assessments will identify the windthrow hazard and potential consequences (impacts on terrain stability, other resource values, and public safety) as well as strategies to mitigate the hazard where necessary.
- Cutblock boundaries will be located in a windfirm location.
- In areas with high potential for windthrow dispersed retention will be minimized and retention of larger patches will be favoured.
- Small retention patches and individual retained trees will be located in areas with deep well-drained soils or where the windthrow hazard is low.
- Management practices including feathering of edge will be applied if necessary, according to the assessed risk and consequence of windthrow.
- Monitoring of windthrow and recovery will be implemented where practical and in accordance with overall objectives.

3.13 Fire and fuel management

There can be extended dry periods during the summer months when the fire hazard on the PCFA becomes very high. In order to reduce the risk of wildfire it is important that residue and waste from timber harvesting operations be managed. Of particular concern is the build up of fine fuels along roads.

Fuels will be managed as follows:

- Slash disposal by piling and burning, when safe to do so, will be conducted along roadsides where required.
- Limbing and topping will generally be done at the stump.
- The hazard and risk associated with residual slash will be assessed following harvesting and the hazard will be mitigated as necessary.
- A Fire Preparedness Plan will be completed and submitted to the Coastal Fire Center.

3.2 Water

Issues

Issues regarding water quality are related to the protection of both fish habitat and domestic water supplies. There are a number of small and medium sized streams in the PCFA which drain directly into the Cowichan River. There are no Community Watersheds in the area under this plan. There is one known water user in the area under the plan. This is the Sahtlam Lodge which receives water from an unnamed creek located between cutblock 7 and cutblock 8.

There are very important fisheries values in the Cowichan River. The major threat to water quality is the introduction of silt to water courses through surface runoff or stream bank erosion.

Measures to Protect

Measures to protect water values include the following:

- Riparian management in accordance with the Forest Practices Code Act and the Operational and Site Planning Regulation.
- Road construction, maintenance, and deactivation in accordance with the Forest Practices Code.
- Manage sensitive terrain in accordance with legislation and regulations.
- Minimize wet weather road construction and surface grading. Road construction and grading will be shut down during periods of heavy rainfall and high runoff.
- Ground disturbance will be minimized during harvesting through site assessments and careful selection and use of harvest systems.
- Inspections of ditches and culverts will be carried out after major storm events.
- Maintenance (including removal of culverts) of in-block roads that will not be used to access other blocks once harvesting and silvicultural operations are completed.

3.3 Fisheries

Issues

The CFPA is located near to the Cowichan River, which has very high fisheries values. There are a number of small and medium sized streams in the CFPA, which drain into the Cowichan River. Streams in the CFPA may contain fish from the following groups of species:

- Pacific salmon – Coho, chum, and Chinook
- Trout – steelhead, cutthroat, rainbow, and brown (introduced)

Fisheries protection issues are centered on the protection of habitat and water quality. The best available information has been used in identification and classification of fish streams for the water courses that are shown on the 1:20,000 TRIM maps (except in the vicinity of cutblocks 4 and 5 where TRIM stream locations have been corrected with field traverse data). Sources of information for the area under the plan include:

- Fish stream classification from the MOF SBFEP 2000-2004 FDP maps for this area.
- Block level fish stream inventories associated with previous SBFEP timber sales (completed between 1996 and 1998).
- Stream traversing and field data collection (e.g. stream widths, gradient, and barriers) during the field engineering, block and road reconnaissance phases.

Measures to Protect

Fisheries values will be protected by:

- Restricting road construction near fisheries creeks to drier periods of the year.
- The timing of any in stream works will be guided by the November 19, 2001 MWLAP document “ Timing Windows and Measures for the Conservation of Fish, Fish Habitat, and Water Quality for the Nanaimo Planning Area of the South Island Forest District.
- Continue to undertake detailed stream inventories for Site Plans.
- Applying riparian protection measures as specified in section 3.4.
- Identify and implement enhancement, mitigation, and rehabilitation opportunities with available funding in cooperation with other stakeholders in the area in order to address the past history of development in the PCFA.

3.4 Riparian Management

Issues

Riparian management covers several resource issues including water quality, fisheries, wildlife, and biodiversity. These issues are discussed in sections 3.2 (water), 3.3 (fisheries), 3.5 (wildlife), and 3.9 (biological diversity). The Riparian Management Area (RMA) consists of a Riparian Management Zone (RMZ) and where required by regulation a Riparian Reserve Zone (RRZ). Within the RMA, restrictions to forest practices are applied. The width and management approach for RMA's are determined by the attributes of the stream, lake, or wetland. Attributes such as gradient, fish presence or absence, width of stream, size of wetland or lake, and biogeoclimatic zone can affect the size of the RMA and the requirement for a RRZ.

The Cowichan River is classified as S1. There are two S2 streams (Summit Creek and Bear Creek) within the PCFA, several S3 streams and numerous S4 and S6 streams.

There are also several classified wetlands within the PCFA. A reserve network has been developed by KFS and is shown on the FDP maps. It includes many of the riparian reserve zones and some of the wetlands. In many cases it extends beyond the riparian reserve zone.

General Objectives

The general objectives for riparian management areas are to:

- Minimize or prevent impacts of forest and range uses on stream channel dynamics, aquatic ecosystems, and water quality of all streams, lakes, and wetlands.
- Minimize or prevent impacts of forest and range use on the diversity, productivity, and sustainability of wildlife habitat and vegetation adjacent to streams, lakes, and wetlands with reserve zones, or where high wildlife values are present.
- Allow for forest use that is consistent with the above two objectives.

Measures to Protect

Riparian Reserve Zones and Riparian Management Zones will be established in accordance with sections 59-64 of the OSPR. These requirements are summarized in the following table:

Type of riparian area	Classification	Riparian reserve zone Minimum slope distance (m)	Riparian management zone Minimum slope distance (m)	Riparian management area Total slope distance (m)
Streams	S1 (<100m wide)	50	20	70
	S2	30	20	50
	S3	20	20	40
	S4	0	30	30
	S5	0	30	30
	S6	0	20	20
Wetlands	W1 (<1000 ha)	10	40	50
	W2	10	20	30

	W3	0	30	30
	W4	0	30	30
	W5	10	40	50
Lakes	L1 (<1000 ha)	10	DM requirements	10+
	L2	10	20	30
	L3	0	30	30
	L4	0	30	30

The specific objectives for riparian management zones (RMZ) vary depending on whether or not the riparian feature also has a riparian reserve zone (RRZ).

Encroachment of roads within RMA's will be avoided wherever possible unless alternate locations are not feasible or would result in a higher risk of damage to the environment. Where roads must encroach on RMA's, strategies will be developed to minimize impacts in consultation with government agencies.

The retention specifications for RMZ's will vary according to site conditions. The range of basal area retention is specified below:

Streams that have both a riparian management zone and a riparian reserve zone (S1, S2, and S3 streams)

For these streams the principle objective for management of the RMZ is to reduce the risk of windthrow to the reserve zone and to protect important wildlife habitat values in the management zone. The range of retention is shown in the table below:

Riparian class	S1	S2	S3
RMZ width	20	20	20
Target basal area retention (average)	50%	50%	50%
General range of basal area retention	25 - 60%	25 - 60%	25 - 60%

Site specific decisions will be made to determine the appropriate level of retention and the type, if any, of trees to be retained within the RMZ. The level of retention and the trees to be retained will depend on:

- The characteristics of the stream.

- The susceptibility of the area to windthrow.
- General retention levels for the harvest unit.
- Sound, well rooted veteran trees and trees with no signs of root or bole rot are preferred for retention.
- Deciduous trees are also preferred candidates for retention.

Streams with only a riparian management zone (S4, S5, and S6 streams)

The principle management objectives are to retain sufficient vegetation along streams to provide shade, reduce bank micro climate changes, maintain bank and channel stability and protect wildlife habitat. For S4 streams protection of fish habitat is an important objective. The range of retention for S4, S5, and S6 streams is shown in the table below:

Riparian class	S4	S5	S6
RMZ width	30	30	20
Target basal area retention (average)	25%	25%	5%
General range of basal area retention	0- 50%	0-35%	0-20%

The above targets (for all stream classifications) are intended to apply as an average over the entire FDP and not to individual streams.

S4 streams – Measures to protect

Site specific decisions will be made to determine the appropriate level of retention and the type, if any, of trees to be retained within the RMZ. The level of retention and the trees to be retained will depend on:

- The characteristics of the stream.
- Protecting fish habitat.
- The susceptibility of the area to windthrow.
- General retention levels for the harvest unit.
- Tree species.
- Sound, well rooted veteran trees and trees with no signs of root or bole rot are preferred for retention.

- Deciduous trees are also preferred candidates for retention.
- The majority of the retention will be in the 10m closest to the stream bank.

The harvesting of merchantable trees adjacent to the stream bank in the RMZ will be an acceptable practice where:

- The windthrow hazard is high and retention of large trees cannot be achieved.
- It is compatible with the levels of retention and overall management prescriptions for the harvest unit.

Additional management practices to be followed include:

- Retention of all non-merchantable conifer trees, understory deciduous trees, shrubs, and herbaceous vegetation within 5m of the channel to the fullest extent possible.
- Retention of wildlife trees.
- Trees will be felled and yarded away from the stream. Any debris inadvertently deposited in the stream will be removed at the time of yarding when safe to do so.
- Machine free zones will be used where appropriate to maintain the integrity of stream banks and vegetation.

S5 and S6 streams – Measures to protect

Site specific decisions will be made to determine the appropriate level of retention and the type, if any, of trees to be retained within the RMZ. The level of retention and the trees to be retained will depend on:

- The characteristics of the stream.
- The susceptibility of the area to windthrow.
- General retention levels for the harvest unit.
- Tree species for retention.
- Sound, well rooted veteran trees and trees with no signs of root or bole rot are preferred for retention.
- Deciduous trees are also preferred candidates for retention.
- The majority of the retention will be in the 10m closest to the stream bank.
- Windfirm trees with roots embedded in the stream bank will be a high priority for retention.

The harvesting of merchantable trees adjacent to the stream bank in the RMZ will be an acceptable practice where:

- The windthrow hazard is high and retention of large trees cannot be achieved.
- It is compatible with the levels of retention and overall management prescriptions for the harvest unit.

Additional management practices to be followed include:

- Retention of all non-merchantable conifer trees, understory deciduous trees, shrubs, and herbaceous vegetation within 5m of the channel to the fullest extent possible.
- Retention of wildlife trees.
- In cases where these S5 or S6 streams flow directly into fish bearing streams and conditions allow, trees will be felled and yarded away from the stream. Any debris inadvertently deposited in the stream will be removed at the time of yarding when safe to do so. It may be necessary to fall some trees across these streams. The frequency of this will be minimized however. Any slash and debris inadvertently deposited in the stream will be removed at the time of yarding when safe to do so.
- Machine free zones will be used where appropriate to maintain the integrity of stream banks and vegetation.

Wetlands and Lakes

Riparian Reserve Zones

Riparian reserve zones will be established as required by Sections 61-64 of the OPSR for wetlands and lakes. The RRZ's are listed in the table at the start of section 3.4.

Riparian Management Zones

RMZ's will be established as specified in Section 61-64 of the OPSR (as listed in the table).

Site specific decisions will be made to determine the appropriate level of retention and the type, if any, of trees to be retained within the RMZ. The average target level of basal area retention is 25% for all classes of wetlands and lakes. Basal area retention will generally fall within the range of 0-40% for individual wetlands or lakes. The level of retention and the trees to be retained will depend on:

- The characteristics of the wetland or lake.
- The susceptibility of the area to windthrow.
- General retention levels for the harvest unit.
- Protecting wildlife habitat and retaining wildlife trees.

- Sound, well rooted veteran trees and trees with no signs of root or bole rot are preferred for retention.
- Deciduous trees are also preferred candidates for retention.
- Providing a buffer around important wildlife features including major game trails and denning sites.

3.5 Wildlife

Issues

The area under the FDP provides a variety of habitats that are used by a range of wildlife species. The PCFA is entirely within the Coastal Western Hemlock Biogeoclimatic zone, which has one of the richest vertebrate faunas among the 14 biogeoclimatic zones in British Columbia.

Black tailed deer and Roosevelt elk – Black tailed deer use parts of the area under the plan. Roosevelt may also use parts of the area. Much of the area under the plan lies in a shallow snow pack area, where climatic and topographic factors are the least limiting for black-tailed deer in the winter months. As a result deer can meet their needs for forage and cover in many stand types as long as security cover, thermal cover, and forage can be found in relatively close proximity.

Black bears – Black bears are found throughout the area under the plan. Black bears require suitable den sites for survival. Dens are often located in the hollow bases of cedar trees, sometimes in other older conifers, or in downed hollow logs or holes under root wads.

Objectives for Known Ungulate Winter Ranges

There are no known ungulate winter ranges within the PCFA as defined in section 69 of the OSPR.

Measures to Protect

Ungulate winter range requirements are managed through the Ministry of Water, Land, and Air Protection. The wildlife tree patches and the riparian reserves and management zones will provide a mix of security cover, thermal cover and forage that should be satisfactory for deer or elk winter range requirements.

Where black bear dens are identified they will be protected in accordance with the Guidelines for Black bears (MWLAP, May 28, 2001). Large cedar trees will be checked during block layout for bear dens. Den sites that are already known or discovered during layout will be retained as part of a wildlife tree patch. If other bear dens are located during harvesting they will also be retained. Some large standing cedar trees will be a priority for retention. Large (>100 cm in diameter) coarse woody debris structures for future den sites will also be retained as described in section 3.9.

Identified Wildlife Strategy and Wildlife Habitat Areas

In 1999, the Identified Wildlife Strategy was released as a component of the Forest Practices Code. It is intended to manage for wildlife and fish species that are not adequately protected by the coarse filter provisions of riparian and biodiversity management. Under the Forest Practices Code (FPC) species considered to be at risk include those species considered to be threatened, endangered, sensitive, vulnerable or regionally important. Wildlife species at risk can be classified as “identified wildlife” under the Forest Practices Code. Identified wildlife are generally dealt with through the establishment of Wildlife Habitat Areas (WHA’s) and through the implementation of general wildlife measures.

Identified wildlife that could potentially be found within the PCFA include the following species:

Birds – American bittern, Northern goshawk, Marbled murrelet

Mammals – Keens long-eared myotis

(Managing Identified Wildlife – Appendix 6 Identified Wildlife – Species by Forest District and Ecosection).

If any of the above species are found KFS will develop plans for management in consultation with the MWLAP.

There are no known Wildlife Habitat Areas identified for the area under the plan. There is a proposed Wildlife Habitat Area (WHA) for the recruitment of suitable marbled murrelet habitat over time. This proposed WHA is located along the north boundary of the PCFA. The proposed WHA consists of provincial park lands, an area of approximately 63 ha within the PCFA, and another 45 ha on the north side of the Cowichan River outside of the PCFA. Cutblock 5 is located within this proposed WHA. KFS is presently examining options for alternative locations for this WHA, preferably within areas already constrained from timber harvesting.

Wildlife Habitat Features

The OSPR defines a Wildlife Habitat Feature as:

- a) a significant mineral lick or wallow,
- b) an active nest of a bald eagle, osprey or great blue heron, or
- c) any other localized feature identified by a Designated Environment Official.

Wildlife habitat features will be addressed at the site level (SP level) in accordance with the OSPR.

At this time there are no known Wildlife Habitat Features in the area under the plan.

Measures to Protect

Where eagle nests are identified they will be protected in accordance with the Guidelines for Coastal Bald Eagles (MOELP December 20, 2000). The protection measures can include the following:

- No harvesting of known or encountered nest trees (with active or inactive nests).
- The objective will be to incorporate the nest tree into a WTP or other reserve so that it is left in a windfirm patch.
- Road building, falling, yarding, and loading will be avoided within 150m of active nest trees during the nesting period (February 15 to August 15).
- Regular helicopter traffic will be avoided within a 500m radius of an active nest during the nesting period.
- Blasting will be avoided within 1 km of an active nest during the nesting period.
- Helicopter harvesting will be avoided within 1.5 km of the active nest during the nesting period.

Other wildlife species

The Conservation Data Centre (CDC) lists a number of animals that have been placed on the provincial red list (endangered), or blue list (threatened).

Some wildlife species and their habitats, although not a wildlife habitat feature under the OPSR, receive special consideration in this FDP. This includes the red legged frog. The red legged frog (*Rana aurora*) is a Blue listed species considered to be vulnerable in B.C. It one of only two native species of frog on Vancouver Island. Red legged frogs live in moist coniferous or deciduous forests and forested wetlands. Breeding takes place in water 0.5 – 2.0 m deep, in cool, usually well shaded ponds or lake edges, permanent wetlands, beaver ponds or slow moving streams. There are three critical issues with respect to the protection of red-legged frogs and their habitat:

- The breeding areas;
- The movement of adults to and from the breeding areas and the movement of juveniles away from the breeding areas;
- The forested habitats where they spend the majority of their lives.

In the event that red legged frogs are found in the vicinity of proposed cutblocks or roads on the PCFA the General Protection Guidelines found in the “Preliminary Protection Guidelines for the Red-legged Frog” (MOELP - May 28, 2001) will be considered.

3.6 Recreation

Issues

Describe the recreation resources for the area under the plan and issues associated with those resources. Recreation resources are defined in the Act as a recreation feature, recreation facility, scenic or wilderness feature or setting that has recreational significance or value. Issues pertaining to scenic areas may be discussed under Section 3.11 Other - Visual Resource Management.

There are significant opportunities for recreation and tourism in the PCFA since it is close to population centers, the Cowichan River, and a number of Provincial Parks. The PCFA is easily accessible by road and therefore experiences considerable recreational use. The Trans Canada Trail runs along the north boundary of the PCFA. The Trans Canada Trail is a Canada wide shared – use recreation trail. None of the proposed FDP blocks are immediately adjacent to the trail; the closest blocks are approximately 150m away. Recreation activities in the PCFA include hunting, fishing, dirt biking, and the collection of non-timber forest products.

There are no known (designated by the Ministry of Forests) recreation sites and trails within the area under the plan.

A forest recreation inventory has been completed for the Arrowsmith TSA which includes the area under this FDP.

There is local interest in having continued road access to the area under the plan.

Measures to Protect

- Where evidence of significant recreational use (access trails to the river, etc.) is noted during block engineering and design, efforts will be made to consult with local recreational user groups.
- Trails or other areas with significant recreational values and/or use will be managed through assigning appropriate levels and patterns of retention. A significant amount of the reserve network that KFS has identified is located near the trail.
- Significant trails that are disrupted during harvesting will be promptly reestablished.
- Recreational access will be a significant consideration in formulating plans for road development and deactivation. In particular there will be no direct linkage of road systems within the PCFA with the Trans Canada Trail. Recreational access considerations will be balanced with mitigation of environmental risk, operational requirements, and safety.
- In the future when harvesting is undertaken adjacent to the trail, cutblocks will be small with extended green-up periods.

- In the future in cases where harvesting operations are conducted close enough to the Trans Canada trail to potentially impact trail users the following steps will be taken:
 - The posting of signs to inform trail users of forestry operations in the vicinity of the trail.
 - Managing access to portions of the trail for short periods of time to ensure the safety of users.
 - Prompt clearing of any logging debris which may inadvertently fall onto the trail during operations.

3.7 Non-timber (Botanical) Forest Products (NTFP's)

Issues

Non-timber forest products include harvesting of botanical forest products (for medicinal/nutraceutical purposes, floral greenery, and horticultural applications), mushroom collection, and edible resource harvesting (berries, roots, and foliage). The PCFA tenure provides Cowichan Tribes with the rights to harvest and manage non-timber forest products. At present there are no regulations in place to govern the harvesting of NTFP's and Cowichan Tribes has not yet developed a management strategy.

There is presently some harvesting (particularly mushrooms) of NTFP's in the area under the plan. However it is often not known who is collecting botanical forest products or exactly where they are being collected, this makes it difficult to plan specific measures to protect these resources.

Harvesting non-timber forest products has sustained the Cowichan people for thousands of years by providing items for cultural and spiritual purposes including food, medicine, shelter, and clothing.

Measures to Protect

- Cowichan Tribes will develop and implement a NTFP management strategy in cooperation with local stakeholders in the NTFP sector.
- The relatively small size of the proposed openings and identified reserve network will provide for a variety of forest conditions within the PCFA and consequently a variety of sites where NTFP's may be produced.
- No other specific measures are proposed to protect botanical forest products during the term of the FDP.

3.8 Range

Issues

There are no known Range Tenures or issues within the area under the plan.

3.9 Biological Diversity

Issues

Under the Forest Practices Code, biodiversity is considered at a variety of scales from the Provincial and Regional scales to the landscape unit and stand level. The landscape unit and stand level are the most relevant to Forest Development Plans. Landscape level biodiversity attributes include old growth, seral stage distribution, connectivity, and patch size distribution. Stand level biodiversity attributes include levels of coarse woody debris and wildlife tree retention. Some guidance on implementing stand level biodiversity has been provided by the South Island Forest District Wildlife Tree Patch Guidelines (December 8, 1997).

The PCFA area includes three Biogeoclimatic sub zones/variants, the CWHxm1, the CWHxm2, and a small area of the CWHmm2. These variants are in Natural Disturbance Type 2 (ecosystems with infrequent stand initiating events). Historically these forests were usually even aged. Maintaining snags, veteran trees and coarse woody debris within predominantly even-aged stands is important for biodiversity in this NDT. Maintaining variety in species composition is also important in these stands.

The PCFA is included in the Cowichan Landscape Unit. This unit has a biodiversity emphasis of low. The Ministry of Sustainable Resource Management is currently involved in Landscape Unit Planning and the designation of Old Growth Management Areas (OGMA's). There are presently discussions ongoing between KFS and the MWLAP regarding the potential to find an alternative location for the proposed Wildlife Habitat Area. Location of OGMA's, if any, within the PCFA, may be affected by the outcome of these discussions.

The Sensitive Ecosystems Inventory Project (SEI) was completed during the 1990's by a group of federal, provincial, and local agencies. The SEI identified, classified, and mapped sensitive ecosystems on the southern part of Vancouver Island and the Gulf Islands. The SEI project was intended to identify rare and fragile terrestrial ecosystems in order to facilitate land-use and resource management decisions that ensure their continued ecological integrity. The SEI project identified seven sensitive ecosystem types (wetland, riparian, older forest, woodland, terrestrial herbaceous, coastal bluff, and sparsely vegetated). Aside from small riparian areas which are managed through the FPC riparian provisions none of the cutblocks in this FDP contain these ecosystem types.

The Douglas-fir/Garry oak ecosystem has been listed as a "species at risk" under the Forest Practices Code. This ecosystem does not occur within the PCFA.

Another important issue with respect to biodiversity in this area (southeastern Vancouver Island) is that of red and blue listed (rare and endangered) ecosystems. These are listed on the B.C. Conservation Data Center (CDC) list. There is presently no formal government policy in effect with respect to management of these areas.

General Objectives – Coarse Woody Debris

The general objective with respect to coarse woody debris (CWD) is to ensure that some level of CWD is left on site following harvesting. The second growth Douglas-fir stands which predominate in the area under this FDP generally produce relatively small amounts of CWD from logging residue. CWD is defined as woody material greater than 10 cm in diameter according to the Biodiversity Guidebook. In May of 2000 the Ministry of Forests released a strategy for the management of coarse woody debris. (A Short-term Strategy for Coarse Woody Debris Management in British Columbia's Forests). Based in part on this strategy appropriate levels of CWD will be achieved in the following manner:

- Leave levels and sizes of coarse woody debris well distributed across the harvest west that are consistent with the latest Utilization Standards for Coastal B.C.
- Reduce the amount of CWD accumulations on roadsides and landings by leaving CWD distributed throughout the cutblock.
- Provide for sources of CWD recruitment in WTP's.
- Small amounts of post harvest windthrow will be left on site to contribute to CWD.
- In general windthrow from WTP's will not be salvaged.
- During harvest, old remnant logs from previous harvest entries will be left on site as CWD.
- Site preparation will focus on re-arranging the slash to create plantable spots rather than piling and burning.

Measures to Protect

Wildlife trees

Stand level biodiversity objectives will be guided by the South Island Forest District Wildlife Tree Patch Guidelines (December 8, 1997). KFS will manage for wildlife tree requirements at the levels specified in this policy, until landscape unit objectives are completed through landscape unit planning. For the area under this FDP this means 15% wildlife tree retention, since the entire area under the FDP is in the CWH Biogeoclimatic Zone. It is expected that this target will drop to 12% once landscape unit objectives are completed.

KFS has recently completed an exercise of identifying a reserve network for the PCFA. These reserves include standard FPC requirements for riparian reserves and additional reserves to protect values identified through site level field work. These reserves total 186 ha or 10.4% of the total PCFA land-base. These reserves include a variety of ecosystems and stand types, particularly many of the richer and wetter ecosystems since they have a considerable amount of riparian areas within them. They include significant areas of older second growth stands as well as many areas with a significant

deciduous component. They form the start of meeting the WTP target of 15%. These reserves are shown on the FDP maps. The additional 4.6% will be identified at the site planning stage for each block.

Sensitive ecosystems

None of the proposed cutblocks in this FDP include areas identified as sensitive ecosystems through this project aside from the small areas of riparian habitat mentioned previously.

Red and blue listed plants and plant communities

The Conservation Data Centre (CDC) lists a number of plants and natural plant communities that have been placed on the provincial red list (endangered), or blue list (threatened). Terrestrial Ecosystem Mapping (TEM) has been completed for the entire Cowichan PCFA. According to the TEM mapping the reserve network identified in this FDP includes significant representation of these ecosystems. Additional WTP's to be identified at the site planning level will also include some of these ecosystems, particularly ones that have significance to the Cowichan people. Further to this it is expected that these rare plant communities will be considered as part of the landscape unit planning process conducted by MSRM.

3.10 Cultural Heritage Resources and Archaeological Sites

Issues

Cultural heritage and Archaeological Resources include sites, objects, or location of traditional aboriginal societal practices that are of historical, cultural, or archaeological significance to the province, a community, or an aboriginal people. The area under this FDP is located in the traditional territory of the Cowichan Tribes.

Although the area under the plan is entirely covered with stands of second or third growth forest, generally dominated by Douglas-fir, there are minor components of western red cedar. There may be a variety of different types of Culturally Modified Trees (CMT's) associated with the cedar component in parts of the PCFA. Pre-1846 CMT's are provided protection under the Heritage Conservation Act.

An Archaeological Impact Assessment (AIA) can be required by the District Manager under Section 37(1)(e) of the OPSR but this has not been done for this area.

Measures to Protect

- KFS employs a number of First Nations members in various aspects of fieldwork associated with block development. As part of this work, these individuals are also identifying cultural and heritage values.
- KFS will utilize existing traditional use studies and cultural assessments where available to identify cultural values.

- A.I.A.'s will be carried out for those areas where requested by the District Manager or Cowichan Tribes, or where field crews have identified CMT's.
- Recommendations resulting from completed AIA's will be incorporated into block and road design.
- Any pre-1846 CMT's will only be removed in accordance with an alteration permit from the Ministry of Small Business, Tourism, and Culture.
- In the event that previously unidentified cultural heritage and /or archaeological resources are discovered during forestry operations, the operations will stop immediately or be modified to avoid damage to the site. The discovery will be referred to the Ministry of Forests and Ministry of Small Business, Tourism and Culture – Archaeology Branch.

3.11 Visuals

Issues

The major visual landscape management issues are associated with views from Highway 18 and to a lesser extent from roads along the Cowichan River and various park areas along the river. On November 13, 1998 the District Manager of the South Island Forest District designated the visual corridor of Highway 18 from Duncan to Honeymoon Bay as a known scenic area. The District Manager's direction is that Visual Impact Assessments (VIA's) must be completed, but not submitted unless requested, for all forest related operations in visual landscape units containing recommended retention, partial retention, or modification visual quality objectives as seen from established viewpoints.

Approximately 50% of the blocks proposed in this FDP are located in a recommended VQO of partial retention.

Measures to Protect

- Visual impact assessments will be completed for cutblocks that are potentially visible from viewpoints and located within known scenic areas in accordance with the District Manager's direction.
- Results from the VIA's will provide direction in designing falling boundaries and in determining levels and patterns of retention.

4. HARVESTING SECTION - CATEGORY A CUTBLOCK STRATEGIES

4.1 Harvest Summary Table

Licence No: [Enter]

4 Map Reference (BCGS)	5 Geographic Location	6 CP or TSL	7 Cutblock	8 Gross Area (nearest 0.1 ha)	Total Harvest Volume (nearest m ³)	Current Category Status	Joint Approval Required (CW, HLP, M or N)	Forest Cover Information				9 Harvest Method	10 Clearcut	11 BEC	12 Landscape Unit	13 Year of Harvest (If Critical)	S16 S17 Terrain Stability Assessments		Section 37 Assessments Completed? (Y,N or NR)					
								14 Species Composition (by percent)	15 Age Class	Height Class	Crown Closure						Completed	Consistent with Assessment and complies with THPR?	Terrain	Riparian	Visual	archaeological Impact	Pest Incidence	Gully
92B071	PCFA -west	CP	1	4.6	2300	PA	N	FCB	7	7	5	GB/C	Y	CWHxm1	Cowich.		NR							
92B071	PCFA -west	CP	2	2.4	800	PA	N	FHC	5	5	6	GB	N	CWHxm1	Cowich.		NR							
92B071	PCFA -west	CP	3	15.1	5000	PA	N	FH	4	4	7	GB	Y	CWHxm1	Cowich.		NR							
92B071	PCFA -west	CP	4	20.8	10400	PA	N	F	4	4	7	GB	Y	CWHxm2	Cowich.		NR							
92B071	PCFA -west	CP	5	18.0	9000	PA	N	FHD	4	4	6	GB	Y	CWHxm1	Cowich.		NR							
92B071	PCFA -west	CP	6	4.1	2050	PA	N	F	4	4	7	C	N	CWHxm1	Cowich.		NR							
92B071	Summit Creek	CP	7	20.0	10000	PA	N	F	4	4	6	GB	N	CWHxm1	Cowich.		NR							
92B071	PCFA-center	CP	8	5.8	1800	PA	N	HCF	6	4	6	C	Y	CWHxm1	Cowich.		NR							
92B071	PCFA-center	CP	9	15.1	7500	PA	N	HCF	6	4	7	GB	Y	CWHxm2	Cowich.		NR							
92B071	PCFA-center	CP	10	6.4	3200	PA	N	FHC	5	4	7	GB/C	N	CWHxm1	Cowich.		NR							

Legend									For approved Category A Cutblocks on most recently approved FDP			
Current Category Status		Joint Approval MOF/ MOELP		Forest Cover	Harvest Method		Clearcut		Sec. 16/17 Terrain stability Field Assessments		Section 37 Assessments Completed? (indicate Y/N, NR for the following assessments)	
I	Information	HLP	Higher Level Plan	Best available information. For example, cruise or forest cover,	A	Aerial	Y	Yes	Y	Yes	T	Terrain Stability Field Assessment
PA	Proposed A	CW	Community Watershed	Enter Species and Species Percent for up to five Species	C	Cable	N	No	N	No	R	Riparian
A	Approved A	M	Mutual Consent		GB	Ground Based			NR	None Required	V	Visual Impact
CP	Cutting Permit Issued (A)	N	No		- / -	combination of more than one method					A	Archeological Impact
PS	Proposed expedited major Salvage (PA)										P	Pest Incidence Survey
S	Approved expedited major Salvage (A)										G	Gully

4.2 HARVESTING OVERVIEW

The Allowable Annual Cut (AAC) for the PCFA is 10000 M3. There is no annual cut control.

KFS intends to harvest the AAC subject to markets for the wood since KFS has no timber processing facility.

4.3 Harvest Methods

Ground-based harvesting will generally be used on slopes up to 40%. Trees will be felled utilizing mechanized or hand felling as required. Trees will generally be moved to landings or roadside using hoe forwarding. Cable systems will be used on steeper sites with helicopter yarding as necessary for areas with access limitations.

4.4 Salvage

Salvage provides opportunities for small operators to log small volumes of timber that may not be economical for licensees or full phase contractors. This can provide employment opportunities from fibre that would otherwise not be utilized. Upon approval of this Forest Development Plan, timber meeting the requirements of the Forest Practices Code Act Section 28(1) will be harvested under the FDP without each individual exemption being approved by the District Manager, unless otherwise instructed by the District Manager.

Salvage operations described in this FDP apply only to minor salvage operations as defined in the OP&SR.

4.4.1 - Damaged Timber Salvage Operations

Small areas of timber throughout the development plan area damaged or killed by fire, wind, snow, insects, or disease will be harvested under this FDP. The volume harvested in a salvage unit will not exceed 2000 M3 (roads excluded) as specified in the OSPR. Upon approval of this FDP, these minor salvage operations are exempted from the OSPR requirements in sections 18, and Sections 10(3)(a),(b) and 19 (1.3), 28(1) of the FPC Act.

The following conditions will apply to areas proposed for minor salvage operations:

- All streams within and adjacent to the salvage areas will be identified and classified according to the stream definitions and classification in the OSPR, prior to salvage operations commencing in areas adjacent to a particular stream.
- Boundaries of the riparian reserve zones (RRZ) will be marked in the field prior to commencing salvage operations.
- In the case of significant amounts of contiguous damaged timber (mapable units that are <1.0 ha) ground based equipment may leave the road surface.

- In the case of minor amounts of damaged timber scattered along the roadside it will be salvaged from the roadside and will include utilizing trees reachable from the road to a maximum distance of forty metres from the road edge. During roadside salvage operations the equipment will not leave the road. Salvage of full length trees using equipment on the road will not take place in the event that salvage trees can not be removed safely without damaging non-hazardous living trees. Roadside salvage may include the use of equipment on the road, hand removal, or by helicopter. Roadside salvage will not take place within a riparian reserve, or any other designated reserve.
- Salvage operations will not occur within an established research plot without an amendment to the FDP being approved by the District Manager.
- Salvage operations will not occur within Wildlife Tree Patches (WTP's) or retention areas without written approval of the District Manager.
- Salvage operations will not occur without the written approval of the District Manager as specified in Section 19 of the THSPR in the following areas:
 - Within the Riparian Management Area (RMA) of all S1 through S4 streams.
 - In the RMA of S5 and S6 streams previously deferred from harvest under an approved Silviculture Prescription, Site Plan, Logging Plan, or Cutting Permit.
 - Within 15 meters of S5 streams with an OSPR defined width of less than 5 meters other than selective harvest of blowdown trees and WCB defined danger trees.
 - Within the RMA of lakes and wetlands.
- Some danger trees (as defined by WCB) may need to be felled in order to recover the damaged timber described above. The volume of danger trees to be felled will not exceed the volume of damaged trees to be salvaged in the immediate area of operations.

4.4.2 Timber Salvage From Previously Harvested Areas

Salvage operations recovering shake and shingle blocks and bolts, cants of all species, firewood and previous unharvested felled timber may occur throughout the area covered by this FDP.

These salvage cutting units are not specifically identified in this FDP, but include all previously harvested cutblocks in the area under the plan.

Upon approval of this FDP, minor salvage operations are exempted from the OSPR requirements outlined in sections 18(1) of the OSPR unless the DM specifies under section 18(2) of the OSPR that more information or an assessment is needed in order to adequately manage and conserve the resources.

The following conditions will apply to these types of salvage operations:

- All streams within and adjacent to the salvage area will be identified and classified according to the stream definitions and classifications of the OSPR prior to salvage operations commencing. Boundaries of the riparian reserve zones (RRZ) will be marked in the field prior to starting salvage.
- No safe standing trees will be felled to facilitate the removal of salvageable material within the salvage units. Standing live trees may have to be felled for safety reasons in conjunction with the falling of hazardous trees. If snags or danger trees as defined by the WCB regulations are present within or adjacent to the salvage units, the snags or danger trees will either be felled or a safe work zone will be established where the snags or danger trees will not be felled. The choice between falling danger trees and establishing safe work zones is to be guided by the following criteria:
 - Danger trees located along roads having significant, ongoing, levels of use could be felled.
 - A safe work zone will be established around danger trees not falling into one of the above two categories.
- Regeneration will be protected from damage potentially resulting from the salvage operations.
- Waste material from these salvage operations will be piled to prevent loss of productive growing sites.
- A 20 meter no work zone will be established around any known bear dens or any bear dens discovered during operations.
- Known cultural heritage resources including Culturally Modified Trees (CMT's) will be protected from damage during salvage operations.
- Salvage will normally take place along all road right of ways. Roadside material may be harvested with skidders, excavators, or loaders. Salvage from the roadside will include utilizing trees reachable from the road to a maximum distance of forty metres. During roadside salvage operations the equipment will not leave the road. Material beyond the roadsides will be harvested by hand or by helicopter unless otherwise approved by the District Manager. Material salvaged with a helicopter will use existing roads, landings, or borrow/gravel pits as drop zones for the material.
- All roads will be subject to maintenance and deactivation requirements under the OSPR, FPC Act, and this FDP.
- This type of salvage will be done in accordance with current direction with respect to coarse woody debris.

4.4.3 Timber Salvage from Stream Rehabilitation Operations

Salvage operations may include material recovered from stream rehabilitation associated with approved Watershed Restoration projects. Upon approval of this FDP, exemption from certain OSPR requirements as provided for in Section 18(2) of the

OPSR and sections 10(3)(a),(b) of the FPC Act will be approved.

4.4.4 Timber Salvage From Road Deactivation Operations

Salvage operations may include material recovered from road deactivation activities (including danger trees directly associated with road deactivation operations) associated with approved Watershed Restoration projects, Road Permits, Cutting Permits, and bridge removal. This section applies to actual road deactivation operations within the road right of way and not to salvage within 40m of the road. Upon approval of this FDP, exemption from certain OSPR requirements as provided for in Section 18 of the OSPR and sections 10(3)(a),(b) of the FPC Act will be approved.

4.4.5 Bridge, Culvert, and Helipad Material

Within the terms of this plan, it may be necessary to fall material for bridges, culverts, and helipads from areas adjacent to approved road rights-of way.

This material will not be located within Riparian Reserve Zones of streams, wetlands, or lakes, wildlife tree patches, retention areas, or research plots unless approved by the District Manager. All conditions of the FPC Act and its Regulations will apply to any harvesting in this category.

5. FOREST PRACTICES CODE VARIANCES

5.1 FDP Variance (or major portion of)

There are no requests for FDP variance in this FDP.

5.2 Harvesting Variance

There are no requests for access variances in this FDP.

5.3 Access Variance

There are no requests for access variances in this FDP.

6. ACCESS MANAGEMENT

This section describes the location and condition of existing roads, location of roads proposed for modification or construction, deactivation, and maintenance. Access to the PCFA is by the Holt Creek Forest Road which is connected to Highway 18 by a bridge over the Cowichan River near Skutz Falls. KFS will enter discussions with the MOF to reach an agreement on acquiring the necessary road permits. The area under the plan is presently well accessed by an existing road network, a relatively small amount of deactivation has taken place which is shown on the FDP maps.

Proposed road construction is shown on the FDP maps and summarized in Table 6.1.1 Road maintenance may be undertaken by KFS as necessary.

There are no known access barriers in the area under the plan.

Road construction

Proposed road construction and modification is shown on the FDP maps and listed in Table 6.1.1. Road construction will meet standards as expressed in the Forest Practices Code Act, the Forest Road Regulation and other pertinent Acts and Regulations. The following measures will be taken to ensure that FPC standards are met and that adequate environmental protection is provided:

- At the engineering and block design stage resource values and sensitive areas are identified and then roads are located to minimize impacts on these values while still meeting good engineering design principles. All necessary assessments will be done and the recommendations will be incorporated into the road design.
- Roads will be engineered so that any deactivation measures are provided the highest reasonable opportunity for successful completion.

Road deactivation

KFS's objectives for road deactivation are to stabilize the road prism, restore the natural drainage pattern, and reduce the potential for erosion. KFS will deactivate roads as specified in operational plans.

No road deactivation is proposed under this FDP since agreements on road use and responsibilities have not yet been finalized.

6.1 Access Management Tables

6.1.1 Road Maintenance, Construction, Modification, and Assessment Table

Map Ref. ¹⁶ (BCGS)	Geographic Location ¹⁷ (Provide Name)	Road ID ¹⁸	Road Name ¹⁹	Type of Road	Road Category	Year (if Critical) ²⁰	Type of Works ²¹	Length ²² (0.1 km)	Bridges and Major Culverts				Joint Approval Area		Assessments under Sec.4 & 5 of FRR completed?					
									Bridge Type ²³	Bridge/Major Culverts Location ²⁴ (0.1km)	In Stream Work? ²⁵	Date of work if Outside Work Window (YYYY/MM)	Joint Approval Required? ²⁶	Riparian Class ²⁷	Terrain Stability	Riparian	Visual Impact	Archaeological Impact	Soil Erosion	
92B071	Bear Creek		S110	RP	P			0.5												
92B071	PCFA –west		H200	RP	P			0.7												
92B071	PCFA –west		H210	RP	P			0.2												
92B071	PCFA –west		S300	RP	P			0.3												
92B071	PCFA –west		S400	RP	P			0.3												
92B071	PCFA –west		H400	RP	P			0.7												
92B071	PCFA –west		H410	RP	P			0.3												
92B071	PCFA –west		S500	RP	P			0.4												
92B071	Summit Creek		H600	RP	P			1.1												
92B071	Summit Creek		H610	RP	P			0.2												
92B071	PCFA-east		H700	RP	P			0.7												
92B071	PCFA-east		H810	RP	P			0.2												
92B071	PCFA-east		H850	RP	P			0.3												
92B071	PCFA-east		H1100	RP	P			1.9												
92B071	PCFA-east		H1110	RP	P			1.2												

Legend									
Type of Road		Type of Work		Bridge Type		Road Category		For roads approved on last FDP, Assessments under Section 4 and 5 of Forest Road Regulation Completed?	
RP	Road Permit Road	C	Construction	T	Temporary	I	Information	Y	Yes

FSR	Forest Service Road	M	Modification	P	Permanent	P	Proposed	N	No
						A	Approved A	NR	None Required

6.1.1.b Road Maintenance Table

Type of Road	Road Name, Road Permit Number and/or Road ID	Station

Legend	
Type of Road	
RP	Road Permit Road
FSR	Forest Service Road

6.1.2 Interim Road Deactivation Table

Licence No: [Enter]

Map Reference ²⁸ (BCGS)	Geographic Location ²⁹ (Provide Name)	Road ID ³⁰	Road Name ³¹	Year of Deactivation ³²	Level of Deactivation ³³
[Enter]	[Enter]	[Enter]	[Enter]	[Enter]	[Enter]

LEGEND	
Level of Deactivation	
T	Temporary
P	Permanent
SP	Semi Permanent

6.2 Access Maintenance

As agreements are finalized with the other primary road users in the PCFA operating area, holders of existing road permits will be finalized, and designation of primary and secondary users of Forest Service Roads will be allocated. Where KFS becomes either holder of a road permit or is designated a primary road user maintenance will be undertaken as necessary. Road maintenance operations may include grading, ditching, sanding, plowing, brushing, culvert and bridge inspections, and other activities.

7. APPENDIX

7.1 Advertisements

7.2 Review and Comment / Documentation and Referral

7.2.1 Letters

[Enter Copies]

7.2.2 First Nations

[Enter Details]

7.2.3 Agencies

[Enter Details]

7.2 Acknowledgement and Response to Comments Received Table (Optional)

Comment Submitted by	Name: Address:
Issue	
Response	

7.3 Summary of Revisions

[Enter Details]

7.3.1 Revisions Table (Optional)

Cutblock or Road	Revision	Reason for the revision
[Enter]	[Enter]	[Enter]

7.4 Category A Cutblock Issues (Optional)

Cutting Permit	Cutblock	Issue	Action Taken	Timeframe if Critical
[Enter]	[Enter]	[Enter]	[Enter]	[Enter]

7.5 Amendment Log

Date Submitted (yyyy/mm/dd)	Date Approved (yyyy/mm/dd)	Reason
[Enter]	[Enter]	[Enter]

8. SOURCES OF INFORMATION

Date Four Months Prior to Submission for Approval: [Enter]

Information Source	Date of publication
Khowutzun Forest Services Ltd. Probationary Community Forest Agreement Management Plan #1	December 5, 2004
SIFD – District Manager Letter re VIA's	May 23, 2001
SIFD – Wildlife Tree Patch Guidelines	December 8, 1997
SIFD – General Guidelines for preparation and approval of FDP's	Nov. 3, 1999
MWLAP -Timing Windows and Measures for the Conservation of Fish, Fish Habitat and Water Quality for the Nanaimo Planning Area of the South Island Forest District.	Nov. 19, 2001
MWLAP – Coastal Bald Eagles – Habitat Protection Guidelines	December 20, 2000
MWLAP – Black Bears – Habitat Protection Guidelines	May 28, 2001
Vancouver Island Land Use Plan	December, 2000
[Enter Details]	[Enter Details]

9. MAPS

9.1 Key Map

9.2 List of Maps and Overlays

[List]

¹ Planning Period; Section 10(1)(a) of the Act; an FDP must cover a period of five years unless otherwise prescribed. Under Section 3(3) OPR; the period of coverage may be reduced for the reasons sited.

² Authorized Licensee Signature; Section 10 OPR; an FDP must contain the signature of the person required to prepare the plan. Section 18 or 19 of the Act; basically, forest development plans for the Small Business Forest Enterprise Program or major licence holders.

³ Authorized RPF Signature; Section 10(1)(e) of the Act; FDP must be signed and sealed by a professional forester.

⁴ Map Reference; Business requirement

⁵ Geographic Location; Business requirement

⁶ CP or TSL; Business requirement

⁷ Block; Business requirement

⁸ Gross Area; Section 11(1) FPC Act, Section 11(1) OPR

⁹ Harvest Method; Section 20(1)(b)(vi) OPR

¹⁰ Clearcut; Section 20(1)(b)(iii) OPR

¹¹ BEC; Business requirement

¹² Landscape ID; Business requirement

¹³ Year of Harvest; Section 20(1)(b)(i) OPR

¹⁴ Species Composition; Section 18(1)(a) OPR

¹⁵ Age Class; Section 18(1)(a) OPR

Road Maintenance, Construction and Modification Table

¹⁶ Map Reference; Business requirement

¹⁷ Geographic Location; Business requirement

¹⁸ Road ID; Business requirement

¹⁹ Road Name; Business requirement

- ²⁰ Year; (If Critical); Section 18(1)(h) OPR
- ²¹ Type of Works; Section 18(1)(h) OPR
- ²² Length (to nearest 0.1 km); Section 18(1)(h) OPR
- ²³ Bridge Type; Section 18(1)(k) OPR
- ²⁴ Bridge/Major Culverts Location (Date if Outside); Business requirement
- ²⁵ Bridge/Major Culverts In Stream Work; Business requirement
- ²⁶ Joint Approval, Business requirement
- ²⁷ Riparian Class; Section 18 (1)(h)(iv) OPR

Interim Road Deactivation Table

- ²⁸ Map Reference; Business requirement
- ²⁹ Geographic Location; Business requirement
- ³⁰ Road ID; Business requirement
- ³¹ Road Name; Business requirement
- ³² Year of Deactivation; Section 18(1)(n) OPR
- ³³ Level of Deactivation; Section 18(1)(n) OPR