



Mainland Coast
FSP Background
Information
(Incorporating Amendment #1)

April 15, 2008

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1.0 Introduction

This document does not form part of the Forest Stewardship Plan (FSP or the Plan). The following document provides supporting information to the FSP to aid review and comment and provide direction to those implementing the Plan.

The FSP and backgrounder have been amended to incorporate the necessary changes to address the Central and North Coast Order objectives. The amended documents replace the original FSP and backgrounder upon approval. There are no changes to any original appendices.

2.0 Mapping

For the purposes of FPPR s. 14(2), the FSP map illustrates the designations that were in effect 4 months prior to the date of submission:

- Ungulate Winter Ranges
- Wildlife Habitat Areas
- Recreation Resource Features
- Scenic Areas
- Community Watersheds
- Areas where commercial timber harvesting is prohibited by another enactment
- Areas under permits held by the FSP Holder

Forest Development Units (FDUs) are shown on the appended maps and Table 1 describes the FDUs covered by this Plan.

Table 1: Description of FDUs

FDU	Description
A	WFP tenure within the area covered by the South Central Coast Order
B	WFP tenure within the area covered by the Central and North Coast Order

3.0 Results and Strategies

This section provides supporting information, where deemed necessary, for the results and strategies set in the Forest Stewardship Plan.

Land Use Objectives

Order Establishing Provincial Non-Spatial Old Growth Objectives

Since the time of the original submission for review and comment, it has been confirmed, as per Part B of the Order, that the Order ceased to be in effect for FDU A on the effective date of the South Central Coast Order establishing old forest objectives. Similarly, the Non-Spatial Old Growth Order ceased to be in effect for FDU B on the effective date of the Central and North Coast Order establishing old forest objectives. The South Central Coast and Central and North Coast Orders require higher levels of old forest retention than those specified for old growth in the Non-Spatial Old Growth Order.

The strategy to address landscape level biodiversity and management of old forest within FDU A and B (the entire Plan area) will be in compliance with Objective 14 of the South Central Coast and Central and North Coast Orders.

South Central and Central and North Coast Orders

The South Central Coast Order, as it was available at the time of FSP submission, contained a significant number of errors and ambiguity. In some cases, the FSP Holder has provided clarifying interpretation to assist with result or strategy preparation and implementation (e.g. “critical”, “occurrence”, “clearcut harvest system” and “partial cut silviculture system”). It is our understanding that the Order will be re-issued in the future to address some of these concerns. This Order is applicable to FDU A.

The Central and North Coast Order applies to FDU B and requires mandatory FSP amendment. The amended FSP and background document have been revised to include results or strategies to address the objectives of the Central and North Coast Order that were not addressed with the original FSP submission (objectives 7, 14 and 16 of the Central and North Coast Order were addressed in the original FSP). Minor revisions have also been made to the “Riparian Areas” section of the FSP as a result of the introduction of the Central and North Coast Order.

While the South Central and Central and North Coast Orders contain the same general objectives, there are enough differences to preclude a common result or strategy across the Plan area for all objectives. Results and strategies apply to the FDUs as specified in the FSP document under the common objective titles.

First Nations’ Traditional Forest Resources

The strategy to address this objective is based on communication and information sharing. The FSP Holder will, during the course of information sharing, ensure that information provided is detailed enough for the applicable First Nation(s) to consider the potential impact of the proposed activity. More importantly, the FSP Holder expects the First Nation(s) to provide information regarding their traditional forest resource uses for food, social and ceremonial purposes. Without information from the First Nation(s) regarding the nature and extent of traditional forest resource use within the Plan area, the FSP Holder will have a limited ability to cooperatively maintain those resources to satisfy the intent of the objective.

Where a First Nation identifies a conflict between a proposed activity and a traditional forest resource use, the FSP Holder, upon confirmation of the conflict, will attempt to accommodate the concern and where necessary, revise plans to address both parties. Where agreement cannot be reached regarding a potential conflict, the FSP Holder may refer the matter to the appropriate government agency.

Where efforts to meet, and share information, with a First Nation(s) are unsuccessful, the FSP Holder will rely on government to consult with the applicable First Nation(s) in conjunction with the approval of harvesting and/or road construction applications in the Plan area.

First Nations’ Traditional Heritage Features

The FSP Holder will continue to conduct archeological assessments during the course of strategic and operational planning based on factors including: Archeological Overview Assessment results, local knowledge of areas with moderate or high archaeological value, results of previous surveys, forest cover information, information shared by a First Nation or on recommendation of an archaeologist. Wherever possible, a representative(s) from the applicable First Nation is invited to be involved in archeological field reconnaissance.

Where traditional heritage resource features are identified, management zones will be established to protect the integrity of the feature. It is the responsibility of the prescribing professional (RPF signing the Site Plan) to ensure the management zone is sufficient to protect the integrity of the feature, giving consideration to biotic and abiotic factors that may influence the area in the foreseeable future.

Management zone width may vary from one feature to another depending on site specific issues and the nature of the feature. Additionally, the management zone width may vary around an individual feature (e.g. wider buffer on the windward edge than the leeward edge).

Harvesting within a management zone established to protect the feature is acceptable provided the integrity of the feature is maintained and the harvesting is not in conflict with other applicable results or strategies.

Alteration or removal of a traditional heritage feature will be subject to any applicable requirements of the *Heritage Conservation Act*, in addition to the information sharing or consultation process defined in the applicable Order and strategy.

Within FDU B, where information sharing or consultation carried out in conjunction with consideration of altering or removing a traditional heritage feature identifies the potential for a material adverse impact to a traditional heritage feature that is of continuing importance and there is no practicable alternative, the FSP Holder will identify specific measures to address the material adverse impact. Measures to address a material adverse impact to a traditional heritage feature will be documented and identified to the applicable First Nation during the course of information sharing. While it is the intent of the FSP Holder to resolve the matter with the applicable First Nation in a mutually agreeable manner, consideration of “accommodation” will not be judged by the FSP Holder.

Culturally Modified Trees and Culturally Modified Tree Areas

The FSP Holder will continue to conduct archeological assessments during the course of strategic and operational planning. Wherever possible, a representative(s) from the applicable First Nation is invited to be involved in archeological field reconnaissance.

Where CMTs or CMT areas, as defined by the Orders, are identified, management zones will be established to protect the integrity of the feature. It is the responsibility of the prescribing professional (RPF signing the Site Plan) to ensure the management zone is sufficient to protect the integrity of the CMT, or CMT area, giving consideration to biotic and abiotic factors that may influence the area in the foreseeable future. Management zones may vary, as described for heritage features above.

Harvesting within a management zone established to protect a CMT, that is not part of a CMT area, is acceptable provided the integrity of the CMT is maintained and the harvesting is not in conflict with other applicable results or strategies.

Alteration or harvesting of a CMT, or a CMT within a CMT area, will be subject to any applicable requirements of the *Heritage Conservation Act*, in addition to the process defined in the applicable Order.

Within FDU B, where information sharing or consultation carried out in conjunction with consideration of altering or harvesting a CMT identifies the potential for a material adverse impact to a CMT that is of continuing importance and there is no practicable alternative, the FSP Holder will identify specific measures to address the material adverse impact. Measures to address a material adverse impact to a CMT will be documented and identified to the applicable First Nation during the course of information sharing. While it is the intent of the FSP Holder to resolve the matter with the applicable First Nation in a mutually agreeable manner, consideration of “accommodation” will not be judged by the FSP Holder.

The Orders require that CMT areas, be retained at the stand and landscape level where practicable. At the stand level, CMT areas identified in conjunction with cutblock planning will be considered for retention (internal or external) and may influence final cutblock configuration. At the landscape level, CMT areas may be considered for inclusion in landscape level reserves (e.g. wildlife habitat areas, old growth retention areas etc.), where practicable.

Monumental Cedar

The strategy to address monumental cedar relies on First Nations providing the FSP Holder with information specific enough to facilitate analysis of the supply of monumental cedar necessary to support present and future cultural use. The definition of monumental cedar provided in the Order is broad, and effectively includes any cedar (red or yellow) that meets a cultural need of a First Nation, regardless of size, quality or abundance. With that in mind, First Nations will have to clearly define their present and future cultural needs for cedar (e.g. cedar bark, carving material, canoe logs etc.) and the associated specifications of cedar required to maintain each cultural need.

The strategy proposed by the FSP Holder is meant to provide the “ground work” to address the long term supply of monumental cedar, with consideration to future demand issues as they relate to population growth and long term requirements for infrastructure. In the short term, consistent with current practices of the FSP Holder, requests for monumental cedar may be fulfilled from active operating areas, including dryland sorts, where practicable.

The Central and North Coast Order provides more specific direction with respect to monumental cedar within areas where road construction and timber harvesting are proposed within FDU B. Provided that specifications for monumental cedar are provided to the FSP Holder by the applicable First Nation, the FSP Holder will identify monumental cedar, meeting the specifications, within areas planned for Road construction and timber harvesting during the course of operational planning. Where monumental cedar are identified and information sharing determines them to be suitable for cultural use, they will be reserved from harvest by the FSP Holder unless a condition of s. 6(3) of the Order applies. Where information sharing or consultation carried out in conjunction with consideration of harvesting a monumental cedar, as per s. 6(3), identifies the potential for a material adverse impact to a monumental cedar that is of continuing importance and there is no practicable alternative, the FSP Holder will identify specific measures to address the material adverse impact. Measures to address a material adverse impact to a monumental cedar will be documented and identified to the applicable First Nation during the course of information sharing. While it is the intent of the FSP Holder to resolve the matter with the applicable First Nation in a mutually agreeable manner, consideration of “accommodation” will not be judged by the FSP Holder.

First Nation Demand for Cedar

Although the objectives for monumental cedar are ultimately focused on maintaining a long term supply, some information exists regarding short term demand. This existing information can be utilized to consider the potential demand for monumental cedar from the plan area over the term of the plan.

The FSP Holder has a long history of cooperating with First Nations to fulfill requests for monumental cedar. During the five year period from 1998 to 2003, the Mainland Coast Operation donated approximately 580 m³ of cedar, for various cultural end uses, from operations in both the Campbell River and North Island-Central Coast Forest Districts.

Data from the North Island Central Coast Forest District, collected over the past +/- 7 years, indicates that +/- 3300 m³ of cedar was provided to First Nations by various tenure holders in the District (approximately 25% of this volume was donated by Western Forest Products Inc.). Data from the Campbell River Forest District, collected over the past +/- 7 years, indicates that +/- 1550m³ of cedar was provided to First Nations. Data was not available from the North Coast Forest District but based on the relative size of the District, 2000 m³ is used for the purpose of this exercise.

Based on combined District information, and the assumption for the North Coast Forest District, nearly 1000 m³ of cedar may be provided to First Nations annually from multiple tenures and licensees. Projecting this amount forward, 5000 m³ represents an estimate of cedar demand over the term of the plan across the Districts.

The plan area represents 5% of the combined forest district area. Conservatively, using 15% to prorate, approximately 750 m³ is the estimated demand from the plan area over the term of the plan.

Cedar Supply

Although the definition of monumental cedar does not indicate the specifications of monumental cedar for various cultural uses, the FSP Holder assumes that the majority of cedar required for cultural use will come from relatively productive stands where cedar trees are generally abundant and of good quality. Monumental cedar will also exist, to varying degrees, throughout the Plan area in stands where cedar is not the leading species.

The FSP Holder has analyzed Landscape Units, or portions thereof, within the Plan area for the presence of cedar leading stands by site index (relative productivity) and seral stage to demonstrate the availability of “good” cedar stands across the Plan area over time, and indirectly, across asserted First Nations territories. The site index classes shown below also correspond with the site series surrogates found in the Orders (SAU4 – Cedar Good and SAU5 – Cedar Medium). The results of the analysis are summarized in Table 2.

Based on the data summarized in Table 2, there are more than 2500 hectares of productive, old growth, cedar leading stands within the plan area. A conservative estimate of cedar in these stands alone would exceed 500,000 m³. Based on this data and consideration of the presence of cedar, to varying degrees, in stands where cedar is not the leading species, the FSP Holder contends that the potential supply of monumental cedar is available to satisfy projected short term demand over the term of the plan. It is also important to note that Western Forest Products Inc. is a major tenure holder on the BC coast and requests for monumental cedar are often handled at the corporate level and thus the potential supply of monumental cedar is not necessarily limited to the area covered by this plan.

Proportionality and Distribution

Unless it is demonstrated that the supply of cedar is unavailable or limited in portions of a First Nations asserted territory outside the Plan area, the FSP Holder will maintain a supply of monumental cedar proportional to the amount of the traditional territory contained within the Plan area. The concern here is that the FSP Holder may be expected to fulfill additional demands based simply on the presence of a “good” relationship with a First Nation, rather than based on its proportional supply.

The FSP Holder recognizes that the distribution of monumental cedar within a First Nation’s territory, and First Nation preferences or specific requirements, may result in the need to supply or maintain monumental cedar beyond proportional amounts. The FSP Holder anticipates that information sharing with First Nations will identify specific issues and limitations within traditional territories.

Table 2: Presence of Cedar Leading Stands within the Plan Area by Site Index and Seral Stage.

Landscape Unit	Productive Plan Area (ha)	Early Seral, Cw Leading (ha)		Mid Seral, Cw Leading (ha)		Old Seral, Cw Leading (ha)	
		SI>23	SI 16-23	SI>23	SI 16-23	SI>23	SI 16-23
Ahta	267		4				46
Allison	563		30	1	30		58
Broughton	4396	527	469	42	150		339
Clyak	9552		213				381
Don Peninsula	20134					111	2018
Doos/Dallery	7393		53				202
Draney	784	106					67
Ellerslie	12869						2329
Estero	175		1				3
Fulmore	7479	392	395	4	174		386
Gilford	290						3
Green	30608					9	1568
Huaskin	236		1				68
Kakweiken	485						19
Khutze	1060						51
Kilbella/Chuckwalla	50746	14	286	9			677
Knight East	1878	3					67
Laredo	845						25
Lull-Sallie	7815	58	357		17		338
Miriam	2308	5	145	71		5	299
Neechanz	4318						114
Nekite	25677		264	16			1100
Nootum/Koeye	7594	65	160				316
Owikeno	776						39
Phillips	33483	893	289		17	1026	1150
Roderick	37475	85	646			15	5966
Snowdrift	6655	38	580	1	23	3	410
Stafford	41654	185	339	20	47	30	3853
Swindle	8682						737
Tolmie	15645						2581
Yeo	7052						798

Stand Level Retention for First Nations and Biodiversity

Because the definition of monumental cedar is broad, objectives for monumental cedar, and associated strategies, are complimentary to the objective for stand level retention of cedar. Stand level retention may contribute to the supply of cedar to support a cultural use while satisfying requirements for the maintenance of stand level biodiversity, and vice versa. As such, the strategy proposed has been designed to address both objectives that relate to stand level retention (Objectives 7 and 16).

Furthermore, with the introduction of the Central and North Coast Order, and nearly identical objectives for stand level retention, the strategy has been designed to apply to the both FDUs A and B and satisfy both Orders.

Stand level retention is also addressed through other results or strategies applicable to FDUs A and B (e.g. wildlife tree retention areas).

As stated, the strategy for stand level retention applies to all cutblocks, regardless of silviculture or harvest system, consistent with the intent of the Orders. Furthermore, the strategy applies to all retention regardless of whether it is dispersed or in groups or aggregates.

Identification of specific volumes or quality of western red or yellow cedar to be maintained for cultural use will be determined primarily through the strategies and processes described to address the objectives for monumental cedar. Where a specific cedar need is identified and is found to exist in the area of the cutblock, stand level retention will be used as a tool to ensure it is maintained or reserved as per the requirements of the applicable Order.

For the purpose of calculating the retention level as required by s. 16(1)(a) of the Orders, the gross harvest area (denominator) is defined as the net area to reforest plus roads (i.e. NAR + NP UNN). The calculation will be based on area.

Where mature or old western or yellow cedar is present in the pre-harvest stand, the first 15% of the total retained basal area will be representative of that stand component. Although this requirement may be satisfied indirectly by retaining 15% of the cutblock area to meet s. 16(1)(a) of the Order(s), the retained basal area amount necessary to satisfy s. 7(2) will be confirmed.

Where practicable, retention will be designed to include stand attributes listed in s. 16(2) of the Orders.

Important Fisheries Watersheds

Important fisheries watersheds (IFWs) are specified in Order schedules. These watersheds are not considered fisheries sensitive watersheds as defined by s. 8.1 of the FPPR.

A 20% Equivalent Clearcut Area (ECA) for an IFW, or portion thereof contained in the Plan area, is used as a trigger to conduct a watershed assessment. Watershed ECA will be initially calculated using the total forested portion of the watershed area; further assessments will follow recognized procedures for coastal watershed assessment or similar procedures for assessment of watershed sensitivity to a relevant professional standard.

Upon Plan approval, the FSP Holder will assess the ECA status of IFWs, on a priority basis, as dictated by harvest schedules and associated cutting permit applications. Where the initial assessment indicates that the ECA exceeds, or is approaching, 20%, the FSP Holder will schedule formal watershed assessments, as required to support operational needs. Where initial ECA assessment is well below the 20% threshold, the FSP Holder will continue to plan activities in the watershed and schedule future formal watershed assessments as necessary.

The FSP Holder's primary forest activities will be designed to maintain an ECA of less than 20% within specified important fisheries watersheds, or portions thereof, contained within the Plan area, unless a higher ECA is established in accordance with s. 8(2) of the applicable Order.

Where other license holders are present within an IFW, the FSP Holder will communicate and share information necessary to plan harvest activities to meet the intent of this objective, where practicable. Where the FSP Holder's license covers the majority of the watershed, the FSP Holder may elect to coordinate assessment efforts for the entire watershed as the "lead licensee". The FSP Holder is only accountable for its own actions within these watersheds.

Where an ECA exceeding 20% will be maintained, the FSP Holder will document the process to establish the higher ECA as per the requirements of s. 8(2) of the applicable Order.

Upland Streams

The objective for important fisheries watersheds ensures equivalent clearcut area (ECA) is managed at the watershed scale. Given that upland stream areas account for the majority of a given watershed, the ECA constraints associated with the watershed as a whole, play a major role in guiding or limiting activity in upland areas that might impact functional riparian forest.

The objective for upland streams in the South Central Coast Order is applicable only to those IFWs identified in Schedule 2 of the Order. In contrast, the objective for upland streams in the Central and North Coast Order is applicable to ALL watersheds in the area covered by the Order.

In monitoring watershed condition to satisfy the objective for upland streams, the FSP Holder intends to conservatively determine, on a priority basis as determined by operational planning requirements, the area that has reached hydrologically effective greenup as a baseline to guide development in applicable watersheds. Hydrologically effective greenup is the key element of the definition of functional riparian forest. Qualified professionals will be utilized for guidance where necessary and relevant information and supporting rationales will be documented.

Provided that the area of hydrologically effective greenup in upland portions of watersheds is maintained at 70% or more and some large trees are retained adjacent to upland streams during the course of operational planning, the requirement of the objective will be met.

Where other license holders are present within an applicable watershed, the FSP Holder will communicate and share information necessary to plan harvest activities to meet this objective. Where the FSP Holder's license covers the majority of the watershed, the FSP Holder may elect to coordinate assessment efforts for the entire watershed as the "lead licensee". The FSP Holder is only accountable for its own actions within these watersheds.

High Value Fish Habitat

For the purpose of further defining high value fish habitat (HVFH), "critical", as it pertains to spawning and rearing areas in the Order definition, is defined as habitat that limits the population or is necessary to sustain the population or capacity of a system, or as otherwise determined by a qualified professional. For clarity, all spawning and rearing areas may not be HVFH.

With respect to s. 9(3) of the Orders, functional riparian forest means forest that has reached hydrologically effective green-up and that may contain some large trees to provide for large organic debris. The Order restricts the definition by stipulating that "large trees adjacent to streams to provide for large organic debris" must be present. This revised definition is applicable to all results and strategies addressing objectives with a reference to functional riparian forest.

The “height of dominant trees” used to establish buffer requirements will be determined through a measurable and verifiable approach (e.g. field estimates, inventory stand height etc.) applicable to all objectives in the Orders where consideration of dominant tree height is necessary.

The average reserve zone width will be based on the length of the section, or sections, of cutblock boundary adjacent to the HVFH. Each distinctly separate HVFH occurrence has its own average reserve zone width (i.e. the “average” is not determined across HVFHs).

Aquatic Habitat that is not High Value Fish Habitat

Within FDU A, the FSP Holder may choose to follow the default as per s. 10 (1) and 10 (2) of the South Central Coast Order. Where the FSP Holder chooses the FRPA option (s. 10 (3) of the Order), and plans to alter or harvest forest within a required RMA, the FSP Holder will adhere to conditions listed in s. 10 (4) of the Order.

The Central and North Coast Order does not provide the FRPA option for FDU B, but does allow the amount of functional riparian forest retained to be reduced to 70%, with conditions. The introduction of a second size category of lakes and marsh and fen wetlands may require field verification of size in order to establish the appropriate management zone, particularly where a feature is close to 1 hectare in size.

Where a management zone, other than a management zone required as per s. 10(3) of the South Central Coast Order, is established, the average width will be based on the length of the section, or sections, of cutblock boundary adjacent to the aquatic habitat. Each distinct occurrence of specified aquatic habitat has its own average management zone width (i.e. the “average” is not determined across aquatic habitats).

Maintenance of stream bank stability and channel integrity will be considered by a qualified professional at the site level. Cutblock proposals are routinely reviewed with the applicable First Nation prior to submission for Cutting Permit. During this review, any planned harvesting or altering within RMA’s or management zones will be presented.

Forested Swamps

Where harvesting within the management zone established for a forested swamp > 0.25 ha is planned, the percentage of forest retained or removed, as required by the Order, may be based on volume, basal area (BA) or area. The chosen measure (volume, BA or area) of percentage retention or removal may vary from one forested swamp to another, depending on local site and stand conditions, and will be documented prior to harvest.

Altering of additional forest as per s. 11(3), will be subject to s. 11(4) of the applicable Order. Maintenance of the integrity of the forested swamp will be considered by the prescribing professional at the site level. Cutblock proposals are routinely reviewed with the applicable First Nation prior to submission for Cutting Permit. During this review, planned harvesting or altering beyond the 70% threshold will be presented.

The average management zone width will be based on the length of the section, or sections, of cutblock boundary adjacent to the forested swamp. Each forested swamp has its own average management zone width (i.e. the “average” is not determined across forested swamps).

Active Fluvial Units

Within FDU A:

For clarity, retention for an active fluvial unit (AFU), as stated in s.13(1) of the South Central Coast Order, is required on the AFU, not as a percentage of a buffer established beyond the limits of the AFU.

Once an AFU is identified within FDU A, the FSP Holder will, whenever possible, reserve the AFU and establish a functional buffer to protect the sensitivities of the feature. Where the forest on the AFU cannot be reserved in its entirety, the FSP Holder will comply with the limits set out in the Order.

Within FDU B:

Retention requirements for AFUs within the Central and North Coast Order area are different. Adjacent to AFUs identified in FDU B, 90% of the functional riparian forest must be retained within a management zone with a width, on average, equal to 1.5 times the height of dominant trees. This management zone can be increased or decreased as described in the Order, similar to other objectives requiring the establishment of management zones.

The average management zone width will be based on the length of the section, or sections, of cutblock boundary adjacent to the AFU. Each AFU has its own average management zone width (i.e. the “average” is not determined across AFUs).

Where harvesting on an AFU (FDU A) or within an AFU management zone (FDU B) is planned, the percentage of forest retained or removed, as required by the applicable Order, may be based on volume, basal area (BA) or area. The chosen measure (volume, BA or area) of percentage retention or removal may vary from one AFU to another, depending on local site and stand conditions, and will be documented prior to harvest.

Where altering or harvesting of greater than 10% of the forest on an AFU (FDU A) or within an AFU management zone (FDU B) is necessary, it will be subject to the requirements of the applicable Order. Maintenance of stream bank stability and channel integrity will be considered by a qualified professional at the site level. Cutblock proposals are routinely reviewed with the applicable First Nation prior to submission for Cutting Permit. During this review, planned harvesting or altering of the functional riparian forest will be presented.

Landscape Level Biodiversity

For FDU A and B, the FSP Holder will maintain the necessary data to track its impact on Landscape Unit (LU) level representation. The FSP Holder will work with the Ministry of Forests and Range to establish a common dataset and tracking system to address the objective.

Where there is less than the required amount of old forest available in the LU, the FSP Holder will recruit forest, on a proportional basis, within 180 years, where practicable. Recruitment will be based on the proportional amount of the SSS present in the Plan area. For example, if 30% of the total SSS for the LU is contained in FDU A, then 30% of the LU recruitment amount will be satisfied within the Plan area.

Unless operations can be effectively coordinated amongst Licensees within a LU, where a SSS is identified to be in surplus in a LU, the FSP Holder may harvest a proportional amount of the surplus SSS. The proportional amount for harvest would be based on representation of the SSS, as described above, and would provide some certainty to justify operational planning expenditures. Despite this proportional harvest approach, the FSP Holder does not intend to create a deficit situation through its primary forest activities.

Red and Blue-listed Plant Communities

For the purpose of further defining “occurrence” of a red or blue-listed plant community, an occurrence may include contiguous area outside of the area covered by this FSP for the purpose of calculating impact to the occurrence.

Identification of red and blue listed plant communities will consider the applicable seral or structural stage and associated Biogeoclimatic Ecosystem Classification that defines the community.

Where Terrestrial Ecosystem Mapping (TEM) is available, or becomes available during the term of the Plan, it may be utilized to facilitate landscape level protection of blue-listed communities. In these LUs, TEM data can be used to identify the total amount of each existing blue-listed community. Impacts to the blue listed communities within the Plan area can then be tracked to maintain the protection requirements of the Order.

In LUs where TEM mapping is unavailable, blue listed plant community protection will be based on each individual occurrence as described in the Order. If TEM mapping becomes available at a later time, landscape level protection of blue listed plant communities may then commence for the LU.

Once landscape level protection is confirmed, further occurrences of a blue-listed plant community may be considered for incorporation into stand level retention but no specific retention target would apply.

Where more than one licensee occupies a landscape unit, communication and information sharing will occur, where practicable, to meet the intent of the objective.

Sensitive Grizzly Bear Habitat

Within FDU A, the FSP Holder will maintain the sensitive grizzly bear habitat as identified in Schedule 6 of the South Central Coast Order.

Within FDU B, the FSP Holder will maintain the required critical grizzly bear habitat once identified in Schedule 2 of the Central and North Coast Order.

At least 50% of the class 2 critical grizzly bear habitat identified in FDU B will be maintained unless it is determined that greater than 50% of the total critical grizzly bear habitat identified throughout the Central and North Coast Order area, has already been reserved from harvest.

The FSP Holder may communicate and share information with other license holders and government agencies as necessary to determine the status of class 2 habitat protection across the Central and North Coast Order area. As it is anticipated that some class 2 habitat may be located within areas that are already protected (e.g. riparian management areas, conservancies, etc.), the 50% requirement may already be partially, or fully, satisfied.

Adaptive Management

Where objectives of the South Central Coast Order require development and implementation of an adaptive management plan, the FSP Holder is committed to the EBM Working Group’s (EBMWG) Adaptive Management Program and will assist with the implementation and monitoring of activities as priorities are established by the group.

The definition of adaptive management used by the EBMWG is as follows:

"Adaptive management is a systematic approach for improving resource management by learning from management outcomes. It involves:

- *exploring alternative ways to meet management objectives*
- *predicting the outcomes of alternatives based on the current state of knowledge*
- *implementing one or more of these alternatives*
- *monitoring to learn about the impacts and using results to update knowledge and adjust management actions."*

Current thinking for EBM on the coast suggests that it requires experiments and effective monitoring strategies at large spatial scales, using indicators with long response times within high levels of natural variability. The intent is not that there will be experimental designs and/or effectiveness monitoring on every watershed, ecosystem, or cutblock where flexibility with a management target is considered. Sample watersheds and/or cutblocks may be chosen to inform decision-making and the evolution of objectives and guidelines across tenures throughout the South Central and North Coast.

For initial direction, managers must use the best information available and exercise precaution where outcomes are uncertain. A framework for an adaptive management program is currently being designed by the EBMWG. The FSP Holder supports, and contributes to, this process.

In the interim period between FSP approval and establishment of adaptive management priorities and plans by the EBMWG, the following process will be implemented when flexibility options requiring an adaptive management plan, are exercised:

- the location and description of each "situation" where flexibility is being used will be recorded in the planning documents associated with the cutblock or area,
- the rationale for the use of the flexibility will be documented, and where required, advice will be sought from the appropriate qualified professional(s), and
- details of each "situation" will be provided to the EBMWG.

Where necessary, the FSP Holder will revisit "interim period" cutblocks to collect further information in support of subsequently established adaptive management priorities and plans.

Objectives Prescribed Under Legislation

Soils

Practice requirements are adopted for the results or strategies regarding soil disturbance and permanent access structures. A conditional exemption under FPPR s. 12.2 does not apply.

Timber

As per FPPR s. 12(8), there is an exemption from writing a result or strategy for the objectives set by government for timber (FPPR s. 6).

Wildlife

Ungulate Winter Ranges (UWR)

Ungulate Winter Ranges U-1-003, U-5-004 and U-5-005 have been established within the Plan area by Order of the Minister. The Orders exempt the FSP Holder, for the TSA or TFL specified, from the obligation to specify a result or strategy herein. Legal requirements are set out in the Orders.

Ungulate Winter Range U-1-005 has been established in the Strathcona TSA, outside the FSP Holder's tenure, and provides exemption from the obligation to specify a result or strategy for ungulates in the Strathcona TSA.

Ungulate Winter Range U-5-004 expires on December 31, 2009, at which time it will be reviewed and a determination made whether to continue, amend or rescind these measures. Unless continued or otherwise amended prior to expiry, this UWR will cease to apply to the Plan area on January 1, 2010.

There is no Plan area contained within the North Coast Timber Supply Area, as such, the "Notice – Indicators of the Amount, Distribution and Attributes of Wildlife Habitat Required for the Winter Survival of Ungulate Species in the North Coast Timber Supply Area" does not apply. A similar Notice has not been issued for the portion of TFL 25 contained in the North Coast Forest District.

Applicable UWR Orders and Notices pertaining to Ungulates are included in Appendix 1, for reference purposes.

Wildlife Habitat Areas (WHAs)

The appended FSP map shows the location of WHAs established for species at risk within the Plan area at the time of submission.

Within the North Island – Central Coast Forest District, WHAs 5-120 to 5-541 have been established for grizzly bear, some of these polygons are contained within the Plan area. WHA 1-073 has also been established for Coastal Tailed Frog within the Plan area.

Within the Campbell River Forest District, WHAs 2-073, 2-074 and 2-075 are established for grizzly bear in the Phillips Landscape Unit.

There are no WHAs in the portion of the Plan area within the North Coast Forest District.

Species at Risk

Notices have been provided by the Ministry of Environment (formerly Ministry of Water, Land and Air Protection) indicating the amount, distribution and attributes of wildlife habitat required for the survival of species at risk in each Forest District overlapping the Plan area.

The following comments provide clarification and supporting information to the result or strategy set in the FSP for identified species at risk within the Plan area.

Marbled Murrelet

Potentially suitable marbled murrelet habitat within FDU A and B has been modeled using selected parameters from the marbled murrelet recovery team¹: stand age class (8 and 9) and tree height class (>3). These are the standard parameters used when modeling habitat using forest cover and will tend to overestimate the habitat. The GIS-based habitat model can be further refined and/or replaced by undertaking low-level aerial surveys. Aerial surveys are used to field check and rank potentially suitable marbled murrelet nesting habitat and are conducted using the provincial low-level aerial survey standards². Interfor, MOE or WFP have completed surveys on the following landscape units in the general area of the Plan: Bute West, Broughton, Draney, Estero, Fulmore, Gilford and Gray. WFP is currently undertaking surveys in the Stafford and Phillips landscape units (TFL 25 Block 2 and TFL 39 Block 5), which are expected to be complete by March 2008. The results of these surveys will be used to refine or replace GIS-based habitat modeling and assist with landscape level planning. Additional surveys may be completed during the term of this Plan as time or funding permits.

The results of the analysis are summarized in Table 3. Results of the modeling exercise indicate that over 100,000 hectares of potentially suitable MaMu habitat exists within the Plan area. This potentially suitable habitat is split relatively equally between the THLB and the NCLB, and is distributed across Forest Districts and FDUs. Over 5,000 hectares of modeled habitat is contained within established, or draft, UWRs and WHAs. The Plan area is also adjacent, or in close proximity to, significant protected areas that will likely contain substantial suitable habitat. The implementation of the South Central Coast Order and Central and North Coast Orders provides for significant old forest retention across the Plan area.

The maximum foreseeable harvest over the term of the plan is 2000 hectares. Even if all of this harvesting occurs within potentially suitable MaMu habitat, greater than 98% of the modeled habitat will remain at FSP expiry.

¹ MMRT (Marbled Murrelet Recover Team). 2003. Marbled Murrelet Conservation Assessment 2003, Part B – Marbled Murrelet Recovery Team advisory document on conservation and management. Canadian Wildlife Service, Delta, BC. Available at: <http://www.sfu.ca/biology/wildberg/bertram/mamurt/PartB.pdf>

² Burger, Alan E. 2004. Standard Methods for Identifying and Ranking Nesting Habitat of Marbled Murrelets (*Brachyramphus marmoratus*) in British Columbia using Air Photo Interpretation and Low-level Aerial Surveys. Ministry of Water, Land and Air Protection, Biodiversity Branch, Victoria, BC. Available at: http://wlapwww.gov.bc.ca/wld/documents/fia_docs/mamu_standard.pdf

Table 3: Modeled Suitable MaMu Habitat within FDU A and B

Forest District	FDU	Modeled Habitat	Modeled MAMU Habitat in Contributing & Partially Contributing	Modeled MAMU Habitat in Non Contributing & Excluded	Total Modeled MAMU Habitat	Modeled Habitat in Approved UWR and WHA	Modeled Habitat in Proposed UWR and WHA
NI-CC	A	Age Class 9; Height Class \geq 4	6,234.38	4,584.12	10,818.50	797.87	0
		Age Class 8; Height Class \geq 4	664.14	906.41	1,570.55	41.06	0
	B	Age Class 9; Height Class \geq 4	33,017.60	19,160.16	52,177.76	3668.04	0
		Age Class 8; Height Class \geq 4	3,705.36	971.14	4,676.50	905.24	0
CR	A	Age Class 9; Height Class \geq 4	9,365.26	13,499.99	22,865.25	169.08	62.30
		Age Class 8; Height Class \geq 4	376.93	215.18	592.11	2.39	0
NC	B	Age Class 9; Height Class \geq 4	9,131.48	6,452.86	15,584.34	0	0
		Age Class 8; Height Class \geq 4	197.24	40.47	237.71	0	0
Totals:			62,692.39	45,830.33	108,522.72	5,583.68	62.30

The FSP Holder will maintain the amount of modeled habitat in the Non Contributing Landbase, as per the requirements of the applicable Notices, as summarized in Table 4. Harvesting may occur within suitable nesting habitat within the NCLB, provided the amounts indicated below are maintained by substituting suitable area from the THLB in addition to the specified proportional THLB requirements found in Table 5. Substitution of habitat from the THLB will be documented and occur with input from a qualified professional.

Table 4: Suitable Habitat Amounts to be Maintained in the NCLB

Forest District	Suitable Habitat to Maintain in the NCLB
North Island – Central Coast	25,622 ha
Campbell River	13,716 ha
North Coast	6494 ha

Within the THLB, the FSP Holder will also retain an amount of modeled suitable habitat proportional to the amount of Plan area represented in each District, to meet Notice requirements, as summarized in Table 5. District areas have been reduced to exclude ocean. The proportional retention requirements have been rounded upwards to the nearest full percentage.

Despite the amounts specified in Table 5, the FSP Holder recognizes that higher amounts of habitat retention may be necessary within the Plan area if habitat distribution limits retention opportunities in other tenures within the District.

Table 5: Proportional Suitable MaMu Habitat Retention Requirements in the THLB.

Forest District	Total District Area (ha)	Total Plan Area (ha)	Proportion (%)	Applicable Notice Amount (ha)	THLB Retention Amount (ha)
NI-CC	4,917,936.74	263,226.09	6	1434	87
CR	1,473,553.43	112,930.28	8	1322	106
NC	2,113,992.46	51,908.40	3	375	12

The boundaries of the non-contributing landbase may be adjusted through the course of site level planning where operability limits will be confirmed on the ground (for example - an area of suitable MaMu habitat identified as ‘unstable’ through reconnaissance level mapping may, in fact, be assessed in the field as having a “Moderate” or “Low” risk of post-harvest instability. Based on this assessment, the previously identified “inoperable” area may be included in the harvest area of a cutblock). However, the net area of suitable MaMu nesting habitat in the non-contributing landbase will be not be changed.

The FSP Holder will produce mapping reflecting the location of modeled suitable habitat to assist with operational planning and tracking of Notice requirements within 6 months of the approval date of this FSP. Harvesting in the first 6 months after FSP approval will have a minimal impact on the availability of modeled suitable habitat based on its abundance within the Plan area.

Queen Charlotte Goshawk

A result or strategy is not included for Queen Charlotte Goshawk as the Order establishing Wildlife Habitat Areas for this species specifies that Licensees are exempt from this requirement in the Campbell River Forest District.

There are no approved WHAs for goshawks in the Plan area.

Within the Mid Coast TSA portion of the North Island – Central Coast Forest District, the FSP Holder will propose areas potentially suitable for WHAs, until otherwise exempted.

Within the North Coast Forest District, the FSP Holder will propose areas potentially suitable for WHAs. The FSP Holder understands that draft WHAs have been proposed to satisfy the Notice requirements outside of the Plan area. Once these WHAs are established by Order, the FSP Holder expects to be exempt from the obligation to provide a result or strategy for Queen Charlotte Goshawk in the NCFD.

Although wildlife habitat features have not been established by GAR in the Plan area, in consideration of the intent of FPPR s. 70(2), additional nest sites will be managed on a site specific basis in consultation with the appropriate agencies and with consideration of impacts to the THLB. Any THLB impact associated with maintaining the following sites will contribute to the THLB requirements of the relevant Notice, subject to agreement with the agency responsible for the Notice:

- a) nest sites within WHA's proposed by the FSP Holder(s) and subsequently declined by the Ministry responsible for the Notice, and
- b) nest sites, throughout the Plan area, that are determined to be unsuitable for WHA proposals.

Grizzly Bear

A result or strategy is not included for grizzly bear as the *Order – Wildlife Habitat Areas in Ministry of Environment Region 5 (Cariboo), North Island – Central Coast Forest District and Mid Coast TSA* (February 27, 2007) provides an exemption under FPPR 7(3) for the Midcoast TSA. Note that the Order incorrectly provides exemption for the North Island – Central Coast TSA (there is no such TSA). It was confirmed through personal communication with Ken Dunsworth, MoE, that the exemption applies to the Mid Coast TSA.

The North Island – Central Coast Forest District Notice does not specify an amount of habitat for the Kingcome TSA or for a TFL contained in the Plan area.

Grizzly bear is not identified as a species at risk in the Campbell River or North Coast Forest Districts. Three grizzly bear WHAs were established under the Code within FDU A in the Campbell River Forest District. These WHAs (2-073, 2-074, 2-075) are grandparented under FRPA s. 180(b) and the FSP Holder will comply with the requirements of the Orders.

Objective 17 of the South Central Coast and Central and North Coast Orders, dealing with maintenance of identified sensitive or critical grizzly bear habitat, is discussed above.

Other Identified Species at Risk

The species listed in Table 6 are identified by Notice for the specified District. At the time of FSP submission, suitable habitats have not been identified in the FSP area for these species and exemptions to Notice requirements have not been provided. Notice amounts are current up to the time of FSP submission and may be reduced through subsequent establishment of WHAs.

Table 6: Summary of Notice Requirements for Remaining Identified Species at Risk by District.

Species/District	Applicable Notice Amount (ha)	
	Total	THLB
Red-legged Frog / CRFD	50	30
Keen's Long-eared Myotis / CRFD	40	30
Coastal Tailed Frog / CRFD	80	20
Coastal Tailed Frog / NI-CC FD	1549	183
Great Blue Heron / CRFD	160	24
Great Blue Heron / NI-CC FD	240	36

WHAs 6-056 and 6-057 have been established in the North Coast Forest District for Coastal Tailed Frog. The associated Order provides exemption from the obligation for the FSP Holder to specify a result or strategy for Coastal Tailed Frog in the NCFD.

In the event that suitable habitat is identified during the term of this FSP, the FSP Holder will work with the appropriate government agencies to delineate areas for WHA consideration that follow the intent of the Section 7 Notices and/or the applicable 2004 Identified Wildlife Management Strategy. This may include notification of government biologists or other interested parties and consultations with one or more experts in the biology and habitat requirements of the species as needed to determine the importance of identified habitat(s), the size, extent, likely distribution, or other attributes of the habitat, and the potential for establishment of a Wildlife Habitat Area.

Where government anticipates that more than one WHA will be established for a species to fulfill Notice requirements, the FSP Holder expects government to consider distributing those WHAs across tenures, where possible.

Regionally Important Species

There are currently no designated Regionally Important Species identified by GAR Order in the Plan area.

Wildlife Habitat Features

There are currently no Categories of Wildlife Habitat Features identified by GAR Order in the Plan area.

Riparian Areas

The strategy set out in the FSP for riparian areas is in respect of the objective set by government for water, fish, wildlife and biodiversity within riparian areas (FPPR s. 8).

Practice requirements are adopted for the results or strategies regarding stream riparian classes, wetland riparian classes and lake riparian classes as well as for riparian management within riparian management zones and temperature sensitive streams.

Retention in riparian management zones may vary from 0 to 100%. A rationale for each cutblock will be kept on file in support of the prescribed level of retention. The rationale will focus on windthrow concerns and include consideration of other relevant factors, including those specified in Schedule 1 of the FPPR. In most situations, the cutblock windthrow assessment will comprise the rationale.

The South Central and Central and North Coast Orders contain many complimentary objectives speaking to riparian issues. This is addressed in the results and strategies where necessary.

Restrictions in a RRZ – Exemption to FPPR s. 51(3)

Second growth silviculture treatments to enhance wildlife and fisheries values, create old growth characteristics, reduce windthrow potential or recruit or enhance functional riparian forest may be carried out within RRZs where funding is available to the FSP Holder. The FSP Holder will ensure that such activities are consistent with relevant strategies set out in the FSP to address the South Central and Central and North Coast Orders.

Silviculture treatments may involve stand conversion and conifer release, treatment of individual trees, juvenile spacing, pre-commercial thinning, gap creation and felling of individual trees and groups of trees across streams to provide LWD in streams where LWD is lacking. These activities would be done to improve the natural characteristics of coastal streams that have been disturbed by harvesting and/or other human-induced or natural events. As these activities are designed to improve the biological characteristics of riparian areas and streams, they are consistent with the objective set by government for water, fish, wildlife, and biodiversity in riparian areas.

Forest Practices in a RMZ

In coastal BC, windthrow presents a significant risk to post-harvest maintenance of riparian management areas (RMAs) and their associated values, particularly stream bank stability. Windthrow affects riparian areas through the introduction of large woody debris and sediment, and may initiate destabilizing processes in some stream channels; thereby compromising management objectives. Management practices in riparian zones with higher windthrow hazards will quite often focus on edge manipulation techniques to minimize these effects. Layout personnel often attempt to establish boundaries and RMAs in timber types that have a low windthrow hazard. However, in some situations it will not be possible to prevent windthrow or reduce it to acceptable levels.

Although not recognized in the purposes set out in the FPPR definitions of RRZ and RMZ, the “without unduly reducing the supply of timber” aspect of the objective suggests that in RMAs there is to be a balance between timber production and the four ecological values. As the RRZ is preserved and is therefore the focus of ecological conservation, it would seem to follow that timber production should be an important value in the RMZ. As ecological values such as wildlife and biodiversity often increase in prominence with proximity to the stream, so too should timber importance increase with distance from the stream.

Harvesting trees prone to windthrow and likely to damage water quality and fish habitat would be a win-win in that water quality and fish habitat would be conserved, and the supply of timber maintained. Thus the strategy is complementary to both objectives (FPPR s. 6 & 8). Likewise if trees in the RMZ are not crucial to the conservation of wildlife habitat or biodiversity, harvesting them in support of the “unduly clause” would seem to strike a reasonable balance between non-timber and timber interests.

Low Windthrow Hazard

The strategy hinges on the likelihood of windthrow damage to the four values stated in the objective. Where the likelihood is low, removal of trees from a RMZ adjacent to RRZ is unlikely to significantly compromise susceptibility of the RRZ to windthrow. If the trees felled in the RMZ, and their associated understory, are relatively common in terms of their habitat and biodiversity value, then harvesting would be a reasonable, balanced approach to accommodate timber objectives. If on the other hand, trees in the RMZ support specific wildlife and/or biodiversity values of significance or ecological functions along small fish bearing waters (i.e., S4), then effort would focus on conserving these values first and maintaining timber supply second. Examples of specific wildlife and/or biodiversity values may include, but would not be limited to: red-listed site series in an old seral condition, critical habitats for plant or animal species-at-risk, bear or other dens, raptor nests, perch trees, unusually high snag density, or other site-specific features identified by government or other qualified professionals.

High Windthrow Hazard

Where the likelihood of windthrow is high, removal of trees from RMZs may be a prudent approach to prevent or reduce damage to water quality and fish habitat values. This approach would be applicable where there is no adjacent RRZ, or where the windthrow hazard in an adjacent RRZ has been ameliorated using pruning/topping techniques. In the situation where there is no RRZ, but significant values exist (e.g. S4 streams, S6 gullies) retention of understory or other windfirm trees and shrubs sufficient to protect the stream values is important. Where a RRZ does exist, retention in the RMA will vary depending on local site conditions, timber and non-timber values within the RMA and consideration of the opportunity to carry out edge manipulation treatments to reduce risk.

Moderate Windthrow Hazard

Where the likelihood of windthrow is moderate, results are less predictable and implementation of strategies to balance ecological and timber values in RMZs are more difficult. Particularly in these instances, professional reliance is needed to understand, document and integrate the nuances of edaphic, topographical, tree height, tree species, prevailing storm winds, and other factors to come up with a site prescription with the highest probability of success.

It is noted however, that success is not guaranteed and a rare or unusual storm event could nullify any strategy, whether in the moderate, low, or high hazard category.

For boundary locations with a moderate or high likelihood of post-harvest windthrow within the RRZ, retention within the RMZ will vary depending on the nature of the stand. In most cases the boundary of the cutblock will be strategically located (to take advantage of topographical breaks or changes in timber type, for example). Once located, any RMZ area contained within the cutblock will be 100% harvested and the area outside the boundary will be 100% retained, as illustrated on the associated mapping. Where it is considered necessary to remove only individual trees from a portion of the RMZ (i.e. feathering) to manage windthrow risk, the amount of basal area retained will be documented as necessary to determine the application of stocking standards.

Pruning and topping treatments are a valuable part of the prescribing professional's tool kit for managing windthrow. Unfortunately, expense and human safety considerations make widespread application of these techniques impractical. They are most commonly used where they can be applied judiciously and with good result. Moderate hazard stands would be a primary example, where success can be achieved by treating the relatively few, most susceptible trees. Topping and pruning treatments would often be used in conjunction with the proposed RMZ strategy.

It is sometimes suggested that where windthrow hazard exists, the precautionary approach is to merely expand the size of the RMZ to increase the RMA buffer along the stream. However, particularly in exposed and high rainfall locations near the coast, this may simply increase the amount of forest windthrown, increase the loading of debris in streams, or perhaps trigger landslides if implemented on steep terrain or along gullies. As well, this added area of salvage will have an undue effect on the timber supply, Licensee harvesting costs/competitiveness, and the safety of workers.

Thus only where specific wildlife and/or biodiversity values of special significance are identified in the RMZ, would extraordinary efforts such as additional topping, pruning, or widening of the RMA be warranted. Associated with these efforts would be impacts on safety, delivered wood costs and timber supply.

Although the FPPR s. 8 objective to which this strategy is directed does not specifically name anadromous fish or the interests of the federal Fisheries and Oceans department, the protection of freshwater salmon habitat remains paramount under the Forest and Range Practices Act, as it was under the Code. Nothing in this strategy is meant to diminish habitat protection for anadromous fish species and the FSP Holder expects to continue to manage for salmon, particularly those species (i.e., coho) that rear in small streams and back channels.

Management Zones on L1 Lakes in the former Mid-Coast Forest District

Management zones on L1 lakes in the former Mid-Coast Forest District have been established by Order and continued under FRPA s. 180(h). Since the time the Order was approved, lake classification has been modified to include L1-A and L1-B lakes and the FSP Holder has provided a strategy for both lake classifications, consistent with the intent of Order. Consideration of windthrow risk, as described above, is also applicable to lake management zones (LMZs).

Retention within the LMZ will be established to meet the requirements of objective 10 of the South Central and Central and North Coast Orders. Where possible, the boundary of the cutblock will be strategically located (to take advantage of topographical breaks or changes in timber type, for example). Once located, any management zone area contained within the cutblock will be 100% harvested and the area outside the boundary will be 100% retained, as illustrated on the associated mapping. Where it is considered necessary to remove only individual trees from a portion of the management zone (i.e. feathering), the amount of basal area retained will be documented as necessary to determine the application of stocking standards.

Temperature Sensitive Streams

There are no Temperature Sensitive Streams designated within the Plan area at the time of FSP submission.

Fisheries Sensitive Watersheds

There are no Fisheries Sensitive Watersheds designated within the Plan area at the time of FSP submission.

Community Watersheds

There are no Community Watersheds designated within the Plan area at the time of FSP submission.

Wildlife & Biodiversity

Maximum Cutblock Size

A conditional exemption under FPPR s. 12.4 does not apply.

Harvesting Adjacent Another Cutblock

A conditional exemption under FPPR s. 12.4 does not apply.

Retention of Wildlife Trees

With respect to FPPR s.12.5(1), the FSP Holder will retain 7% of the Gross Harvest Area (GHA) of each individual cutblock as wildlife tree retention. The wildlife tree retention area (WTRA) will be documented with the Site Plan for the cutblock. By designating 7% for each cutblock, the FSP Holder will meet annual retention requirements without the need for tracking. This result is considered measurable and verifiable.

Restrictions on Harvesting Timber from a Wildlife Tree Retention Area

The strategy set in the FSP allows the FSP Holder to establish tail-holds and guy-line anchors in wildlife tree retention areas (WTRAs) with the expectation that doing so would be inconsequential to the long term biological function of the wildlife tree retention area. This may be necessary to improve deflection so as to minimize ground disturbance (FPPR s. 5 and 35(3)) in adjacent cable logging operations, to reduce risk of fire ignition (Wildfire Act s. 6(2)(b)), to improve productivity and harvesting cost (FPPR s. 6(b)), or for safety reasons. Normally anchor trees would be left standing, but in some cases anchors and/or other nearby trees/snags may need to be felled to comply with Workers Compensation Board requirements (FPPR s. 2(3)). Trees within WTRAs may be modified (pruned or topped) to maintain the integrity of the WTRA. Such modification may be prescribed in situations where there is a moderate or high windthrow risk.

Objectives Established Under GAR

Visual Quality (GAR s.7 and 17)

Scenic areas and Visual Quality Objectives (VQOs) have been established by GAR s. 7(1) and 7(2) for the Campbell River Forest District.

In the North Coast Forest District, scenic areas have been established by GAR s. 7(1) and Visual Quality Classes from the Visual Landscape Inventory for TFL 25, Block 5 (as approved in Management and Working Plan #10) are continued as VQOs under GAR s. 17.

In the North Island-Central Coast Forest District, VQOs have been established by GAR s. 7(2) for the Kingcome TSA scenic areas continued under FRPA s. 180(c). In the Mid-Coast TSA, recommended Visual Quality Classes (rVQCs) are continued as VQOs by GAR s. 17. For TFLs in the District, Visual Quality Classes (VQCs) from TFL Visual Landscape Inventories (as approved in the relevant Management and Working Plan) are also continued as VQOs under GAR s.17.

A “significant public viewpoint”, as that term is used in the definition of “altered forest landscape” as described in the FPPR s. 1.1, means a viewpoint on water or land:

- a) where a large number of people traditionally congregate which may be a viewpoint in a park, highway pullout, or city center; or
- b) included in the most current Visual Landscape Inventory; or
- c) determined to be important by a qualified professional.

Viewpoints, and their significance, can evolve over time as a function of both changes in vegetation and changing use by the public and interested parties.

Where it can be shown that the parameters used to determine a VQO are outdated or exaggerated, or where restrictions due to the VQO unduly impact on the timber supply (FPPR 6(c)), and if plans to construct a road or harvest a cutblock produces a landscape alteration that differs from the specified VQO, a variance to the VQO will be requested from the applicable District Manager.

With respect to isolation of timber resulting from infrastructure development, the FSP Holder has concern regarding the impact of power lines on the ability to manage a range of values, including timber supply. Establishment of power lines may result in the isolation of timber or limitations on the ability for the FSP Holder to safely operate in an area after a power line is established. Where opportunities exist for the FSP Holder to harvest timber that would otherwise become isolated or inaccessible, elements of good visual design will be considered where practicable.

Fisheries Sensitive Watersheds (GAR s. 14)

There are no Fisheries Sensitive Watersheds designated within the Plan area at the time of FSP submission.

Resource Features Identified Under GAR

Resource Features (GAR s.5)

Recreation Resource Features have been identified within the Campbell River Forest District by Order, dated April 12, 2006. The maps accompanying the Order indicate the location of the identified features, including those located within the Plan area.

Karst system elements (karst caves, significant surface karst features and important features and elements within very high or high vulnerability karst) have been identified as resource features, wherever they are found, within the Campbell River and North Island – Central Coast Forest Districts, by Orders dated May 30, 2007 and March 23, 2007, respectively.

There are no objectives established for the management of these identified resource features. As such, practice requirements (FPPR s. 70(1)) apply.

Where potential karst system elements are identified in the field, the FSP Holder will review the area with a qualified professional and conduct field reconnaissance as necessary to identify and protect the features to the degree necessary to comply with FPPR s. 70(1). The FSP Holder will rely on qualified professionals and reference materials such as the *Karst Management Handbook for BC* and the Forest Practices Board special report: *Protecting Karst in Coastal BC FPB/SR/31, January 2007*.

4.0 Measures

4.1 Invasive Plants

The Invasive Plants Regulation provides a provincial listing of the plants that are considered “weeds” and have invasive habits. Most of the Plan area is ranked Low in terms of susceptibility to invasive plants³. Many of the plant species listed in the regulation are more of a concern in the Interior of BC, where range use is common. Given that there is very little range use on the coast (and no range tenures in the Plan area), the MOFR Coast Forest Region have narrowed the list of invasive plants down to those species that are a threat to forest resources on the coast and identified these species as being “priority invasive plants”.

The current listing of priority invasive plants is provided in Table 7. Measures in the FSP are not limited to priority invasive plants; priority invasive plants are listed for information purposes only.

Table 7: Priority invasive plants

Priority Invasive Plant Species for the Coast Forest Region ⁴	
Common Name	Scientific name
gorse	<i>Ulex europaeus</i>
Scotch broom	<i>Cytisus scoparius</i>
Japanese knotweed	<i>Polygonum cuspidatum</i>
Giant knotweed	<i>Polygonum sachalinense</i>
Purple loosestrife	<i>Lythrum salicaria</i>
Yellow flag iris	<i>Iris pseudacorus</i>

³ Rankin, C. and Assoc. May 2004. *Invasive Alien Species Framework for BC: Identifying and Addressing Threats to Biodiversity A working document to address issues associated with biodiversity in British Columbia*. Biodiversity Branch, Ministry of Water, Land & Air Protection.

⁴ As identified by Jeff Hallworth, Invasive Plant Specialist - Ministry of Forests & Range - Range Branch. Personal communication, July 4, 2007

Identification, Reporting and Control Efforts

To facilitate invasive plant control efforts, relevant staff (i.e., forestry and engineering field staff and individuals involved in brushing projects) will be provided with training in the recognition of invasive plant species within one year of Plan approval. Training will include how the invasive plants establish and spread, and how forest management activities can influence the establishment and spread of these plants. Re-training will occur as determined to be required.

To facilitate timely identification, reporting and control efforts, staff will actively monitor for occurrences of invasive plants during the course of their operational duties (e.g. silviculture surveys, road inspections, harvest inspections, etc.).

The FSP Holder is committed to training staff and monitoring for new occurrences of invasive plants in the Plan area but effective response and control of invasive plants may be beyond the scope and ability of the FSP Holder alone. To successfully respond to new invasive plant occurrences, a more coordinated approach, involving government agencies and other licensees may be required. To this end, appropriate government agencies, including the Ministry of Forests and Range, will promptly (annually at a minimum) be informed when new invasive plants are found in the Plan area.

Prevention

Grass seeding is a common forestry practice used to help control erosion and improve visual aesthetics along new roadsides, in slide areas and where deemed necessary in harvest areas. All seed used for re-vegetation will be Common Grade 1 Forage Mixture or better, (as defined in the Canada Seeds Act and associated regulations) to help minimize the potential for weed species being inadvertently sown in new areas. Where seed mixes that are endemic to the area are available, they will be the preferred choice. By using local seed sources, the risk of inadvertent introduction of weeds should be further reduced.

Given that road building activities often create an ideal seedbed (exposed mineral soil in full sun conditions) for the establishment of new occurrences of invasive plants, a reasonable preventative measure is to re-vegetate exposed soils that are in close proximity to existing invasive plant occurrences (i.e., grass seed exposed mineral soil in areas adjacent to existing invasive plant sites).

By re-vegetating the exposed mineral soil, the seedbed available to the invasive plants in the immediate area will be reduced, helping to prevent their spread. Should invasive plant seed germinate in the new area, the grasses/ legumes seeded will provide competition for the invasive plants, reducing the chance that the plants will successfully establish on the new site.

In addition to seeding exposed soils that are adjacent to areas containing established invasive plants, meeting the reforestation commitments as stated in the Stocking Standards should reduce the potential for invasive plants establishing in the Plan area as prompt establishment and occupation of the growing site with healthy conifers will help shade out invasive plants that are shade intolerant.

The FSP Holder recognizes that there are limited mechanisms for introduction and spread of invasive plants in many of the more remote locations within the Plan area. The FSP Holder, during the course of field planning, will note existing occurrences of invasive plants in remote areas and identify areas of concern (e.g. new occurrences, contaminated gravel sources for road construction). In these remote locations, containment or complete eradication of a newly discovered occurrence may be possible and potentially successful where other mechanisms for spread or introduction are non-existent. All equipment will be cleaned prior to moving to a new area after having been exposed to identified invasive plants.

Roadside Brushing

The measures for roadside brushing address the control of invasive plants by way of modification to vegetation control programs. During the course of normal brushing programs, invasive plants that are established in the Plan area may be encountered. Treating these invasive plants can help reduce their spread within the Plan area. However, in some cases treatment may actually exacerbate the invasive plant problem (e.g. knotweeds can easily be spread via cuttings created during mechanical roadside brushing). Therefore, treatments will need to account for the biology of the particular plant(s) in question.

For invasive plants that spread by way of seed (e.g. Scotch broom), by timing brushing treatments prior to seed dispersal, the spread of invasive plants may be slowed.

For invasive plants that spread by way of root or shoot cuttings (e.g. knotweeds) brushing programs will be modified, to the extent practicable, to minimize the spread of the plant. This can be accomplished by avoiding mechanically brushing these types of plants, or if the plants are mechanically treated, by cleaning machines prior to relocating to “clean” sites.

To the extent practicable, when developing roadside brushing programs, staff will consider the biology of relevant plant species to ensure that brushing treatments do not exacerbate the spread of invasive plants.

4.2 Measures to Prevent Impact on Natural Range Barriers

Measures to prevent impact on natural range barriers are not submitted in the FSP as there currently are no agreements under FRPA within the Plan area.

Appendix 1:
Applicable Orders and Notices

Appendix 2:
Stocking Standards Rationale