



Klahoose First Nation



**Cortes Forestry General Partnership
Community Forest K4G**

Forest Stewardship Plan

Draft

October 2019

Plan Preparer

I certify that the work described herein fulfills the standards expected of a member of the Association of British Columbia Forest Professionals and that I did personally complete the work covered in this Plan.

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ABBREVIATIONS, ACRONYMS, AND DEFINITIONS USED WITHIN THE FSP

CFA	means community forest agreement
FDU(s)	means forest development unit(s)
FPPR	means the <i>Forest Planning and Practices Regulation</i> under <i>FRPA</i>
FRPA	means the <i>Forest and Range Practices Act</i>
FSP	means Forest Stewardship Plan
Free Growing Stand	means a stand of healthy trees of a commercially valuable species, the growth of which is not impeded by competition from plants
GAR	means the Government Action Regulation under <i>FRPA</i>
GMZ	Under the Vancouver Island Land Use Plan, describes a General Management Zone
HLP	means – Higher Level Plan with established objectives by government
IWMS	means Identified Wildlife Management Strategy as defined in version 2004
LUP	means landscape unit plan: Higher Level Plan with established objectives
Net area to be reforested	means the area specified in a silviculture site plan which is scheduled for basic reforestation (net area of block only)
OGMA(s)	means old growth management area(s)
Primary Forest Activity	As defined in FPPR Section 1(1) means one or more of a) timber harvesting, b) silviculture treatments, or c) road construction, maintenance and deactivation

Qualified Person	means a person who by experience and/or education is considered knowledgeable and able to provide advice on a given subject in a given situation
Qualified Professional	means a person who by education, experience and professional credentials is considered knowledgeable and able to provide expert advice on a given subject in a given situation and is licensed or regulated by a governing body or association
RMZ	means riparian management zone where activities are prescribed in order to protect the adjacent stream
RMA	means riparian management area where defined practices are carried out to protect stream banks or RRZ
RRZ	means riparian reserve zone where trees are retained to maintain stream integrity, unless an exemption is provided for a specific circumstance or situation that must be provided for by a Qualified Professional
UWR	Ungulate Winter Range: identified habitats for critical winter survival of ungulates (deer and/or elk)
VILUP	means the Vancouver Island Land Use Plan (Higher Level Plan)
WHA	means Wildlife Habitat Area that has been formally designated through GAR or grandparented for a particular wildlife species of concern for a region
WTRA	means wildlife tree retention areas

FOREST STEWARDSHIP PLAN

1. INTRODUCTION

The Cortes Forestry General Partnership (CFGP) holds a Community Forest Agreement K4G that was awarded in August 2013 by the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (MFLNRORD). This entity is an equal partnership between the Klahoose Forestry No 2 Limited Partnership (KF2LP) and the Cortes Community Forest Cooperative (CCFC) who are tasked with managing the 3,862 hectares of Crown land on Cortes Island.

The 'Vision', 'Mission Statement', 'Values', and 'Governing Principles' of forest management at Community Forest Licence K4G are clearly outlined on the website <http://www.cortesforestrypartnership.com/> and within the Community Forest Operating Plan (CFOP) which is found on the website and may be updated periodically (current v.2014).

2. APPLICATION OF THE FSP (FRPA S.3(4))

The holder has prepared this Forest Stewardship Plan (FSP) as required under s.3(4) of the *Forest and Range Practices Act (FRPA)*, in order to carry out and plan primary forest activities within Forest Development Units (FDUs). Reference to the legislation within this FSP refers to any legislation as it was on the date of submission of this FSP.

The FSP contains the following components:

1. Map illustrating the FDU within which primary forest activities may occur, and
2. Results and/or Strategies to address objectives set by government or through Higher Level Plans

LICENSEES AND LICENCES

This FSP applies to the Holder of Community Forest Agreement K4G, the Cortes Forestry General Partnership.

AREAS SUBJECT TO CUTTING PERMIT OR ROAD PERMIT

Cutting Permits and Road Permits in effect as of the date of submission of this FSP are not part of the review for this FSP.

TERM OF THE FSP (*FRPA* S.6(1))

The term of this FSP will be for five years. The FSP may be terminated earlier if the licensee(s) elects to replace it with another approved FSP, or the FSP may be extended pursuant to the *FRPA* and its regulations.

COMMENCEMENT OF TERM OF THE FSP (*FRPA* S.6(1)(B))

The term of this FSP commences on the date specified by the Minister or his Delegated Decision Maker (DDM).

3. MAP (*FRPA* SECTION 5(1)(A) AND *FPPR* S.14)

The FSP Map shows the areas that are within the boundary of the FDU that may be available for primary forest activities and also those areas that are within the boundary of the FDU but are not part of the FSP.

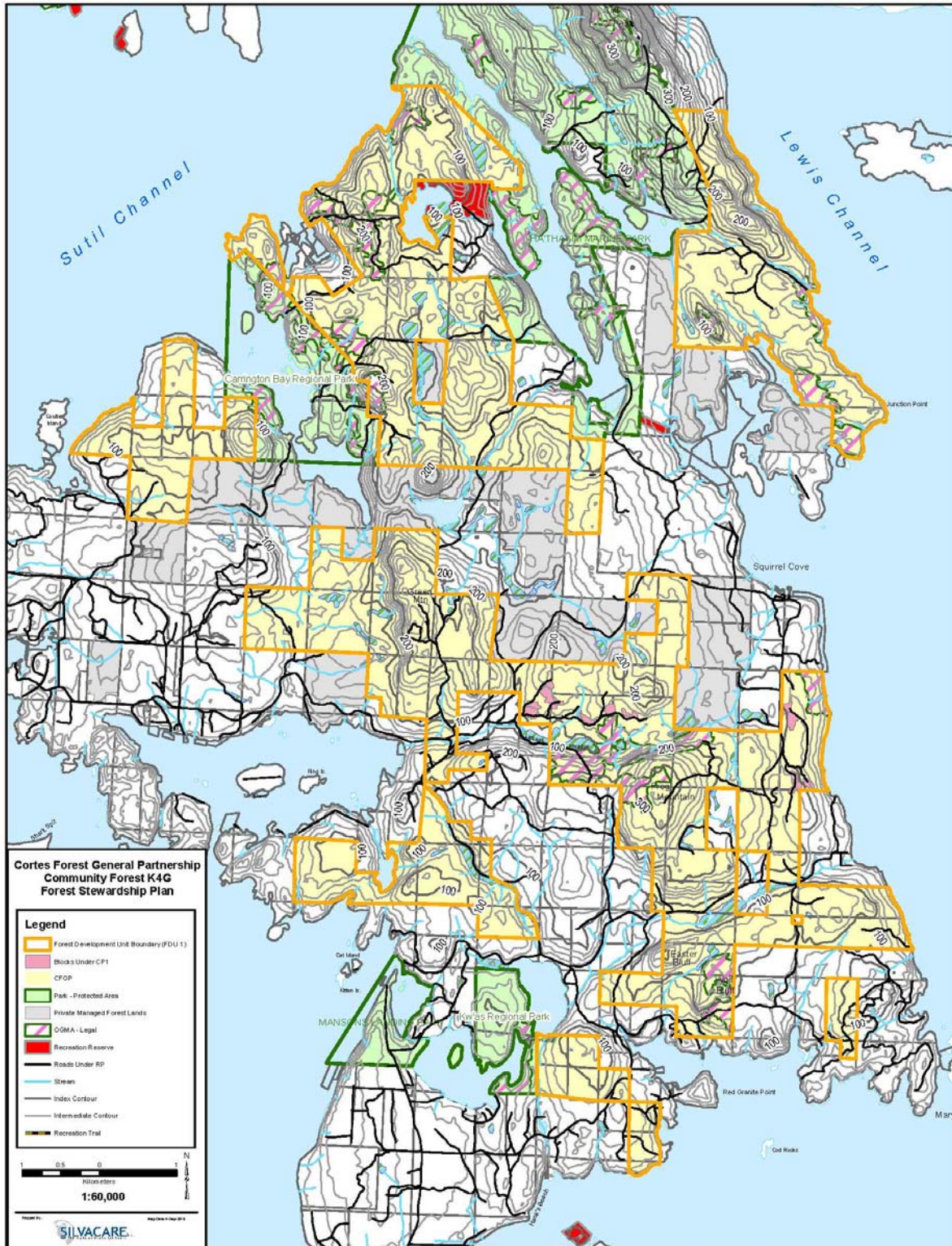
As per s.14(3) of the *Forest and Range Practices Act (FPPR)*, the FSP describes the elements that have been identified and in effect as of the Date of Submission of this FSP and where those elements are applicable to this FSP. These elements are shown on the FSP mapping where applicable, as follows (not all of the following occur in the areas under this FSP):

- Ungulate winter range,
- Wildlife habitat area,
- Fisheries sensitive watershed,
- Lakeshore management zone, including specifying the width of the zone, if the zone is identified on a map accompanying the establishment of the lakeshore management zone,
- Scenic area,
- Lake identified as an L1 lake under section 49 (1) (b) (ii) if the lake has been identified on a map accompanying the identification,
- Community watershed,
- Old growth management area,

- Parks and protected areas
- Recreation sites and trails
- Special Resource Management Zones (Vancouver Island Land Use Plan)
- Area in which commercial timber harvesting is prohibited by another enactment,

Additional elements may also be shown on the FSP mapping and are identified on the map legend for reference.

Figure 1: Forest Stewardship Plan Area Overview Map



4. DESIGNATION AND OBJECTIVES IN EFFECT UNDER *FPPR* S.14

The following land use designation, objectives and notices apply to the FSP. Details are found in the appendices of this plan:

Vancouver Island Land Use Plan - Order (October 24, 2000)

Cortes Landscape Unit Plan (2012)

Order Establishing OGMA's for the Sunshine Coast District ((2012)

Species at Risk Notice – Sunshine Coast Forest District – (Dec 2004 rev Mar 2006)

K4G Cutting Permit ZZ (not included as a document in this FSP)

5. GRANDPARENTED DESIGNATIONS – (*FRPA* S. 181)

Under s. 180 and 181 of *FRPA* the following designations are grandparented and shown on the FSP mapping in the appendices.

- Recreation Sites

No other grandparented designations, objectives or measures are found within the areas under this FSP.

RESULTS AND STRATEGIES (*FRPA* S.5(1)(B))

Objectives Set by Government are outlined in s.149 (1) of *FRPA*. In addition the area is subject to grandparented objectives that result from previous executive orders as they relate to the Vancouver Island Land Use Plan. As per s.5(1)(b) of the *FRPA*, a FSP must specify intended results or strategies, each in relation to (i) objectives set by government and (ii) other objectives that are established under the Act or the regulations and that pertain to all or part of the area subject to the plan.

The FSP holder has set out results and/or strategies to meet all objectives that are required for areas under this FSP. Results and strategies are written to meet the following standards:

- **Results** are written to be measurable or verifiable outcomes in respect of each particular objective, and describe the situation or circumstance where the outcomes will be applied.
- **Strategies** are written to be measurable or verifiable steps or practices that will be carried out in respect of each particular objective, and the situation or circumstance where the steps or practices will be applied.

As per s.5(2)(b) of *FRPA*, a FSP must also be consistent with timber harvesting rights granted by the government for Community Forest Agreement area for K4G.

Applicable Areas

The FSP covers the tenure area of Community Forest K4G, which falls within one Forest Development Unit (FDU 1).

All of the results and strategies in this FSP apply to *FDU 1*.

6. OBJECTIVES RESULTING FROM HIGHER LEVEL PLANS *FRPA* S.5(1)(B)(II)

VANCOUVER ISLAND LAND USE PLAN-HIGHER LEVEL PLAN (HLP) ORDER

The objectives set by government for land use designation were defined by the established order identified in Appendix C in this document. The Vancouver Island Land Use Plan (VILUP) took effect in October 2000, which has established land use objectives for Special Management Zones and Resource Management Zones (Enhanced Forestry Zones) within the VILUP area. The Vancouver Island Land Use Plan Summary document (2000) is used as background information for establishing the importance of certain values in the area and including this information into the planning for development in areas under this FSP.

Results, Strategies or Measures

Although the FDU falls within the VILUP area, there are no objectives within the HLP itself that apply to the FSP. No results or strategies are required to meet the objectives within the HLP.

ORDER ESTABLISHING PROVINCIAL NON-SPATIAL OLD-GROWTH OBJECTIVES

The Non-Spatial Old Growth Order (NSOGO) was signed by the Minister of Sustainable Resource Management (note previous Ministry name) and took effect June 30, 2004. This order applies to areas under this FSP and supplements *FPPR* Section 9.

Results, Strategies or Measures

The NSOGO has been replaced by the Old Growth Management Areas Order (Appendix E) for the Cortes Landscape Unit. The FSP holder has developed results and/or strategies to meet the OGMA Order which can be found in the section for OGMAs below.

No further results, strategies or measures are required to meet the objectives of the NSOGO.

ORDER ESTABLISHING OLD GROWTH MANAGEMENT AREAS

Old Growth Management Areas (OGMAs) within the Cortes Landscape Unit have been established by Order of the Minister July 10, 2012

Strategy

The FSP holder(s) will comply with the applicable objectives of the legal order for OGMAs within the Cortes Landscape Unit.

7. OBJECTIVES PRESCRIBED UNDER *FRPA* SECTION 149

SOIL RESOURCES (*FPPR* S.5)

The objective set by government for soils is, without unduly reducing the supply of timber from British Columbia's forests, to conserve the productivity and hydrologic function of soils.

Strategy

The FSP holder will comply with the objectives set by government for soils (*FPPR* s.5).

The default limits (practice requirements) for soil disturbance and for permanent access structures as per s.35 and s.36 of the *FPPR* will apply and no result and/or strategy is required for these sections.

TIMBER RESOURCES (*FPPR* S.6)

The objectives set by government for timber are to:

- a) Maintain or enhance an economically valuable supply of commercial timber from British Columbia's forests,
- b) Ensure that delivered wood costs, generally, after taking into account the effect on them of the relevant provisions of this Regulation and of the Act, are competitive in relation to equivalent costs, in relation to regulated primary forest activities in other jurisdictions, and
- c) Ensure that the provisions of this Regulation and of the Act that pertain to primary forest activities do not unduly constrain the ability of a holder of an agreement under the Forest Act to exercise the holder's rights under the agreement.

Result and/or Strategy

The FSP holder is exempt from the requirement to develop a result or strategy to meet this objective, therefore no result or strategy is required.

WILDLIFE RESOURCES (*FPPR* SECTION 7, UWR AND SPECIES AT RISK)

1. The objective set by government for wildlife is, without unduly reducing the supply of timber from British Columbia's forests, to conserve sufficient wildlife habitat in terms of amount of area, distribution of area and attributes of those areas, for
 - (a) the survival of the species at risk;
 - (b) the survival of regionally important wildlife; and

- (c) the winter survival of specified ungulate species.
2. A person required to prepare a forest stewardship plan must specify a result or strategy in respect of the objective stated under subsection (1) only if the Minister of Environment (MFLNRORD), or a designated official, notifies the person of the applicable, (a) species referred to in subsection 1), and (b) indicators of the amount, distribution and attributes of wildlife habitat described in subsection (1).

Strategy

The FSP holder will comply with the objectives set by government for wildlife.

Where an area is identified by the FSP holder as having populations of species at risk but does not have the attributes listed within the Notice, the FSP holder will incorporate the recommendations provided by a Qualified Professional into plans for conserving wildlife habitat consistent with the s.7 Notices. The FSP holder will conserve and track the amount, distribution and attributes of wildlife habitat in a manner consistent with the Notice.

Orders Establishing Ungulate Winter Range

There are no established Ungulate Winter Range areas established in areas under this FSP. Should such areas become established at a future date, the FSP holder will amend this strategy accordingly.

Orders Establishing Wildlife Habitat Areas

There are currently no approved Wildlife Habitat Areas (WHAs) in areas under this FSP. However there are proposed WHAs within the Sunshine Coast Natural Resource District for Northern Goshawk (MFLNRORD letter May 28, 2019). Upon approval of these proposed WHAs, persons required to prepare a FSP will be exempted from the obligation to prepare results or strategies for Northern Goshawk to meet the s.7(2) Notices, in the mature THLB in the Sunshine Coast Natural Resource District. None of these proposed WHAs fall within areas under this FSP.

Marbled Murrelet (*Brachyramphus marmoratus*)

An inventory identifying Marbled Murrelet habitat suitability has been conducted by Regional Biologists covering areas on Cortes Island (and surrounding areas). The results of these surveys have been incorporated into support information for the FSP.

Wildlife Habitat Areas have not yet been established for Marbled Murrelet for areas within the FSP boundary. Further habitat for Marbled Murrelet is also proposed for establishment

in WHAs and the majority of this habitat overlaps with existing legal OGMA and parks and protected areas both within and adjacent to the FSP area.

Strategy

The FSP holder will conduct primary forest activities in areas under this FSP to be consistent with the objectives set by government for wildlife under s.7 of the *FPPR*, and the Notice authorized under s.7(2) of the *FPPR* “Indicators of the Amount, Distribution and Attributes of Wildlife Habitat Required for the Survival of Species at Risk in the Sunshine Coast Forest District”.

If primary forest activities are proposed for areas where suitable habitat has been identified through habitat surveys, in the non-contributing land base, the harvested area will be replaced with suitable habitat within the contributing land base (THLB) as it has been defined during the TSR II analyses. Any exchanges will be tracked by the FSP holder and a notice sent to MFLNRORD.

Grizzly Bear (*Ursus arctos*)

Grizzly bears are not found (typically) in areas under this FSP, therefore the s.7(2) Wildlife Notice for this species does not apply to the FDUs under this Plan.

No result or strategy is required.

Coastal Tailed Frog (*Ascaphus truei*)

Coastal Tailed frogs are not found within areas under this FSP, therefore the s.7(2) Wildlife Notice for this species does not apply to the FDUs under this Plan.

No result or strategy is required.

Vananda Creek Sticklebacks (*Gasterosteus* species 16 and 17)

Vananda Creek Sticklebacks are not known to be found within areas under this FSP, therefore the s.7(2) Wildlife Notice for this species does not apply to the FDUs under this Plan.

No result or strategy is required.

Northern Goshawk (*Accipiter gentilis laingi*)

The Goshawk is on the *Red List* in British Columbia.

Strategy

Where an area has been identified by the FSP holder as having populations of species at risk, or where an active nest has been found, these areas will be managed on a site-specific basis consistent with the recommendations of a Qualified Professional.

WATER QUALITY, FISH, WILDLIFE AND BIODIVERSITY IN RIPARIAN AREAS (*FPPR* S.8)

The objective set by government for water, fish, wildlife and biodiversity within riparian areas is, without unduly reducing the supply of timber from British Columbia's forests, to conserve, at the landscape level, the water quality, fish habitat, wildlife habitat and biodiversity associated with those riparian areas.

Result

The FSP holder(s) will comply with the requirements listed in the *FPPR* for s.47 (Stream Riparian Class), s.48 (Wetland Riparian Class), s.49 (Lake Riparian Class), s.50 (restrictions in a riparian management area), s.51 (restrictions in a riparian reserve zone), s.52(2) (restrictions in a riparian management zone), and s.53 (Temperature Sensitive Stream), where these requirements apply to areas under the FSP.

Strategies

1. Trees will be retained as required within the RMA of all streams, wetlands and lakes necessary for the protection of wildlife habitat and biodiversity values.
2. The FSP holder(s) will retain a Qualified Professional to determine the retention levels necessary at the site level to meet the objectives set by government for water, fish, wildlife and biodiversity within riparian areas, at the landscape level. The Qualified Professional will:
 - a) consider the factors listed in *FPPR* Schedule 1 s.2 to determine the type of management regime on a site specific basis, and
 - b) design riparian retention to be consistent with s.52(2) of the *FPPR*.
3. The FSP holder will conduct activities in the riparian management area that incorporate the recommendations made by the Qualified Professional and will minimize sediment and coarse woody debris inputs into streams to the extent practicable.

4. Riparian Reserve Zones will be assessed by a Qualified Professional for wind throw risk. Recommendations by the Qualified Professional will be incorporated into site level planning which may include carrying out treatments to lessen the potential impact to stream banks, streams and fish habitat from windthrow, as per s.51(1) of the *FPPR*.

FISH HABITAT IN FISHERIES SENSITIVE WATERSHEDS (*FPPR* S.8.1)

There are no “fisheries sensitive watersheds” established under sections 180(f) and 180(g) of *FRPA* for the area under this FSP.

In the event that Fisheries Sensitive Watersheds are established during the term of this FSP, the FSP holder will comply with the objectives set in s.8.1 of the *FPPR*.

WATER IN COMMUNITY WATERSHEDS (*FPPR* S.8.2)

1. “**Community watershed**” means a community watershed
 - (a) that is continued under section 180(e) of the *FRPA*, and
 - (b) for which a water quality objective has not been
 - (i) continued under section 181 of the *FRPA*, or
 - (ii) established under the Government actions Regulation.
2. The objective set by government for water being diverted for human consumption through a licensed waterworks in a community watershed is to prevent to the extent described in subsection (3) the cumulative hydrological effects of primary forest activities within the community watershed from resulting in
 - (a) a material adverse impact on the quantity of water or the timing of the flow of the water from the waterworks, or
 - (b) the water from the waterworks having a material adverse impact on human health that cannot be addressed by water treatment required under
 - (i) an enactment, or
 - (ii) the licence pertaining to the waterworks.
3. The objective set by government under subsection (2) applies only to the extent that it does not unduly reduce the supply of timber from British Columbia’s forests

Result and/or Strategy

There are no Community Watersheds within areas under this FDP, therefore no result or strategy is required.

In the event that a Community Watershed is established during the term of this FSP, the FSP holder will comply with the objectives set in s.8.2 of the *FPPR*.

WILDLIFE AND BIODIVERSITY RESOURCES – LANDSCAPE LEVEL (*FPPR* S.9)

The objective set by government for wildlife and biodiversity at the landscape level is, without unduly reducing the supply of timber from British Columbia's forests and to the extent practicable, to design areas in which timber harvesting is to be carried out that resemble, both spatially and temporally, the patterns of natural disturbance that occur within the landscape.

Results

The FSP holder will comply with the maximum cutblock size as per *FPPR* s.64 and the adjacency requirements as per *FPPR* s.65.

OBJECTIVE FOR WILDLIFE AND BIODIVERSITY RESOURCES – STAND LEVEL (*FPPR* S.9.1)

The objective set by government for wildlife and biodiversity at the stand level is, without unduly reducing the supply of timber from British Columbia's forests, to retain wildlife trees.

Results

The FSP holder will comply with the establishment of wildlife tree retention areas as per *FPPR* s.66 and s.67.

8. VISUAL QUALITY OBJECTIVES (FPPR S.9.2)

The objectives set by government under the Government Action Regulations (B.C. Reg. 582/2004), s.7(2) and s.17.

Scenic Area

Areas of the FSP are found within a Scenic Area due to the proximity of popular boating channels touring around the island and towards Desolation Sound. The visual landscape inventory polygons identified in this area include Retention (R) and Partial Retention (PR) polygons.

Strategy

The FSP holder will ensure that primary forest activities that fall within the Visual Landscape Reserve polygons are designed so that alteration falls within the allowable alteration limits from significant public viewpoints, and meets the Visual Quality Objectives, as described in FPPR s.1(1).

9. OBJECTIVES FOR CULTURAL HERITAGE RESOURCES (FPPR S.10)

The objective set by government for cultural heritage resources is to conserve, or, if necessary, protect cultural heritage resources that are:

- a) The focus of a traditional use by an aboriginal people that is of continuing importance to that people, and
- b) Not regulated under the Heritage Conservation Act.

Strategies

The FSP holder will comply with the objective set by government for cultural heritage resources using the following means:

1. Wherever possible, the FSP holder will minimize or eliminate any potential impact on cultural heritage resources that are of value or relative importance to aboriginal peoples, as determined by the affected First Nations, or a combination of Qualified Professionals and the Delegated Decision-Maker.
2. The FSP holder will engage regularly with the First Nations and will review materials made known through Ministry sources, or through local First Nation sources including any archaeological overview studies, traditional use mapping, or other materials to

ensure avoidance of traditional use areas when planning for primary harvest activities.

3. Through planning and development of areas, the FSP holder will document and map any evidence of cultural use and, where requested, will conduct surveys for culturally modified trees or other cultural resources.
4. Cedar is recognized as a cultural resource and opportunities for continued traditional use by First Nations will be provided for through the planting of cedar on ecologically suitable sites and through the protection of cedar as recruitment for future cultural use in retention for riparian areas, wildlife habitat and old-growth management areas.
5. The FSP holder hosts regular public meetings on Cortes for all residents, including First Nations' members and licensee representatives, where operational updated and early stage planning information is provided for anyone who may be affected by these plans. Additional meetings are welcome and will be arranged upon request.

10. MEASURES TO PREVENT THE INTRODUCTION AND SPREAD OF INVASIVE PLANTS

As per s.47 of the *FRPA*, the FSP holder must carry out measures specified in a FSP to prevent the introduction or spread of prescribed species of invasive plants. Appendix G lists those plants that are invasive under the *Invasive Plants Regulation*.

Himalayan blackberry (*Rubus discolor*) is not indicated in the Invasive Plants Regulation but this is also an introduced species which can aggressively spread. For both Himalayan Blackberry and Scotch Broom, the most effective method of control is prompt and successful reforestation of cutblocks with ecologically suitable species.

The FSP holder will carry out the following measures to prevent the introduction or spread of prescribed species of invasive plants:

- Ensure that areas of exposed soils > 0.1 hectare are re-vegetated with seedlings or with a grass seed, as prescribed by a Qualified Professional, within one year of harvest completion,
- Promote awareness and recognition of invasive plant species to staff, contractors and sub-contractors, and
 - Ensure that road building and harvesting contractors inspect vehicles and equipment, particularly tracks and undercarriage when being transported to

and from Cortes Island, for the presence of plant parts, and that equipment be cleaned prior to leaving (or arriving to) areas that are known to contain invasive species.

- Where the risk of spread of invasive plants, as identified by a Qualified Professional, is deemed to be low, areas >0.1 ha may be left to naturally regenerate with native species
- Report new occurrences of Species of Concern (noted species of concern are Scotch Broom, varieties of Hogweed and all varieties of Knotweed) to the Coastal Invasive Plant Committee by filling in the “Invasive Alien Plant Program” (IAPP) or using the Report-A-Weed application for android and IOS devices. Staff and contractors will be provided training regarding the use of Report-A-Weed
- Where vegetation is identified as a Priority Species, the FSP holder will take site specific measures to control the spread and/or eliminate the plant as required using the Prevent, Eradicate, Contain or Control measures for Coastal Areas as found in Appendix G

11. MEASURES RELATED TO NATURAL RANGE BARRIERS

As per *FPPR* s.18, the FSP holder(s) must carry out measures specified in a FSP to mitigate the removal or ineffectiveness of a range barrier caused, directly or indirectly, through carrying out a forest practice. There are no known range resources within the area of this plan, therefore no measures are provided to meet the objectives.

12. STOCKING STANDARDS

General

FPPR Section 16: FPPR Section 44(1) applies in all situations and circumstances under this FSP and in all FDUs, where a free growing stand is required to be established under *FRPA* Section 29.

The regeneration date, stocking standards, free growing heights and species as per *FPPR* s 44(1)(a) and (b) are outlined in Appendix B.

FRPA Section 197 election for stocking standards

EVEN AGED MANAGEMENT

The stocking standards in Appendix B apply to harvest units and/or standards units where even aged management is practiced, specifically those stands where Basal Area retention is $<8 \text{ m}^2/\text{ha}$. The standards are based on ecologically suitable species for each site and will be documented by the prescribing Forester in each Site Plan.

INTERMEDIATE CUTTING STANDARDS

The FSP holder is exempt from the requirements of sections 29 (1) of the *FRPA* if the holder harvests timber for the reasons referred to under *FPPR* section 44(3)(h). The FSP holder will ensure that, for a period of 12 to 24 months after completion of harvest, the area on which the timber harvesting was carried out conforms to the stocking standards specified in *FPPR* section 16(4) for the area (Appendix B, Table 1).

Stands suitable for an Intermediate Cut harvest will be $>1.0 \text{ ha}$ with no openings that are $>0.1 \text{ ha}$ in size and will be fully stocked with ecologically suitable species.

SINGLE ENTRY DISPERSED RETENTION SYSTEM STOCKING STANDARDS (SEDRSS)

The application of the SEDRSS as a silvicultural system will be used as a tool to meet those specific objectives outlined by the FSP holder in the Community Forest Management Objectives (CFGP), as appropriate for the areas under the FSP. Management strategies reflect the strong community philosophy for sustainable, responsible management of the Community Forest including the retention of healthy dominant trees in each stand and ensuring an abundance of older age classes to improve the overall ecological function and diversity of the forest. Use of SEDRSS will be restricted to specific situations and circumstances that are suitable for this partial cut harvest method.

The criteria for suitable stands include the following:

- 1) Conifer second-growth stands only, this application is not suitable for broadleaf stands and will not be applied to Old Growth stands in areas under this FSP,
- 2) Dispersed retention residual basal area ranging from 5 – 39 m²/ha and the contiguous opening size is > 1.0 ha, and
- 3) Stands that have moderate to higher productivity.

The objectives for areas where SEDRSS is applied will be identified and outlined on a site specific basis and documented in each Site Plan by the prescribing Forester prior to harvesting.

The specific standards for SEDRSS are found in Appendix B, Tables 2 and 3. Survey procedures will follow the recommended methodologies outlined in the SEDRSS Framework Implementation Guide (Coastal), 2014.

Climate Change

The primary forest activities of the FSP holder will take place in lower elevation areas of the Coastal Western Hemlock dry and very dry maritime areas. There has been a substantial level of harvesting over the years over these areas resulting in the majority of the forests being moderately productive Douglas-fir, western hemlock and western redcedar second-growth stands with patches of Old Growth scattered throughout.

The MFLNRORD produced an update to the “Reference Guide for Forest Development Stocking Standards” (revised March 2019) in response to climate change projections showing a possible shift in tree species and ecological suitability for reforestation on certain sites.

At this time, there are no recommended changes to species selection in the Biogeoclimatic Zones (subzones/variants) that are located within areas under this FSP. The FSP holder(s) will continue to monitor the recommended stocking standards and species suitability for areas where primary forest activities are conducted and amend the Stocking Standards in Appendix B as these become necessary.

Forest Health Factors

All stems considered to be crop trees will meet or exceed the Free Growing Damage Criteria as outlined in the Single Entry Dispersed Retention Stocking Standard (2014) Damage Criteria for Managed Stands in Coastal British Columbia (Section 1.4).

SPRUCE WEEVIL

Risk of Spruce Weevil is low for most of the plan area. If spruce is chosen as an ecologically suitable species for planting, then only resistant stock will be used and as a minor contributor to the overall stocking of the NAR.

DWARF MISTLETOE

Dwarf Mistletoe is found in stands with western hemlock within areas under this FSP. If hemlock is to be considered a crop tree (preferred or acceptable) during surveys, it will not be accepted as a well-spaced tree within 10 metres of the drip line where a qualified surveyor has determined there is a risk of infection of regenerating seedlings. Ecologically suitable species other than hemlock will be planted in areas where mistletoe occurs in the overstory or adjacent stand.

BALSAM WOOLY APHID

The Balsam Woolly Aphid feeds on balsam (*Abies grandis*) and can cause mortality in older second growth trees. There are areas near to Cortes Island that have had known infestations, but due to the relatively minor population of balsam on Cortes, the risk of a large infestation would be considered lower. Monitoring for this insect can be done through aerial surveys and communication with adjacent licensees and government to follow areas of spread. Planting with species other than balsam lessens the risk additionally.

WHITE PINE BLISTER RUST

Any reforestation of white pine must be with rust-resistant stock or the regenerating seedlings would not be included as contributing to the crop trees. Natural white pine regeneration can be accepted if seedlings are pruned to remove lower branches to a height of 3 metres.

ROOT DISEASES

Root rot diseases do occur throughout areas under the FSP but fairly infrequently and are generally restricted to small pockets. Both *Phellinus* and *Armillaria* can occur in these areas. As long as the pockets are small and the area can be replanted with a less susceptible species such as Cw, Pw or Dr, no further treatments will normally be required. If cases become larger and more concentrated, then further treatments such as de-stumping may become necessary to reduce the impact. Root rot will be monitored and documented on a site level basis when found.

See Appendix B under this FSP for specific footnotes related to ecologically suitable species and forest health notes.

Appendix A: Forest Stewardship Plan Mapping

Forest Development Unit 1:

Cortes Forestry General Partnership Community Forest K4G

- FDU 1 covers a portion of the Cortes Landscape Unit

Map is attached following

Cortes Community Forest General Partnership FSP Map

Legend

- Community Forest Boundary (Forest Development Line #1)
- Areas under Cutting Permit
- CFGP (includes with the 400 boundary)
- Park - Protected Area
- Private Managed Forest Lands
- OGMA - Legal
- Recreation Reserve

VQOs

- Modification
- Partial Retention
- Retention

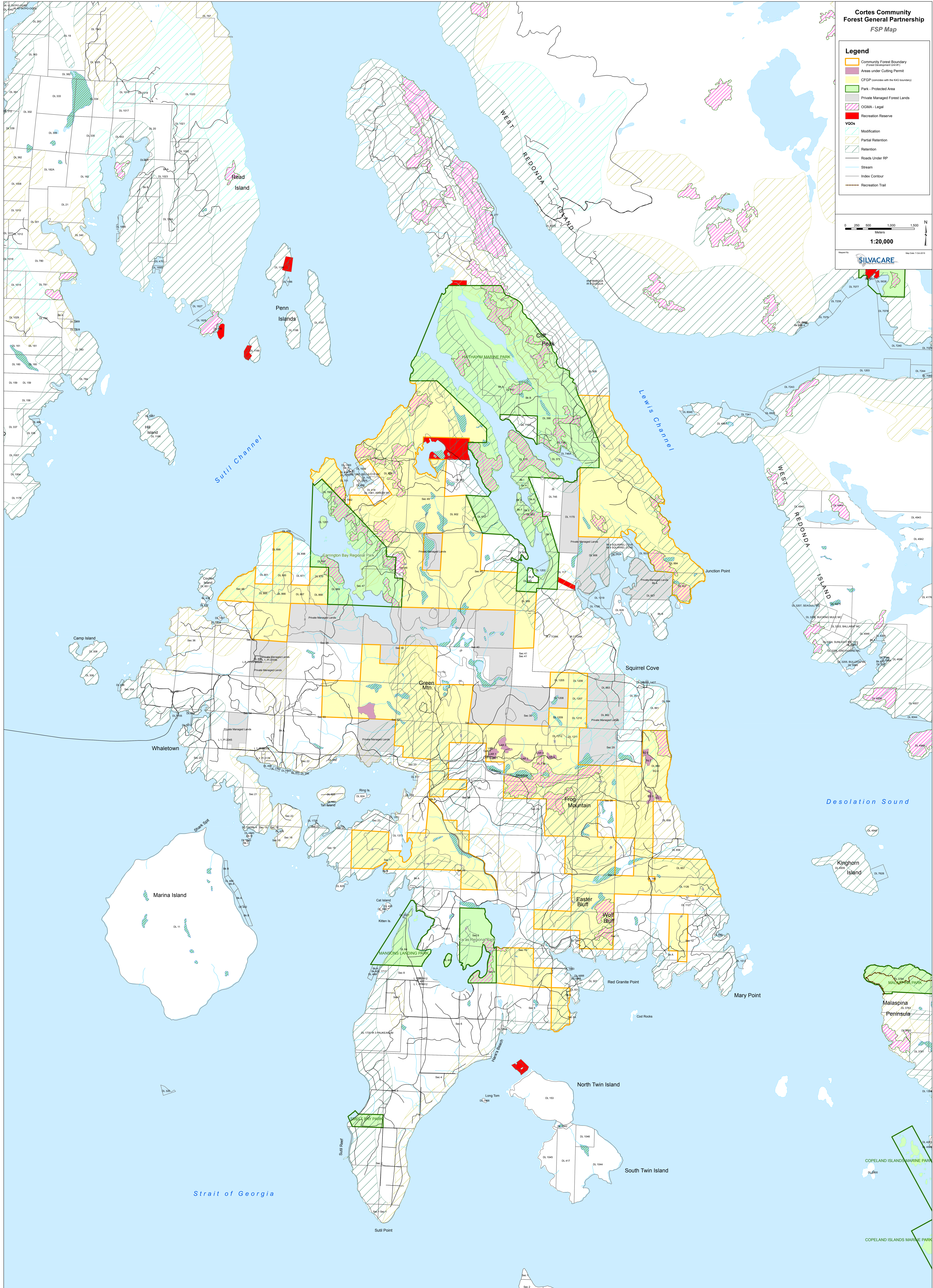
Other Features

- Roads Under RP
- Stream
- Index Contour
- Recreation Trail

0 250 500 1,000 1,500
Meters

1:20,000

SILVACARE



Appendix B

Stocking Standards

STOCKING STANDARDS

FPPR S. 16, S. 44

STOCKING STANDARDS– GENERAL

FPPR s. 44(1) applies in all situations and circumstances where a free growing stand is required to be established under FRPA S. 29, for all areas under the FSP.

The regeneration date, free growing heights and stocking standards and species as per FPPR s. 44(1)(a) & (b) are outlined in Tables 1, 2 & 3 following these pages.

EVEN-AGED MANAGEMENT

The FSP holder will utilize even-aged management broadly over the areas under the FSP, but on a small-scale basis (smaller openings). The primarily second-growth Douglas-fir dominated stands found in these areas are suited for regenerating fir in exposed areas on moderately productive sites. The prescribing Forester will ensure that openings are designed to also meet with the objectives set out for areas under the FSP, as per the Community Forest Management Objectives (as updated periodically by the CFGP).

PARTIAL HARVESTING

The FSP holder will also utilize a range of partial harvesting methods to ensure that forest management is being done to meet the objectives set out by the community for the areas under the FSP, to leave healthy, dominant trees in each area and that the Mean Annual Increment (M.A.I) of these stands is not being depleted over time (maximizing the long-term growth). The stocking standards for partial harvesting follow in Tables 1, 2 & 3. Methods include:

INTERMEDIATE CUT

This harvest system removes individual trees or small pockets of trees that create < 0.1 ha opening sizes and where the FSP holder is exempt from the requirements of FRPA sections 29(1). Healthy, dominant overstory trees will be left and the focus will be to remove merchantable, co-dominant trees or those trees with potential disease or defects, as prescribed on a site-specific basis. This practice aims to ensure a disease-free, genetically healthy, diverse stand remains to regenerate future generations of forest.

SINGLE ENTRY DISPERSED RETENTION STOCKING STANDARDS (SEDRSS)

The purpose and intent of utilizing this silviculture system is also described in Section 12, Stocking Standards, within the FSP. The FSP holder will apply SEDRSS in areas where second-growth Douglas-fir or Douglas-fir/hemlock mixed stands are where the site index is generally between 24 and 36 (height at 50 years of age). Principles for utilizing these standards will be based on;

- a. ecologically suitable species,
- b. maintaining or minimizing impacts to forest health by following the leave tree criteria as set out in the CRIT SEDRSS Framework Implementation Guide (2014),
- c. maintaining or enhancing the commercially valuable timber supply, and
- d. monitoring and adapting to changing conditions due either to site specific circumstances or climate change.

Declaration of free growing (stocking obligations met) may not be earlier than two years after completion of harvest.

A well-spaced crop tree must be ecologically suitable, of good health, have good colour, form and vigour and be relatively free of significant pest infestation in order to be considered as free growing. Free Growing trees must also meet minimum free growing heights as listed in Table 1, according to the site series assigned to each particular Standards Unit, to demonstrate that the trees are adapted to the site, are growing well and can reasonably be expected to continue to do so.

Procedures for surveying in all situations described here will be according to the parameters set out in the CRIT 2014 SEDRSS framework and also follow the Free Growing damage criteria for SEDRSS Managed Stands in Coastal BC for Leave Trees (2014).

SEDRSS standards are set out in Tables 2 and 3, following, which will apply to cutblocks in second-growth stands within areas under this FSP and where a prescribing Forester has prescribed a Single Entry Dispersed Retention silvicultural system and the overstory (retention) trees are expected to contribute to the free growing obligation.

Cortes Forestry General Partnership Community Forest K4G Stocking Standards

		Regeneration Guide								Free Growing				
Biogeoclimatic Zone/Subzone	Site Series	Ecologically Suitable Species						Stocking		Regen	Min. Height			
		Standards ID	Conifer			Broadleaf	Target	Minimum	Delay (Max yrs)	Late (yrs)	Species	Ht (m)		
			Fd	Cw	Hw ²⁴		Pw ³¹	(well-spaced/ha)						
CWHdm ⁴⁷	01		Fd	Cw	Hw ²⁴	Pw ³¹		900	500	6	20	Fd, Hw	3.00	
	Hardwood						Dr ^{7,42,a}	1200	700			Pw	2.50	
	02*		Pl	Fd				400	200	3	20	Fd	2.00	
												Pl	1.25	
	03		Fd			Cw	Hw		800	400	6	20	Fd, Hw	2.00
													Cw	1.00
	04		Fd			Cw	Pw ³¹		900	500	6	20	Fd	3.00
													Pw	2.50
													Cw	1.50
	05		Cw	Fd		Pw ³¹	Bg ^{67,47} Hw ⁶⁰		900	500	6	20	Fd, Hw	4.00
	Hardwood							Act ^{42,a} Dr ^{42,a} Mb3	1200	700			Bg	3.50
	06		Cw	Hw		Fd ¹			900	500	6	20	Fd, Hw	3.00
Hardwood							Dr ^{7,41,a}	1200	700			Cw	1.50	
												Dr	4.00	
07		Bg ⁴⁷ Cw Fd			Bg ^{68,47} Hw ⁶⁰			900	500	6	20	Fd, Hw	4.00	
Hardwood							Act ^{41,a} Dr ^{41,a} Mb,41,a	1200	700			Bg	3.50	
												Cw	2.00	
08		Bg ⁴⁷	Cw					900	500	3	20	Bg	3.50	
												Cw	2.00	
09			Cw ¹		Bg ^{1,47}			900	500	3	20	Bg	3.50	
												Cw	2.00	
11		Pl ¹			Cw ¹			400	200	3	20	Pl	1.25	
												Cw	1.00	
12		Cw ¹			Hw ^{1,2} Pw ³¹ Ss ³⁵			800	400	3	20	Ss	3.00	
												Pw	2.50	
												Hw	2.00	
												Cw	1.00	
^^All CWH dm above Intermediate Cut Fd, Hw, Cw, Pw, Ss														
CWHxm ⁴⁷	01		Fd		Hw ²⁴		Cw Pw ³¹	900	500	6	11	Fd	3.00	
	Hardwood						Dr ^{7,42,a}	1200	700			Pw	2.50	
	02*		Pl		Fd			400	200	3	11	Hw	2.00	
												Cw	1.50	
												Dr	4.00	
												Fd	2.00	
03		Fd			Pl ⁶		Cw Hw	800	400	6	11	Hw, Pl	1.25	
												Cw	1.00	
04		Fd					Cw Pw ³¹	900	500	6	11	Fd	3.00	
												Pw	2.50	
												Cw	1.50	
05		Cw Fd					Bg ⁵³ Hw Pw ³¹	900	500	6	11	Fd	4.00	

Cortes Forestry General Partnership Community Forest K4G Stocking Standards

		Regeneration Guide								Free Growing			
Biogeoclimatic Zone/Subzone	Site Series	Ecologically Suitable Species						Stocking		Regen	Min. Height		
		Standards ID	Conifer			Broadleaf	Target	Minimum	Delay (Max yrs)	Late (yrs)	Species	Ht (m)	
			(well-spaced/ha)										
	Hardwood					Act ^{42,a} Dr ^{42,a} Mb ^a	1200 1200	700 700			Bg 3.50 Pw 2.50 Cw 2.00 Hw 1.75 Act, Dr, Mb 4.00		
06	Hardwood	Cw Hw		Fd ¹⁸	Pw	Bg ⁷	900	500	6	14	Bg, Fd 3.00 Pw 2.50 Hw 2.00 Cw 1.50 Dr 4.00		
07	Hardwood	Bg ⁴⁷ Cw Fd				Hw	900	500	6	11	Fd 4.00 Bg 3.50 Cw 2.00 Hw 1.75 Act, Dr 4.00		
08	Hardwood	Bg ⁴⁷ Cw Ss ³⁵				Act ^{41,a} Dr ^{41,a} Mb ^{41,a}	900 1200	500 700	3	11	Ss 4.00 Bg 3.50 Pw 2.50 Cw 2.00 Act, Dr, Mb 4.00		
09	Hardwood		Cw ¹		Bg ^{1,47}	Act ^{41,a} Dr ^{41,a} Mb ^{41,a}	900 1200	500 700	3	11	Bg 3.50 Cw 2.00 Act, Dr, Mb 4.00		
11		Pl ¹				Cw ¹	400	200	3	11	Pl 1.25 Cw 1.00		
12		Cw ¹				Hw ¹ Pw ³¹ Ss ³⁵	800	400	3	11	Pw 2.50 Ss 1.50 Hw 1.25 Cw 1.00		

^^All CWH xm above Intermediate Cut Fd, Cw, Pw, Pl

Footnotes:
 ^^ Intermediate Cut, all site series with the exception of low productivity stands, the standard applies to Layer 1 trees.
 *marginally suited for timber production |
 - Crop trees must meet or exceed the free growing damage criteria outlined in the Single Tree Dispersed Retention Stocking Standard Framework - Implementation Guide, 2014
 - Footnotes from the Reference Guide for FDP Stocking Standards (incorporating edits March 2019) apply for the CWH dm and the CWH xm1 biogeoclimatic zones listed above and found at: <https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/silviculture/stocking-standards>
 -Minimum inter-tree distance of 2.0 metres can be reduced to 1.6 metres for any given site where plantable spots are limited by site characteristics (e.g. Colluvial sites, wet sites, steep slopes, etc), where site conditions limit the ability of the FSP holder to meet target stocking standards.
 -No changes are currently proposed under the above stocking standards for Climate Change as per the 2019 Update to the Forest Development Reference Guide for Stocking Standards: Climate Change.

Footnotes below apply to Table 1		Footnote #	Footnote	Footnote #	Footnote
Conifer Tree Species		1	suitable on elevated microsites	46	use resistant seedlot south of the Dean Channel
		2	retired July 2017	47	risk of balsam woolly adelgid within quarantine area see http://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/animals-and-crops/plant-health/insects-and-plant-diseases/nursery-and-ornamentals/balsam-woolly-adelgid
"Ba" means amabilis fir;		3	suitable on coarse-textured soils	48	risk of browsing by deer
"Bg" means grand fir;		4	suitable on medium-textured soils	49	retired November 2010
"Bl" means subalpine fir;		5	footnote retired	50	restricted to sites where the species occurs as a major species in a pre-harvest, natural stand
"Bp" means noble fir;		6	suitable on nutrient-very-poor sites	51	retired July 2017
"Cw" means western red cedar;		7	suitable on nutrient-medium sites	52	suitable on sheltered microsites with deep soil
"Fd" means Douglas-fir;		8	suitable on steep slopes	53	minor component
"Hm" means mountain hemlock;		9	suitable on warm aspects	54	retired July 2017
"Hw" means western hemlock;		10	suitable on cool aspects	55	retired July 2017
"Lt" means tamarack;		11	suitable on crest slope positions	#	Broadleaf Management Constraints
"Lw" means western larch;		12	suitable on cold air drainage sites	a	productive, reliable, and feasible regeneration option
"Pa" means whitebark pine;		13	suitable at upper elevations	b	limited in productivity, reliability and/or feasibility
"Pl" means lodgepole pine;		14	suitable at lower elevations	#	Localized Footnotes
"Pw" means white pine;		15	suitable in the northern portion of biogeoclimatic unit	56	retired July 2017
"Py" means ponderosa pine;		16	suitable in the southern portion of biogeoclimatic unit	57	retired November 2010
"Sb" means black spruce;		17	suitable in the western portion of biogeoclimatic unit	58	South Area - Fd limited to a max 50% of preferred and acceptable well-spaced stems in the IDFmw and all subzones of the ICH due to root rot. See Root Rot Handbook for management issues (FLNRORD 2018).
"Se" means Engelmann spruce;		18	suitable in the eastern portion of biogeoclimatic unit	59	Prince George region - max 1,400 total sph of aspen and cottonwood. Treat as 'ghost' trees in surveys.
"Ss" means Sitka spruce;		19	retired July 2017	60	retired July 2017
"Sw" means white spruce;		20	retired July 2017	61	retired July 2017
"Sxs" means hybrid Sitka spruce;		21	retired July 2017	62	retired November 2010
"Sxw" means hybrid white spruce;		22	suitable in the southern Gardner Canal-Kitlope area	63	retired July 2017
"Yc" means yellow cedar.		23	retired July 2017	66	Mackenzie forest district - may be preferred where risk of snow damage is low or risk of frost damage is excessive on spruce
		24	suitable in wetter portion of biogeoclimatic unit	67	Retired July 2017
				68	Retired July 2017
				69	suitable at upper elevations of the biogeoclimatic unit only when used in the southern portion of the biogeoclimatic unit
				70	retired July 2017
				200	PI can be moved from Acceptable to Preferred, to the extent specified below, only on sites where there is a low risk of damage from forest health factors: <ul style="list-style-type: none"> • where there is > 50% PI in the pre-harvest stand, PI can be moved to preferred; • where there is 25-50% PI in the pre-harvest stand, PI can be moved to preferred to a maximum of 50% well-spaced stems. For areas with less than 25% PI in the pre-harvest stand, or where risk of damage from forest health factors is moderate or high, PI remains acceptable.
		36	retired July 2017	201	maximum 50% of preferred and acceptable well-spaced trees
		37	retired November 2010	202	no advance regeneration in even aged stand management
		38	footnote retired	203	recommended on sites for climate change adaptation
		39	retired July 2017	204	not recommended due to climate change concerns
		40	risk of redheart damage in areas subject to cold winter outflow wind	205	limited by cold temperatures
		41	limited by poorly drained soils	206	plant on exposed mineral soils
		42	suitable on sites with a fresh soil moisture regimes	207	obstacle planting recommended
		43	retired July 2017	208	In addition to the free growing damage criteria, BI advanced regeneration can be counted as well-spaced only where it meets the following criteria at free growing in even aged management: <ul style="list-style-type: none"> • apical dominance > 1 (as measured by comparing ratio of leader height to length of most recent branch whorl) at free growing • 75% live crown; • no scars, forks, crooks, or sweeps, and; • where it is < 1.5 m ht at time of harvest.
		44	suitable in areas of the subzone variant with relatively strong maritime influence		
		45	suitable in areas of the subzone variant with relatively strong continental influence		
Broadleaf Tree Species		25	retired July 2017		
"Acb" means balsam poplar;		26	suitable minor species on nutrient poor sites		
"Act" means black cottonwood;		27	partial high-canopy shade required for successful establishment		
"At" means trembling aspen;		28	limited by moisture deficit		
"Dr" means red alder;		29	risk of heavy browsing by moose		
"Ep" means common paper birch;		30	retired November 2010		
"Mb" means bigleaf maple;		31	must use of blister rust resistant stock. See BC Journal of Ecosystems and Management 10(1): 97-100 for supplementary information.		
"Og" means garry oak;		32	limited by growing-season frosts		
"Ra" means arbutus;		33	footnote retired and replaced with footnote 'a'		
		34	risk of snow damage		
		35	use resistant stock to mitigate risk of spruce weevil damage - See Ss Weevil Decision Tool: http://pubs.cif-ific.org/doi/abs/10.5558/lfc2013-042		
"Biogeoclimatic unit" or "BGC classification" means the zone, subzone, variant and site series described in the most recent field guide published by the Ministry of Forests for the identification and interpretation of ecosystems, as applicable to a harvested area.					
"MIN" or "Min" means minimum.					

Table 2: Single Entry Dispersed Retention Stocking Standards (SEDRSS) CWH dm Biogeoclimatic Zone											
Regeneration Guide											
Site Occupancy							Free Growing Criteria				
Biogeoclimatic Zone Classification	Layer*	Species (suitable)	Only used during plots (even-aged)	Moderate Retention (Basal Area)		High Retention (Basal Area)	Only used during plots	Regen Delay (max. Years)	MITD	Species	Height (m)
CWH dm 01, 04, 05, 06, 07	Residual Layer (L1) ≥ 12.5 cm DBH (BA m ² /ha)	Fdc*, Hw, Cw	0 - 8 m ² /ha	9-15 m ² /ha	16-22 m ² /ha	23-39 m ² /ha	≥ 40 m ² /ha	6 years	N/A	N/A	
	Regen Layers (L2, L3, L4) (WS/ha TSS - Target MSS - Minimum)	Fdc*, Hw, Cw	900 TSS	700 TSS	500 TSS	400 TSS	0		All layers (L2-L4) outside of L1 dripline and 2.0 m	As per Table 1 for Site Series	As per Table 1 for Site Series
			500 MSS	300 MSS	200 MSS	100 MSS	0				
CWH dm 03	Residual Layer (L1) ≥ 12.5 cm DBH (BA m ² /ha)	Fdc*, Hw, Cw	0 - 8 m ² /ha	9-15 m ² /ha	16-22 m ² /ha	23-28 m ² /ha	≥ 40 m ² /ha	6 years	N/A	N/A	
	Regen Layers (L2, L3, L4) (WS/ha TSS - Target MSS - Minimum)	Fdc*, Hw, Cw*	800 TSS	700 TSS	400 TSS	300 TSS	0		All layers (L2-L4) outside of L1 dripline and 2.0 m	As per Table 1 for Site Series	As per Table 1 for Site Series
			400 TSS	300 MSS	100 MSS	50 MSS	0				

- The standards above will be used on a site level basis following the 2014 SEDRSS Framework Implementation Guide (Coastal) and the Even-Aged Mgmt Stocking Standards in this FSP (Table 1).

* In moderate retention levels with <16 m²/ha basal area retained, Fdc will be considered an ecologically suitable species for regeneration in layer 4. In areas with >16

- There may be situations where the minimum height has not been achieved, but the understory stems meet all other criteria. In this situation a forest professional can use FPPR Section 97.1 to indicate the obligation has been met and provide a rationale that indicates the crop trees are well established, free from vegetative competition and are not expected to be impacted by a forest health agent.

Table 3: Single Entry Dispersed Retention Stocking Standards (SEDRSS) - CWH xm1 Biogeoclimatic Zone											
		Regeneration Guide Site Occupancy						Free Growing Criteria			
Biogeoclimatic Zone Classification	Layer*	Species (suitable)	Only used during plots	One of these 4 BA combinations are applicable to final SU Regen/FG SEDRSS obligations			Only used during plots	Regen Delay (max. Years)	MITD	Species	Height (m)
CWH xm 01, 04, 05, 06, 07	Residual Layer (L1) >=12.5cm DBH (BA m2/ha)	Fdc*, Cw, Hw	0 - 8 m2/ha	9-15 m2/ha	16-22 m2/ha	23-39 m2/ha	>= 40 m2/ha	6 years	N/A	N/A	
	Regen Layers (L2, L3, L4) (WS/ha TSS - Target MSS - Minimum)	Fdc*, Cw, Hw	900 TSS	700 TSS	500 TSS	400 TSS	0		All layers (L2-L4) outside of L1 dripline and 2.0 m	As per Table 1 for Site Series	As per Table 1 for Site Series
CWH xm 03	Residual Layer (L1) >=12.5cm DBH (BA m2/ha)	Fdc*, Cw, Hw	0 - 8 m2/ha	9-15 m2/ha	16-22 m2/ha	23-28 m2/ha	>= 40 m2/ha	6 years	N/A	N/A	
	Regen Layers (L2, L3, L4) (WS/ha TSS - Target MSS - Minimum)	Fdc*, Cw, Hw	800 TSS	700 TSS	400 TSS	300 TSS	0		All layers (L2-L4) outside of L1 dripline and 2.0 m	As per Table 1 for Site Series	As per Table 1 for Site Series

- The standards above will be used on a site level basis following the 2014 SEDRSS Framework Implementation Guide (Coastal) and the Even-Aged Mgmt Stocking Standards in this FSP (Table 1).

* In moderate retention levels with <16 m2/ha basal area retained, Fdc will be considered an ecologically suitable species for regeneration in layer 4. In areas with >16 m2/ha, Fdc will not be considered ecologically suitable for acceptable crop species in layer 4.

- There may be situations where the minimum height has not been achieved, but the understory stems meet all other criteria. In this situation a forest professional can use FPPR Section 97.1 to indicate the obligation has been met and provide a rationale that indicates the crop trees are well established, free from vegetative competition and are not expected to be impacted by a forest health agent.

Appendix C Vancouver Island Land Use Plan

Higher Level Plan Order is attached following

Vancouver Island Land Use Plan Higher Level Plan Order

Order Establishing Resource Management Zones and Resource Management Zone Objectives within the area covered by the Vancouver Island Land Use Plan, pursuant to sections 3(1) and 3(2), as well as section 9.1 of the Forest Practices Code of British Columbia Act (the Act)

- I. Pursuant to section 3(1) of the Act, the following zones, as presented on Map 1 (attached), are Resource Management Zones (RMZ):
 - A. Special Management Zones (SMZ) 1 through 14 and 17 through 22;
 - B. Resource Management Zones 4, 5, 6, 8, 10, 11, 15, 18, 19, 21, 23, 24, 27, 28, 30, 36, 38, 40, 42, 43, 44, and 47; these RMZ are also referred to as Enhanced Forestry Zones (EFZ);
 - C. Resource Management Zones 7 and 14; these two RMZ are also referred to as General Management Zones (GMZ).

- II. Pursuant to section 3(2) of the Act, the following provisions are Resource Management Zone objectives:
 - A. *for Special Management Zones 1 through 14 and 17 through 22:*
 1. Sustain forest ecosystem structure and function in SMZs, by:
 - (a) creating or maintaining stand structures and forest attributes associated with mature¹ and old² forests, subject to the following:
 - i. the target for mature seral forest should range between one quarter to one third of the forested area of each SMZ³; and
 - ii. in SMZs where the area of mature forest is currently less than the mature target range referred to in (i) above, the target amount of mature forest must be in place within 50 years;
 - (b) retaining, within cutblocks⁴, structural forest attributes and elements with important biodiversity functions⁵; and
 - (c) applying a variety of silvicultural systems, patch sizes and patch shapes across the zone, subject to a maximum cutblock size of 5 ha if clearcut, clearcut with reserves or seed tree silvicultural systems are applied, and 40 ha if shelterwood, selection or retention silvicultural systems are applied⁶.

¹ The mature seral forest is defined as generally 80 to 120 years old or older, depending on species and site conditions. The structure of mature seral forests generally includes canopies that vary vertically or horizontally, or both. The age and structure of the mature seral stage will vary significantly by forest type and from one biogeoclimatic zone to another.

² The old seral forest is defined as generally greater than 250 years old, containing live and dead (downed and standing) trees of various sizes, including large diameter trees, and of various tree species, including broad-leaved trees. The structure of old seral forest varies significantly by forest type and from one biogeoclimatic zone to another.

³ Mature seral targets will be established through landscape unit planning. See transition provisions under III.

⁴ Within cutblocks: generally means non-contiguous with cutblock boundaries.

⁵ This includes, but is not limited to snags, wildlife trees, downed logs.

⁶ Maximum cutblock sizes refer to net area to be reforested.

Vancouver Island Land Use Plan Higher Level Plan Order

2. Despite subsection 1(c) above, cutblocks larger than 5 or 40 ha, as the case may be, may be approved if harvesting is being carried out to recover timber that was damaged by fire, insects, wind or other similar events and wherever possible, the cutblock incorporates structural characteristics of natural disturbances.
3. Pursuant to section 2(1) of the Operational Planning Regulation (OPR)⁷, the approval of both the district manager, Ministry of Forests and the designated environment official, Ministry of Environment, Lands and Parks is required for all forest development plans, or parts of forest development plans that relate to areas within the following SMZs: 1, 3, 4, 6, 8, 9, 10, 11, 13, 17, 19, 20 and 21.

B. for Special Management Zones 8, and 13, and parts of Special Management Zones 1, 3 and 11, which are located within landscape units with higher biodiversity emphasis, as shown on Map 2:

4. Maintain late-successional habitat elements and attributes of biodiversity⁸ in forested ecosystems with emphasis on regionally rare and underrepresented ecosystems, by retaining old seral forest at the site series/surrogate level of representation⁹.
5. Retain late-successional habitat elements and attributes of biodiversity in patches of variable size.

C. for the following Special Management Zones with primary visual resource values: 1, 2, 3, 5, 6, 7, 10, 11, 12, 13, 14, 18, 19 and 22, as shown on Map 3:

6. Maintain the visual quality of known scenic areas in accordance with the recommended visual quality classes in the visual landscape inventory, until the district manager establishes visual quality objectives for the areas.

D. for all Enhanced Forestry Zones, as shown on Map 1, save and except the parts of those zones which are designated as community watersheds as defined in section 41(8) of the Act:

7. To increase the short-term availability of timber,
 - (a) a cutblock may be larger than 40 ha pursuant to section 11(2)(a) of the OPR; and
 - (b) pursuant to section 68(4) of the OPR, a cutblock is greened-up if it is adequately stocked and the average height of those trees that are
 - (i) the tallest tree in each 0.01 ha plot included in a representative sample, and
 - (ii) a commercially valuable species or other species acceptable to the district manageris at least 1.3 meters;

⁷ BC Reg. 107/98

O.C. 426/98 -

Effective: June 15, 1998.

⁸ This includes, but is not limited to: large diameter (> 60 cm) live, decaying and dead standing trees (providing nest and cavity sites); downed wood, including large diameter pieces (50 to 150 cm); deciduous broad-leaved trees, both in riparian and upland areas.

⁹ The level of representation of old seral forest will be applied through landscape unit planning.

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unless the district manager determines that a cutblock referred to under (a) or (b) would significantly impact specific hydrological, wildlife, biodiversity, scenic or recreation values.

8. Avoid or mitigate adverse hydrological impacts, which may result from the practices referred to in objective 7, in watersheds with significant watershed sensitivity and significant fisheries values, as determined by the district manager and designated environment official.
9. When proposing the species composition for the purposes of OPR section 39 (3) (o), a person may, pursuant to OPR section 41, select a single species that is ecologically suited to the area, if a mix of species was present on the area before the timber was harvested.
- 9.1 The area that may be subject to selection of a single species pursuant to objective 9 is limited to no more than 20 per cent of the forested area of any variant within a given EFZ.

E. for Resource Management Zones 7 and 11:

10. To avoid severe social and economic consequences, as determined by the district manager and the designated environment official, the full target of 13 per cent for old growth retention in CWHvm1 may be reduced by up to one third provided that ecologically suitable second growth forest is identified to recruit the shortfall¹⁰.

F. for Resource Management Zone 42:

11. Retain old seral forest in CWHvm1 in accordance with the full old seral target of 13 per cent for the variant.
- 11.1 Despite objective 11, up to one third of the old seral target may be recruited from second growth provided that
 - (a) such recruitment is necessary to avoid severe social and economic consequences;
 - (b) such recruitment will not impact the ability to conserve suitable habitat of identified wildlife in accordance with the Identified Wildlife Management Strategy¹¹; and
 - (c) ecologically suitable second growth forest is identified to recruit the shortfall.¹²

G. for Special Management Zone 10:

12. Retain or recruit old growth forest in CWHxm2 in accordance with the full old seral target of 9 per cent for the variant.

H. for Resource Management Zone 10

13. Retain old seral forest in CWHxm2 in accordance with the full old seral target of 9 per cent for the variant.

¹⁰The targets for retention or recruitment of old growth forests will be achieved through the establishment of old growth management areas as part of landscape unit planning.

¹¹ See "Managing Identified Wildlife: Procedures and Measures", Volume 1, February 1999.

¹²The targets for retention or recruitment of old growth forests will be achieved through the establishment of old growth management areas as part of landscape unit planning.

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- 13.1 Despite objective 13, up to one third of the old seral target may be recruited from second growth provided that
- such recruitment is necessary to avoid severe social and economic consequences;
 - such recruitment will not impact the ability to conserve suitable habitat of identified wildlife in accordance with the Identified Wildlife Management Strategy¹³; and
 - ecologically suitable second growth forest is identified to recruit the shortfall.¹⁴

I. for Resource Management Zone 30:

14. Retain all remaining old growth forest in CWHxm2 until landscape unit objectives for old growth retention or recruitment have been established in accordance with the full old seral target of 9 per cent for the variant.

J. for Resource Management Zones 8, 14, 28 and 43:

15. Retain old growth forests to meet old seral targets¹⁵ and marbled murrelet habitat requirements¹⁶ in the non-contributing¹⁷ land base to the fullest extent possible.
16. Beyond retention in the non-contributing land base, retain old forests in the timber harvesting land base, up to the full target amount, if the district manager and the designated environment official determine that such retention is required to maintain critical marbled murrelet habitat¹⁸.

III. Transition

17. Pursuant to section 9.1 of the Act, the following objectives will not be implemented in an area until landscape units and objectives have been established for the area, in accordance with section 4 of the Act:
Objectives 1(a); 4; 5; 10; 11; 11.1; 12; 13; 13.1; 15; and 16.
18. In the event that landscape units and objectives are not established in an area within 2 years of the date that this order takes effect, the objectives referred to in paragraph 17 will be implemented in the area.

IV. Filing the Order

This order will be filed with the regional manager of the Vancouver Forest Region and will take effect on December 1, 2000.

¹³ See "Managing Identified Wildlife: Procedures and Measures", Volume 1, February 1999.

¹⁴ The targets for retention or recruitment of old growth forests will be achieved through the establishment of old growth management areas as part of landscape unit planning.


¹⁵ See "Landscape Unit Planning Guide", March 1999.

¹⁶ See "Managing Identified Wildlife: Procedures and Measures", Volume 1, February 1999.

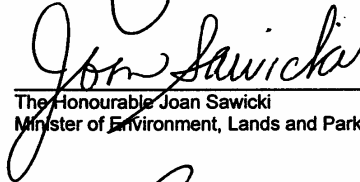
¹⁷ Non-contributing: the crown forested land base that does not contribute to the annual allowable cut, but does contribute to biodiversity objectives and targets.

¹⁸ Retention or recruitment of old growth forests will be achieved through the establishment of old growth management areas as part of landscape unit planning.

Vancouver Island Land Use Plan Higher Level Plan Order


The Honourable Jim Doyle
Minister of Forests

24/OCT/00
Date


The Honourable Joan Sawicki
Minister of Environment, Lands and Parks

19/10/00
Date


The Honourable Dan Miller
Minister of Energy and Mines

19/10/00
Date

Appendix D

Cortes Landscape Unit Plan

Cortes Landscape Unit

Sustainable Resource Management Plan



Ministry of Forests, Lands and
Natural Resource Operations

South Coast Region

2012

APPROVED

July 10, 2012

Sustainable Resource Management Plan: Cortes Landscape Unit

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1. Introduction

This Sustainable Resource Management Plan identifies protection measures for landscape level biodiversity and old growth forests in the Cortes Landscape Unit (LU). A description of the landscape unit, discussion on significant resource values, and an Old Growth Management Area (OGMA) summary and rationale are provided. See Appendix 1 for the OGMA summary and Appendix 2 for a list of acronyms used.

Biological diversity or biodiversity is defined as: *‘the diversity of plants, animals and other living organisms in all their forms and levels of organisation, and includes the diversity of genes, species and ecosystems as well as the evolutionary and functional processes that link them’*¹. British Columbia is the most biologically diverse province in Canada. In British Columbia, 124 species or subspecies of known vertebrates and 309 vascular plants are listed for legal designation as threatened or endangered². The continuing loss of biological diversity will have a major impact on the health and functions of ecosystems and the quality of life in the province (Resources Inventory Committee, 1998).

Planning for OGMA and Wildlife Tree Patch (WTP) biodiversity values is recognized as a high priority for the province. LU Planning through Section 93.4 of the *Land Act* for the purposes of the *Forest and Range Practices Act* (FRPA) allows for the legal establishment of objectives to address landscape level biodiversity values. Managing for biodiversity through retention of old growth forests is important not only for wildlife, but can also provide important benefits to ecosystem management, protection of water quality and preservation of other natural resources. Although not all elements of biodiversity can be, or need be, maintained on every hectare, a broad geographic distribution of old growth ecosystems is intended to help sustain the genetic and functional diversity of native species across their historic ranges.

The Sunshine Coast Forest District completed LU boundaries and assigned Biodiversity Emphasis Options (BEO) in accordance with the direction provided by government. There are 26 LU’s in this district. Through a ranking process the Cortes LU was rated as an intermediate BEO.

Substantial work was completed in 2004-2005 by the Ministry of Agriculture and Lands (MAL), Bill Lasuta and Associates Ltd., and Mosaic Forest Management Ltd. with input provided by BC Timber Sales (BCTS) and Ministry of Environment (MOE) as well as from forest licensees. Funding was provided through the Forest Investment Account (FIA).

¹ Definition of Biodiversity from page 2 of the Forest Practices Code *Biodiversity Guidebook* (September 1995)

² BC Conservation Data Centre 2010. BC Species and Ecosystems Explorer. BC Minist. Of Environ. Victoria, British Columbia. Available: <http://www.env.gov.bc.ca/atrisk/toolintro.html>

Subsequent work was completed in 2010 by Ministry of Forests, Lands and Natural Resource Operations in cooperation with forest licensees.

Public review and comment and First Nations consultation was completed through July and August of 2010 on the proposed OGMA. A summary of comments from the 60 day public review and comment period is included in Appendix III

Supporting documentation regarding government policy, planning processes and biodiversity concepts are provided in the 1995 *Biodiversity Guidebook*, the 1999 *Landscape Planning Guide* (LUPG), the *Vancouver Forest Region Landscape Unit Planning Strategy* (1999), and the *Sustainable Resource Management Planning Framework: A Landscape-level Strategy for Resource Development*.

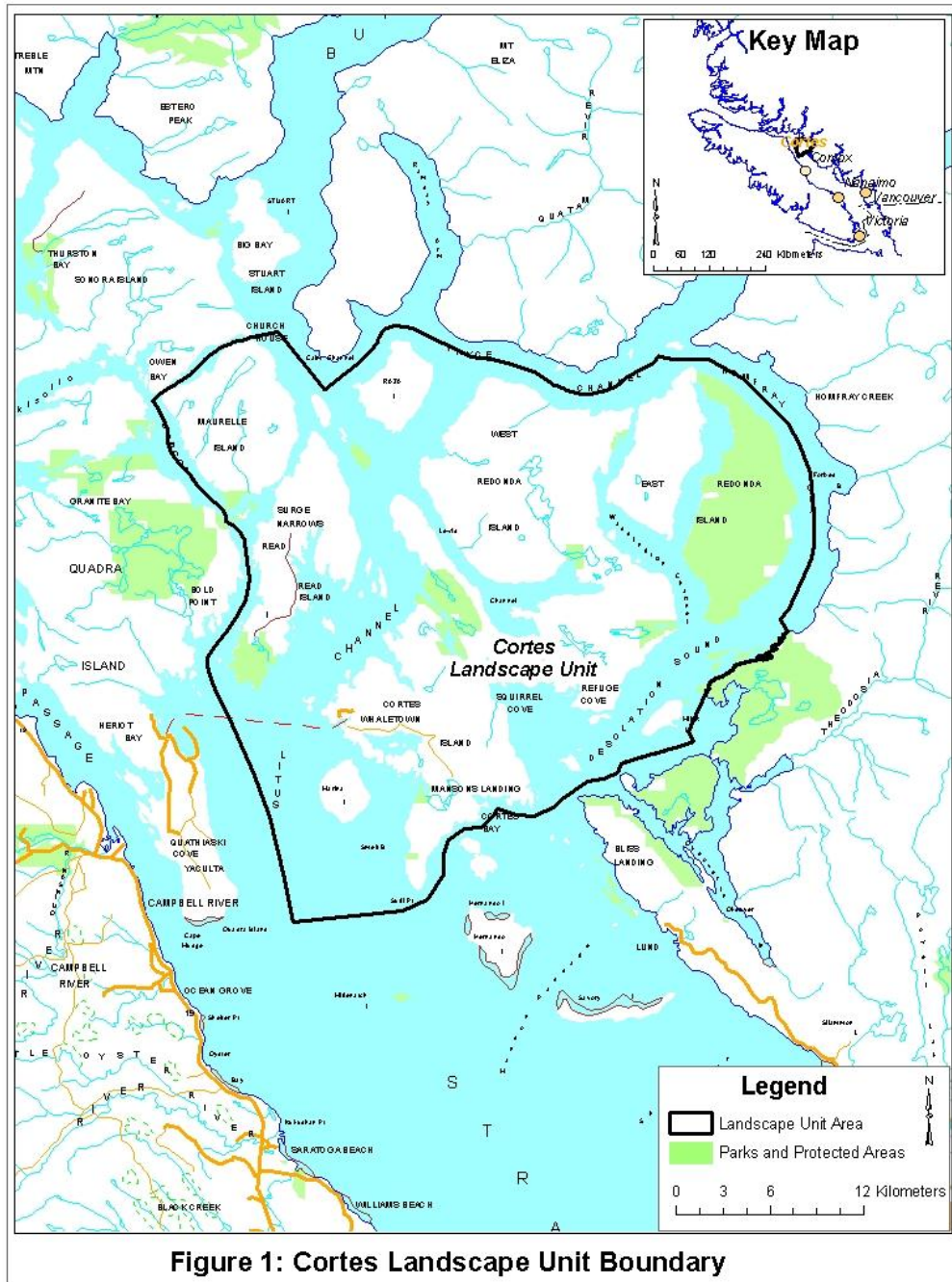
2. Landscape Unit Description

2.2 Biophysical Description

The Cortes LU covers a total area of 55,659 ha, encompassing the main islands of Maurelle, Read, Raza, Cortes, West Redonda, and East Redonda. Several smaller islands, and groups of islands, such as Marina Island, the Rendezvous Islands, and the Penn Islands, to name a few, lie between the larger ones to make up the landscape unit. Desolation Sound lies to the south of the LU and Pryce Channel to the north (Figure 1).

Of the total LU area, 39,726 ha (72%) is within the Crown forest land base, with 25,125 ha of Crown forest included within the THLB. The remaining 15,933 ha (28%) is non-forested (rock, alpine forests, water) or non-Crown (private land, Indian Reserves) and have been excluded from any OGMA contributions and calculations.

The Cortes LU lies within the Georgia Basin and Southern Pacific Ranges Ecosections. Its climate is best described as warm and dry in the summer, and cool and moist in the winter. The higher elevations of West and East Redonda Islands are cooler and moister with moderate snowfall in the winter months



The LU is comprised of the following seven BEC subzones/variants: Coastal Western Hemlock, southern dry maritime (CWHdm); Coast Western Hemlock, submontane moist maritime (CWHmm1); Coastal Western Hemlock, submontane very wet maritime (CWHvm1), Coastal Western Hemlock, montane very wet maritime (CWHvm2); Coastal Western Hemlock, very dry maritime, eastern variant (CWHxm1); Coastal Western Hemlock, very dry maritime, western variant (CWHxm2); and Mountain Hemlock,

windward moist maritime (MHmm1). These seven BEC subzones/variants represent two different Natural Disturbance Types (NDT), with CWHvm1, CWHvm2, and MHmm1 in NDT1 (rare stand initiating events), and CWHdm, CWHmm1, CWHxm1, and CWHxm2 in NDT 2 (infrequent stand-initiating events).

Forests in NDT 1 are influenced by rare stand-initiating events and historically were generally uneven-aged or multi-storied uneven aged, with regeneration occurring in gaps created by the death of individual trees or small patches of trees. Approximately 21% of the productive forest area of the Cortes LU is within NDT 1. The remaining productive forest is within NDT 2. These forest ecosystems are influenced by infrequent stand-initiating events and historically were usually even-aged, but extended post-fire regeneration periods produced some stands with uneven-aged characteristics.

Low relief islands (such as Cortes Island) and accessible areas of the remaining islands in the CWHxm1, CWHxm2, CWHmm1, CWHdm and CWHvm1 have sustained substantial levels of harvesting over the years. Many of these areas now support thrifty second growth, and remnant patches of old growth forests are scattered throughout. Old growth representation targets in the CWH vm1, CWH vm2, and MH mm1 BEC variants can be met predominantly from the non-contributing (NC) land base. However, in the lower elevation BEC's, such as the CWH xm1, CWH xm2, and CWH mm1, more of the old seral target is derived from the partially contributing and contributing land base.

2.3 Summary of Land Status

Land status within the Cortes landscape unit is summarised in Table 1. There are various ownership classes that are excluded from the Crown Forest land base and therefore excluded from the OGMA selection process. This includes 9112 hectares of private land, 482 ha of woodlots, and 393 hectares of Indian Reserve. Although suitable forested stands within the parks and ecological reserves in the landscape unit cannot be legally established as OGMAs, 7,436 ha contributes to the Crown Forest Land Base. A portion of that area has been identified as OGMAs and will contribute to the old growth targets.

Of the total area, 39,726.1 hectares (71%) are within the Crown Forested Land Base (CFLB). The remaining 15,932.7 hectares (29%) of the landscape unit are classified as non-forested or non-Crown (rock, alpine tundra, water, private land, etc.) and have been excluded from OGMA contributions and calculations.

Table 1 Land Status of the Cortes Landscape Unit

Ownership Class	Crown Forest Land Base (ha)	Excluded Land Base (ha)	Total Area (ha)	Total of LU %
Private	0.0	9,111.9	9,111.9	16.4
Federal Reserve	0.5	8.0	8.5	0.0
Indian Reserve	0.0	393.0	393.0	0.7
Crown Ecological Reserve	5,261.8	922.1	6,183.9	11.1
Crown UREP	212.3	11.7	224.0	0.4
TSA or PSYU	30,968.2	4,553.2	35,521.3	63.9
Provincial Park	2,112.8	445.4	2,558.2	4.6
Provincial Park or Reserve	17.9	2.6	20.5	0.0
Misc Reserve	0.0	1.2	1.2	0.0
Misc Reserve	43.0	0.5	43.4	0.1
Woodlot License	1,109.6	481.5	1,591.1	2.9
Crown Misc. Reserves	0.0	1.8	1.8	0.0
Total	39,726.1	15,932.7	55,659.4	100.0

Table 2 provides a breakdown of the landbase based on biogeoclimatic ecosystem classification (BEC) variants or subzones, and lists the OGMA target. Old seral representation targets are determined and applied based on the Crown forest area in each BEC variant. Landbase classification information is used in landscape unit planning to minimize timber supply impacts, however, operationally the harvestable area and the Timber Harvesting Land Base (THLB) are not consistent because inventories and assumptions used to identify the THLB area are not always an accurate representation of what timber will be harvested. There is usually some harvesting of forest that did not contribute to timber supply forecast used in the last Allowable Annual Cut (AAC) determination.

Old growth targets are not set for the CMAunp ecotype as it is predominantly non-forest and does not make up part of the productive forest land base. However, it is possible that small forested areas may be captured in the alpine, and where analysis determines that they are suitable for biodiversity conservation may be selected as OGMAs.

Table 2. Current Level of Old Growth Forest and Old Growth Targets by Biogeoclimatic Ecosystem Classification Unit

BEC label	Crown Forested Land Base			Excluded Land Base (ha)	Crown Forested Land Base (ha) (C + P + N)	Total Area (ha)	OGMA Target %	
	Contributing	Partial Contributing	Non Contributing	X			%	Ha
CMAunp			1.6	71.2	1.6	72.9	0.00	0.0
CWHdm	8905.4	1871.6	6139.5	2503.1	16916.5	19419.6	0.09	1522.5
CWHmm1	285.3	53.0	41.0	30.2	379.2	409.5	0.09	34.1
CWHvm1	1535.6	828.4	2864.0	359.3	5227.9	5587.2	0.13	679.6
CWHvm2	741.0	403.9	1620.2	307.9	2765.1	3073.0	0.13	359.5
CWHxm1	4209.5	308.8	1886.6	8225.2	6404.9	14630.1	0.09	576.4
CWHxm2	4846.3	1059.6	1053.5	3908.3	6959.4	10867.6	0.09	626.3
MHmm1	41.2	35.0	995.2	527.5	1071.4	1598.9	0.19	203.6
	20564.3	4560.3	14601.5	15932.7	39726.1	55658.8		4002.1

CWHdm: Coastal Western Hemlock biogeoclimatic zone, dry maritime subzone.

CWHmm1: Coastal Western Hemlock, submontane moist maritime variant

CWHvm1: Coastal Western Hemlock biogeoclimatic zone, submontane very wet maritime variant.

CWHvm2: Coastal Western Hemlock biogeoclimatic zone, montane very wet maritime variant.

CWHxm1: Coastal Western Hemlock biogeoclimatic zone, windward very dry maritime variant

CWHxm2: Coastal Western Hemlock biogeoclimatic zone, western very dry maritime variant

MHmm1: Mountain Hemlock biogeoclimatic zone, windward moist maritime variant.

Table 3 outlines the total amount of OGMA required and established in each variant/subzone and from which forest category (e.g. non-contributing or contributing). The OGMAs delineated as part of the Cortes Landscape Unit Plan meet the old growth targets consistent with those targets specified in the Order Establishing Provincial Non-spatial Old Growth Objectives. A rationale for OGMA designations within the Cortes landscape unit is provided in Appendix 1. The location of proposed OGMAs is identified in the map that is part of the landscape unit plan.

Table 3. Non-contributing, Constrained THLB and Unconstrained THLB

BEC label	OGMA Target %		Established OGMA (ha)	OGMA in Non-Contributing (N)		OGMA in Partial Contributing (P)		OGMA in Contributing (C)		OGMA in Excluded (X)		Difference (Established - Target)
	%	Ha		%	ha	%	ha	%	ha	%	ha	
CWHdm	0.09	1522.5	1536.4	62.2	956.1	14.9	228.3	21.2	325.4	1.7	26.6	13.9
CWHmm1	0.09	34.1	40.4	51.3	20.7	11.3	4.6	37.4	15.1	0.0	0.0	6.3
CWHvm1	0.13	679.6	688.0	79.7	548.5	7.1	49.2	12.3	84.8	0.8	5.6	8.4
CWHvm2	0.13	359.5	371.3	88.4	328.2	4.7	17.5	0.2	0.8	6.7	24.8	11.8
CWHxm1	0.09	576.4	599.9	41.0	246.0	4.4	26.6	53.4	320.2	1.2	7.0	23.4
CWHxm2	0.09	626.3	643.8	46.7	300.4	29.7	191.5	19.2	123.5	4.4	28.4	17.5
MHmm1	0.19	203.6	215.4	100	215.3	0.0	0.0	0.0	0.0	0.0	0.0	11.8
		4002.1	4095.2	63.9	2615.2	12.6	517.6	21.2	869.9	2.3	92.4	93.1

3. Key Resource Tenure Holders

The process to select OGMAs included the identification of tenures that are administered by the Ministry of Forests, Lands and Natural Resource Operations, and the Ministry of Energy and Mines. The selection of OGMAs generally avoided placement within existing tenures where permanent forest disturbance could occur (mineral claims, power projects).

3.1 Forest Tenure Holders

The Cortes LU is within the Sunshine Coast Timber Supply Area (TSA). Three forest licensees, three woodlot licensees, and BC Timber Sales operate in the landscape unit. A&A Trading holds a chart area on the northern portion of West Redonda Island, International Forest Products Ltd. hold chart areas over Raza and East Redonda Islands, and BC Timber Sales operates on the southern portion of West Redonda and Maurelle, Islands. Northwest Hardwoods holds an overlapping deciduous licence throughout the

LU. Woodlot Licences 46 and 2062 are located on Read Island. Woodlot Licence 90 is located on Cortes Island.

3.2 Mineral Tenure Holders

At the time of writing, there are twenty one mineral tenures located in the Cortes Landscape Unit, including: 549970, 549376, 549603, 549382, 549597, 549590, 549389, 555987, 555792, 555852, 555854, 804823, 804842, 804862, 804982, 805003, 805042, 631723, 645323, 661943, 661944. The selection of OGMA's followed the intent of avoiding placement over existing tenure holders, where possible.

The establishment of OGMA's will not have an impact on the status of existing aggregate, mineral and gas permits or tenures. Exploration and development activities are permitted in OGMA's but the preference is to proceed with exploration and development in a way that is sensitive to the old growth values of the OGMA. If exploration and development proceeds to the point of significantly impacting old growth values, then the OGMA will be replaced.

4. Significant Resource Values

The Cortes LU supports a range of natural resource values and features, and a diversity of social and cultural values and influences.

4.1 Fish, Wildlife and Biodiversity

Eighteen wildlife species of management concern are known or suspected to be present in the Cortes LU (BC Conservation Data Centre). These include RED-listed, BLUE-listed and regionally important species. Special habitats, which can be protected under FRPA, for species like mountain goats and grizzly bears are not present in the Cortes LU. Conversely, marbled murrelet nesting habitat has been identified and although used for OGMA's, to date none has been proposed for protection within Wildlife Habitat Areas.

The intent of defining OGMA's is not to address the individual needs of all these species, but rather to provide a strong foundation for landscape level biodiversity management. In the Cortes LU, the species of specific concern when identifying OGMA's was Marbled Murrelet. To that end, a total of 28 Good or Superior Marbled Murrelet polygons were identified and OGMA's overlap each one of these.

4.2 Provincial Parks & Protected Areas

There are several small and medium sized parks in the Cortes LU, including: Teakerne Arm Provincial Park (128 ha), Walsh Cove Provincial Park (85 ha), and Roscoe Bay Provincial Park (247 ha) on West Redonda Island, Surge Narrows Provincial Park (488 ha) on Maurelle Island, Ha'thayim Marine Provincial Park (1277 ha), Smelt Bay (16 ha) and Mansons Landing (100 ha) Provincial Park on Cortes Island, Read Island Provincial Park (639 ha), and Rendezvous Island South Provincial Park (163 ha). Covering the entire east half of East Redonda Island is the East Redonda Island Ecological Reserve (6212 ha). Some of the park and ecological reserve area reported above is water.

In combination, the parks offer a variety of activities including: hiking trails, canoeing, sea kayaking, scuba diving, swimming, marine fishing, wildlife viewing, campsite & wilderness camping and picnic areas. The primary role of the ecological reserve is to conserve representative coastal ecosystems in the CWH and MH biogeoclimatic zones.

4.3 Water Quality

There are no established community watersheds within the Cortes LU. However, potable water from ground and surface sources (streams and lakes) is required to support the population living on Cortes, and to a much lesser extent, Maurelle and Read Islands as well.

4.4 Private Land

Most of the private land in the Cortes LU is located on Cortes, Read, Maurelle, Marina, and other small islands. Cortes Island is home to approximately 950 residents, located primarily in the communities of Whaletown, Squirrel Cove, and Manson's Landing. Only small parcels of private land are located on portions of East and West Redonda Islands. Much of the private land has been altered from its natural state for settlement, timber harvesting, agriculture or recreational purposes.

4.5 Forest Resources

Several of the islands within this LU support a substantial timber harvesting land base. Continued access to commercially valuable timber, including future second growth, is a significant concern to forest licensees.

Commercially valuable tree species in the Cortes LU are most easily described by elevation. Low elevation forests are dominated by Douglas-fir, Western Hemlock, and

Western red cedar. Western and Mountain Hemlock, Amabilis Fir, and Yellow cedar are the most common species at mid to high elevations.

4.6 *Mineral Resources*

Subsurface resources (minerals, coal, oil, and gas) and aggregate resources are valuable to the province, but are difficult to characterise due to their hidden nature.

Ministry of Energy and Mines (MEM) has rated the industrial and metallic mineral potential of this LU as High. This ranking is based on a qualitative analysis which takes into account the values of known resources, past exploration and production as well as the number of known mineral occurrences and a subjective probability estimate of value by industry experts.

4.7 *Recreation*

The Cortes LU is easily accessible by boat from various population centres on the Sunshine Coast and Vancouver Island. Scheduled ferry service exists between Herriot Bay on Quadra Island and Whaletown on Cortes Island.

Recreational boating and commercial tourism use is heavy during the summer months, especially in and around Cortes Island. The number of people living in this LU likely doubles in the summer. Winter recreational activity is limited due to the remoteness of most of the Landscape Unit to motorized access and poorer weather conditions.

The Cortes LU does not experience the same hunting pressure as areas in closer proximity to larger populations. Any recreational hunting that does occur in this LU would likely be on populated islands with minor incursions onto those islands with road systems in place that can handle ATV's or 4-wheel drive vehicles.

Stream angling and lake fishing opportunities exist but are limited. Trail hiking, berry and mushroom picking and wildlife viewing/sightseeing also occur, but predominantly during the summer months. Overall, recreation use in the Cortes LU would be rated as moderate to high.

5. First Nations

The Cortes LU is located within the claimed traditional territories of the Klahoose, Xwémalhkwa (Homalco), Sliammon, We Wai Kai (Cape Mudge) and Wei Wai Kum (Campbell River) First Nations. The Nanwakolas Strategic Engagement Agreement is referenced with respect to consultation (using their consultation process for consultation with the Kwiakah and Wei Wai Kum (Campbell River) FN).

Between 1997 and 1999, an Archaeological Overview Assessment model was developed by Millennia Research to indicate where archaeological sites are most likely located. This was done to minimize potential impacts by forestry operations on culturally important areas.

It is not the province's intention to limit the ability of any parties at the treaty negotiation table to discuss issues of interest in these areas, nor to take administrative or operational action that has the potential to infringe the existing Aboriginal or treaty rights of the First Nations in these areas. These OGMAs do not affect First Nations Aboriginal rights and title, nor do they affect traditional and cultural activities.

6. OGMA Methodology

6.1 Existing Planning Processes

An important part of OGMA planning is to ensure that separate planning processes complement each other. For example, OGMAs are often situated within or adjacent to MAMU habitat in order to overlap constraints and to increase patch size. These larger patches then allow greater opportunity to improve connectivity between adjacent patches.

Efforts are also made to include suitable forested stands adjacent to high value wildlife and recreational features such as wetland, lakes and streams wherever possible to enhance conservation measures for these values. Areas previously identified as Environmentally Sensitive Areas (ESA) are included in OGMAs where they provide mature or old forest representation or are in under-represented types of ecosystem. In addition, some forest stands not classified as "old growth" are included in OGMAs to reflect operational constraints related to management and to increase patch size. The intent is to maintain a series of old forest habitat patches across probable movement corridors to allow wildlife dispersal and gene flow. The use of this approach at the landscape level and conservation of biodiversity at the stand level (e.g. Wildlife Tree

Patches) will increase the likelihood of sustaining ecosystems and wildlife populations well distributed across their natural range.

6.2 *Assessment and Review*

Efforts were made during preparation of this LU plan to ensure OGMA's were generally distributed spatially and not concentrated in a particular area or mapsheet. This is in keeping with the "coarse filter" approach of biodiversity management at the landscape scale, whereby representative "old growth" stands are protected in order to maintain ecosystem processes and specific wildlife habitat requirements that may be poorly understood.

In all cases, a detailed air photo review was performed to confirm the forest cover attributes and suitability of a given stand for OGMA inclusion; as follow up, satellite imagery was used to help locate OGMA boundaries and verify suitability. Numerous stands have also been field checked to verify the presence of desirable old seral characteristics.

OGMA's were selected based on a review of stand attributes in an effort to maximize their value from a biodiversity standpoint while minimizing timber supply impact. In general, opportunities to recruit larger patches to provide for forest interior habitat conditions were favoured over smaller patches. In this search, an effort was extended to minimize the impact on the timber supply by combining areas in the non-contributing (parks, ecological reserves) with areas within the timber harvesting land base. In addition, a significant number of smaller remnant patches containing age class 9 were delineated in conformance with the Landscape Unit Planning Guidebook (LUPG).

6.3 *Boundary Mapping*

OGMA boundaries used natural features (e.g. streams) or man-made features (e.g. roads, cutblock edges) wherever possible to ensure they could be located on the ground. OGMA's were also delineated to include complete forest stands (forest cover polygons) wherever possible to reduce operational uncertainty and increase ease of OGMA mapping. OGMA's were mapped using a 1:20,000 scale TRIM base map which forms the legal standard for measurement. Procedures for operating within OGMA's are discussed in the OGMA Amendment policy.

6.4 Amendment Policy

A MFLNRO Coast Region policy provides direction to forest tenure agreement holders when applying for amendments to OGMA legal objectives. Amendment procedures cover such things as minor or major amendments for resource development (e.g. roads, bridges, boundary issues, rock quarries and gravel pits), or relocation of OGMAs. The policy also discusses acceptable management activities and review procedures. The amendment policy forms an integral part of this plan.

In general, most OGMA boundaries are not 'permanently fixed', they can be moved over time so long as biodiversity objectives are maintained. Replacement OGMAs are required to be equivalent or better than the original. As stand succession proceeds, some currently unsuitable forests may become good OGMA candidates and as such periodic assessment or revision to the OGMAs may occur.

6.5 Mitigation of Timber Supply Impacts

During delineation of OGMAs for priority biodiversity provisions, an attempt was made to mitigate short and long-term impacts on timber supply. For example, OGMAs were delineated first in the non-contributing forest land base, however, since representation is at the subzone/variant level, the non-contributing land base could not always satisfy old forest requirements. Where this occurred, portions of the timber harvesting land base from most constrained to least constrained were assessed and included as OGMAs. Occasionally, a younger aged forest stand from the non-contributing land base was used for OGMA, particularly where patch size of an existing OGMA could be increased. Generally, more THLB was required in lower elevation BEC units due to a longer disturbance history and lower amounts of non-contributing forest land.

OGMAs were not established in forest stands that were in approved Category A blocks in Forest Stewardship Plans (FSP) unless agreed to by the licensee. This follows the direction outlined in the *Landscape Unit Planning Guide*.

7. Landscape Unit Plan Objectives

Landscape Unit Objectives will be legally established within the framework of FRPA and as such will become Higher Level Plan objectives. Other Operational Plans must be consistent with these objectives.

Appendix I: OGMA Summary and Rationale

OGMA Number	OGMA BEC	Total Area (ha)	Comments
1	CWHxm2	29.0	Old forest representation, shoreline, May Lake
2	CWHdm	15.4	Old forest representation, Homfray Channel shoreline, East Redonda Ecological Reserve
3	CWHxm2	4.5	Recruitment
4	CWHmm1	34.9	Old forest representation
4	CWHxm2	17.6	
6	CWHdm	7.9	Old forest representation, adjacent to Pryce Channel
6	CWHvm1	21.8	
6	CWHvm2	8.8	
7	CWHxm2	20.0	Old forest representation, shoreline, Caroline Lake
8	CWHdm	19.5	Old forest representation, Pendrell Sound shoreline, East Redonda Ecological Reserve
11	CWHdm	0.3	Recruitment, adjacent to Pryce Channel
11	CWHvm1	7.1	
11	CWHvm2	11.2	
13	CWHdm	10.6	Old forest representation, Waddington Channel shoreline
14	CWHdm	23.0	Recruitment, East Redonda Ecological Reserve
14	CWHvm1	1.3	
15	CWHdm	2.6	Old forest representation, adjacent to Pryce Channel
15	CWHvm1	17.8	
15	CWHvm2	12.9	
16	CWHvm1	4.9	Old forest representation
17	CWHdm	11.1	Old forest representation
17	CWHvm1	20.4	
17	CWHvm2	12.9	
18	CWHdm	24.0	Old forest representation, adjacent to Pryce Channel
18	CWHvm1	64.2	
18	CWHvm2	33.5	
19	CWHdm	14.5	Old forest representation, Pryce Channel shoreline
20	CWHdm	49.7	Old forest representation, recruitment, shoreline Waddington Channel
21	CWHdm	8.3	Old forest representation, shoreline, Calm Channel
21	CWHvm1	1.7	
22	CWHdm	18.1	Old forest representation, East Redonda Ecological Reserve
22	CWHvm1	12.1	
23	CWHxm2	64.6	Old forest representation, recruitment, shoreline, White Rock Passage
24	CWHdm	25.0	Old forest representation, shoreline, Deer Passage
26	CWHdm	21.5	Adjacent to Pryce Channel
27	CWHdm	42.5	Old forest representation
28	CWHdm	22.2	Old forest representation, adjacent to Walsh Cove Park
29	CWHdm	3.0	Old forest representation, East Redonda Ecological Reserve
29	CWHvm1	12.3	
32	CWHdm	3.8	Old forest representation, adjacent to Waddington Channel
32	CWHvm1	3.5	
33	CWHdm	8.3	Old forest representation
33	CWHvm1	15.3	

OGMA Number	OGMA BEC	Total Area (ha)	Comments
33	CWHvm2	28.7	
33	MHmm1	14.4	
34	CWHxm2	36.5	Old forest representation, recruitment, Elephant Mountain
36	CWHdm	13.9	Recruitment, Walsh Cove Park
38	CWHdm	5.9	Old forest representation, East Redonda Ecological Reserve
41	CWHvm1	6.5	Old forest representation, East Redonda Ecological Reserve
42	CWHdm	19.6	Recruitment, Adjacent to Walsh Cove Park
44	CWHdm	34.8	Old forest representation, Waddington Channel shoreline
44	CWHvm1	8.1	
46	CWHvm1	12.8	Old forest representation, East Redonda Ecological Reserve
46	CWHvm2	3.5	
47	CWHxm2	36.9	Recruitment, shoreline, White Rock Passage
48	CWHdm	35.0	Old forest representation, recruitment, East Redonda Ecological Reserve
48	CWHvm1	53.4	
48	CWHvm2	61.8	
48	MHmm1	34.7	
51	CWHxm2	42.7	Old forest representation, Drew Passage shoreline
55	CWHdm	14.0	Recruitment
57	CWHxm2	4.7	Old forest representation
58	CWHxm2	56.6	Old forest representation
61	CWHvm1	25.9	Old forest representation, Cloud Lake shoreline
62	CWHvm1	19.8	Old forest representation
64	CWHdm	4.5	Old forest representation
65	CWHdm	3.2	Old forest representation
65	CWHvm1	29.3	
66	CWHdm	6.3	Old forest representation, recruitment
66	CWHvm1	5.1	
67	CWHdm	10.4	Old forest representation
68	CWHvm1	2.8	Old forest representation, East Redonda Ecological Reserve
68	CWHvm2	9.3	
68	MHmm1	2.8	
70	CWHvm2	8.6	Old forest representation, East Redonda Ecological Reserve
71	CWHdm	164.2	Old forest representation, East Redonda Ecological Reserve
71	CWHvm1	73.0	
71	CWHvm2	80.5	
71	MHmm1	75.1	
72	CWHdm	38.6	Old forest representation, adjacent to Waddington Channel
73	CWHdm	30.5	Old forest representation
75	CWHdm	3.0	Old forest representation, recruitment
75	CWHvm1	18.8	
79	CWHdm	2.9	Old forest representation
81	CWHdm	15.7	Old forest representation
83	CWHdm	21.2	Old forest representation
84	CWHdm	4.7	Old forest representation, East Redonda Ecological Reserve
84	CWHvm1	88.6	
84	CWHvm2	89.9	
84	MHmm1	53.8	

OGMA Number	OGMA BEC	Total Area (ha)	Comments
86	CWHdm	63.2	Old forest representation, recruitment, Lewis Channel shoreline
89	CWHdm	104.4	Old forest representation, Lewis Channel shoreline
90	CWHdm	3.0	recruitment
91	CWHxm2	7.0	Old forest representation
92	CWHxm2	5.8	Old forest representation, shoreline, Evans Bay
93	CWHvm1	8.4	Old forest representation, lakeshore
94	CWHdm	4.8	Old forest representation
96	CWHvm1	11.9	Old forest representation
97	MHmm1	28.1	Old forest representation, East Redonda Ecological Reserve
98	CWHdm	18.3	Old forest representation
99	CWHdm	28.9	Old forest representation, recruitment, Teakerne Arm park, Cassel Lake shoreline
100	CWHvm1	29.1	Old forest representation
101	CWHdm	26.0	Old forest representation, East Redonda Ecological Reserve
101	CWHvm1	14.8	
101	CWHvm2	0.6	
102	CWHvm1	5.4	Old forest representation, East Redonda Ecological Reserve
104	CWHdm	4.2	Old forest representation, Teakerne Arm park
105	CWHdm	51.3	Old forest representation, recruitment, Robertson Lake shoreline, Hathayim Marine Park
106	CWHdm	20.8	Old forest representation
107	CWHdm	17.8	Old forest representation, lakeshore
108	CWHdm	13.5	Old forest representation, Teakerne Arm park, shoreline
111	CWHdm	84.8	Old forest representation, East Redonda Ecological Reserve, Homfray Channel shoreline
112	CWHxm2	4.7	Old forest representation, shoreline, Evans Bay
113	CWHdm	0.2	Old forest representation, East Redonda Ecological Reserve
113	CWHvm1	9.7	
113	CWHvm2	7.6	
115	CWHdm	28.9	Old forest representation, East Redonda Ecological Reserve
115	CWHvm1	31.3	
115	CWHvm2	1.6	
117	CWHxm2	6.1	Old forest representation, shoreline, Evans Bay
118	CWHvm1	9.0	Old forest representation
119	CWHdm	15.0	Old forest representation, Hathayim Marine Park
121	CWHxm1	10.4	Old forest representation, shoreline Von Donop Inlet, Hathayim Marine Park
122	CWHdm	3.2	Recruitment, Willey Lake shoreline, Hathayim Marine Park
122	CWHxm1	5.3	
123	CWHxm1	12.4	Old forest representation, Sutil Channel shoreline
124	CWHdm	61.1	Old forest representation
125	CWHdm	9.3	Old forest representation, Von Donop Inlet, Hathayim Marine Park shoreline
125	CWHxm1	14.3	
126	CWHxm1	30.3	Old forest representation, Von Donop Inlet, Hathayim Marine Park shoreline
128	CWHdm	135.7	Old forest representation, recruitment, Black Lake shore line, Roscoe Bay park
129	CWHxm1	33.7	Recruitment, Von Donop Inlet, Hathayim Marine Park shoreline
130	CWHxm1	20.7	Old forest representation
131	CWHxm1	13.5	Old forest representation, recruitment, Sutil Channel shoreline
132	CWHxm2	12.3	Old forest representation, Read Island Park
133	CWHxm2	37.5	Old forest representation, recruitment, Read Island Park, shoreline Hoskyn Channel
134	CWHdm	12.7	Old forest representation, Thompson Lake shoreline

OGMA Number	OGMA BEC	Total Area (ha)	Comments
135	CWHdm	16.2	Old forest representation, Black Lake shoreline, Roscoe Bay Park
137	CWHdm	2.0	Recruitment, Lewis Channel shoreline
137	CWHxm1	8.8	
138	CWHxm1	33.5	Old forest representation, Carrington Bay shoreline
139	CWHxm1	9.9	Old forest representation, Hathayim Marine Park shoreline
140	CHWxm2	5.7	Old forest representation, Rosen Lake shoreline, Read Island Park
141	CWHxm1	6.9	Old forest representation
143	CWHxm1	18.8	Old forest representation
145	CWHxm1	3.7	Old forest representation, Read Island Park
146	CWHxm1	12.4	Old forest representation, Sutil Channel, Read Island Park
147	CWHxm1	16.7	Old forest representation, Squirrel Cove shoreline
148	CWHxm1	16.1	Old forest representation
150	CWHxm1	15.4	Old forest representation, Carrington Bay shoreline
151	CWHxm1	70.1	Old forest representation, shoreline, Hoskyn Channel, Read Island Park
153	CWHxm1	12.6	Old forest representation, Desolation Sound shoreline
155	CWHxm1	8.3	Old forest representation, Carrington Lagoon shoreline
157	CWHxm1	7.4	Old forest representation, Lewis Channel shoreline
160	CWHxm1	10.1	Old forest representation, shoreline , Desolation Sound
162	CWHxm1	29.1	Recruitment, Martin Island
163	CWHxm1	65.1	Old forest representation
166	CWHxm1	18.9	Old forest representation
167	CWHxm1	25.5	Old forest representation
168	CWHxm1	19.5	Old forest representation, shoreline, Hague and Gunflint Lakes
170	CWHxm1	19.9	Recruitment
176	CWHxm1	4.4	Old forest representation, adjacent to Refuge Lagoon
177	CWHxm2	11.9	Old forest representation
178	MHmm1	6.5	Old forest representation, East Redonda Ecological Reserve
179	CWHvm1	8.6	Old forest representation
180	CWHdm	10.9	Old forest representation, Lewis channel shoreline
181	CWHxm1	3.7	Recruitment, Lewis Channel shoreline
182	CWHxm1	13.6	Recruitment, shoreline, Desolation Sound
183	CWHxm2	13.1	Recruitment, Evans Bay shoreline
186	CWHdm	4.7	Old forest representation, Desolation Sound shoreline
186	CWHxm1	9.1	
187	CWHdm	14.5	Old forest representation, Teakerne Arm shoreline
188	CWHdm	18.4	Old forest representation
188	CWHvm1	10.5	
189	CWHxm2	114.3	Recruitment, Surge Narrows Park, shoreline
190	CWHxm2	112.4	Recruitment, small island, Rendezvous Island South Park
192	CWHvm1	18.5	Old forest representation
193	CWHmm1	5.5	Old forest representation
193	CWHxm2	0.1	
194	CWHvm1	4.4	Recruitment
195	CWHdm	3.5	Old forest representation, recruitment

Appendix II: List of Acronyms

AAC	Allowable Annual Cut
BEC	Biogeoclimatic Ecosystem Classification
BEO	Biodiversity Emphasis Option
CFLB	Crown Forest Land Base
FIA	Forest Investment Account
FPC	Forest Practices Code of British Columbia Act
FRPA	Forest and Range Practices Act
ILMB	Integrated Land Management Bureau
LU	Landscape Unit
LUPG	Landscape Unit Planning Guide
MAL	Ministry of Agriculture and Lands
MEM	Ministry of Energy and Mines
MFLNRO	Ministry of Forests, Lands, and Natural Resource Operations
MOE	Ministry of Environment
MFR	Ministry of Forests and Range
NC	Non-Contributing
NDT	Natural Disturbance Type, see Biodiversity Guidebook
OGMA	Old Growth Management Area
THLB	Timber Harvesting Land Base
WTP	Wildlife Tree Patch
WTR	Wildlife Tree Retention

Appendix III Consultation Summary

A notification letter was sent to all First Nations with traditional territory within the Cortes Landscape Unit on October 9, 2009 to inform that the project was being initiated.

Advertising was placed in the following publications: BC Gazette (July 7, 2011), Campbell River Mirror (July 8, 2011), Powell River Peak (July 6, 2011), Sunshine Coast Reporter (July 8, 2011).

The public and First Nations consultation period was set for July 15, 2011 to September 15, 2011.

No comments were received from First Nations on the proposed OGMAs and legal order during the concurrent 60 day public review and comment and First Nation consultation period.

No objections or comments requiring revisions to the plan were received from the public.

Appendix E

Old-Growth Management Areas Order

Preamble

This order establishes objectives for Old Growth Management Areas within five Landscape Units located in the Sunshine Coast District.

The goal of these objectives is to contribute to biological diversity at the landscape level.

This preamble is intended to provide context and background; it does not, however, form part of the order.

PROVINCE OF BRITISH COLUMBIA

Ministry of Forests, Lands and Natural Resource Operations

Ministerial Order

Land Use Objectives for Old Growth Management Areas (OGMAs) within the Bute West, Bute East, Cortes, Brittain, and Howe Landscape Units (LUs) situated within the Sunshine Coast District.

Part 1 - Interpretation

1. Pursuant to Section 93.4 of the *Land Act*, the following objectives are established as land use objectives for the purposes of the *Forest and Range Practices Act* and apply to OGMAs within the Bute West, Bute East, Cortes, Brittain, and Howe LUs, as shown in the maps set out in Schedule A and contained in the OGMA spatial layer stored in the Geographic Warehouse
(WHSE_LAND_USE_PLANNING.RMP_OGMA_LEGAL_CURRENT_SVW)
2. If there is a discrepancy between the areas shown in the maps set out in the attached Schedule A and the OGMA spatial layer stored in the Geographic Warehouse
(WHSE_LAND_USE_PLANNING.RMP_OGMA_LEGAL_CURRENT_SVW), the areas as detailed in the OGMA spatial layer will take precedent.
3. Nothing in, under or arising out of this order either abrogates or derogates from any aboriginal rights, aboriginal title or treaty rights of any applicable First Nation, nor relieves the Province of any obligation to consult with any applicable First Nation.

Part 2 - Objectives

4. Objectives for Old Growth Management Areas

- (1) Retain forests in OGMA to the amounts set out in Table A as shown in the maps set out in Schedule A and as contained in the OGMA spatial layer stored in the Geographic Warehouse, except where necessary for the following:
 - a) Topping or pruning of trees along boundaries necessary to improve wind firmness.
 - b) Sanitation to prevent the spread of insect infestations or diseases that pose significant threat to forested areas.
 - c) Removal of danger trees, or brushing and clearing on existing roads under active tenure within the right-of-way necessary for safety purposes.
 - d) Recreation trail and site maintenance or development to address public safety.
 - e) Felling trees for guyline clearance or tailholds. Any trees felled for tailhold or guyline purposes are to be left on site to function as coarse woody debris, unless the felled trees poses a significant risk to forest health.
- (2) In addition to 4(1) (a) to (e), harvesting within any OGMA is permitted, provided that the following apply:
 - (a) Harvesting is required to provide for:
 - i. a logical harvesting boundary, or
 - ii. road or bridge construction to access resource values beyond or adjacent to the OGMA and no other practicable option for road or bridge location exists;
 - (b) The area harvested does not exceed the greater of:
 - i. two hectares, or
 - ii. 5 % of the area of the OGMA; and
 - (c) The integrity of the OGMA is maintained.
- (3) Replacement forest is required if the total area of an OGMA that is subject to the activities pursuant to 4(1) and 4(2) exceeds 0.5 ha. Replacement forest must be of an equivalent or greater area of forest, with equivalent or greater attributes, in order of priority:
 - (a) Contiguous to the OGMA in the same BEC subzone or variant; or,
 - (b) Contiguous to another OGMA in the same BEC subzone or variant.
- (4) Digital spatial data that show the area harvested and the area replacing the area harvested made in accordance with 4(3) must be documented and submitted to the delegated decision maker at the end of each calendar year.

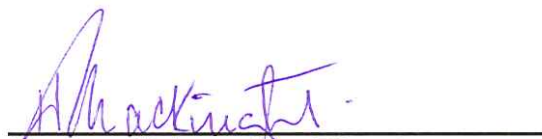
Table A. Minimum requirement of BEC Variant to be retained by Landscape Unit

Landscape Unit	BEC Variant	Minimum requirement of BEC Variant to be retained as OGMA (%)
Brittain	CWHdm	9
	CWHvm1	13
	CWHvm2	13
	MHmm1	19
	MHmm2	19
Bute East	CWHdm	9
	CWHds1	9
	CWHms1	9
	CWHvm1	13
	CWHvm2	13
	MHmm1	19
	MHmm2	19
Bute West	CWHdm	9
	CWHds1	9
	CWHms1	9
	CWHvm1	13
	CWHvm2	13
	MHmm1	19
	MHmm2	19
Cortes	CWHdm	9
	CWHmm1	9
	CWHvm1	13
	CWHvm2	13
	CWHxm1	9
	CWHxm2	9
	MHmm1	19
Howe	CWHdm	9
	CWHvm1	13
	CWHvm2	13
	CWHxm1	9
	MHmm1	19

Part 3 - Effective Date and Transition

5. Application of this order

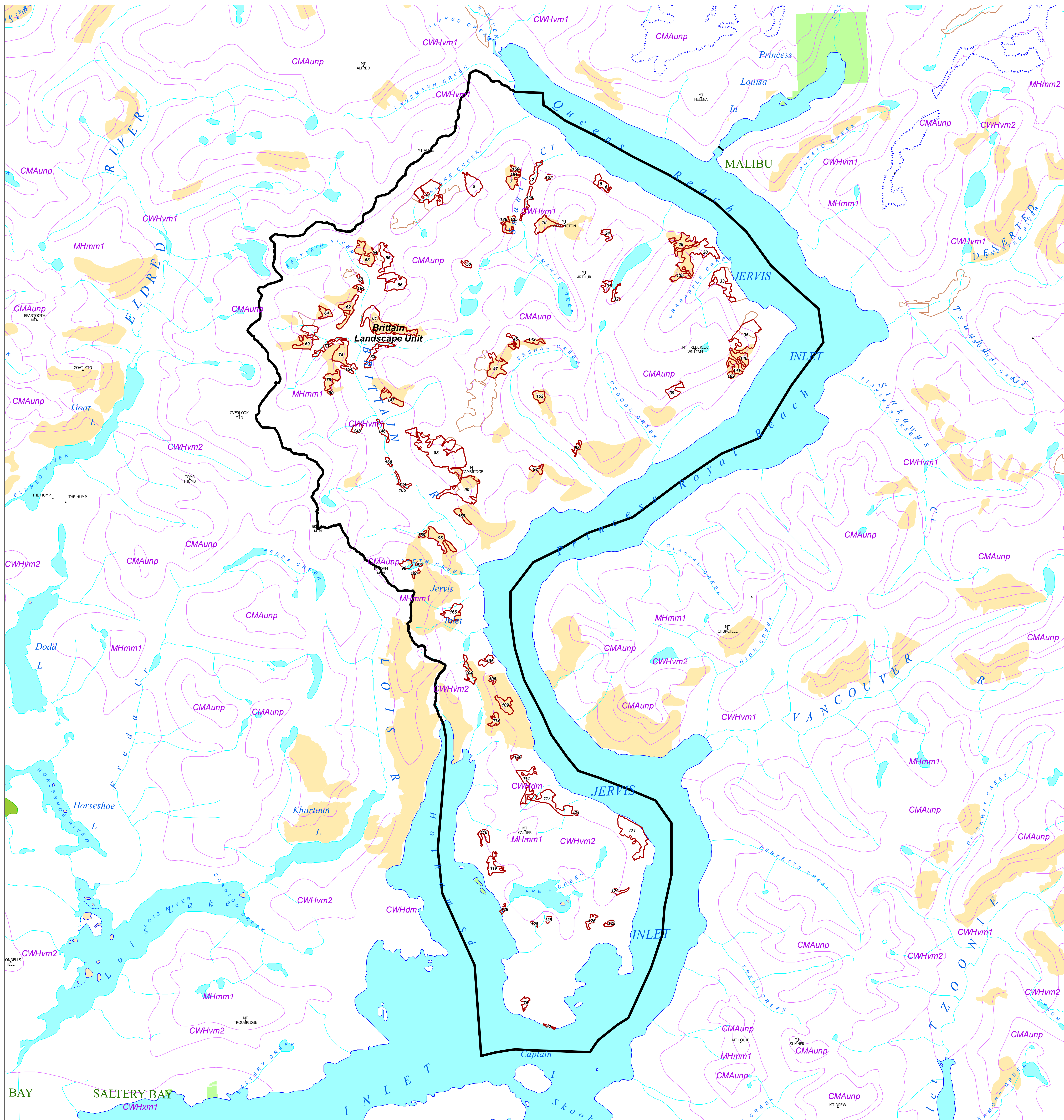
This order and the land use objectives in this order take effect on the date that notice of this order is published in the Gazette.



Regional Executive Director
 Ministry of Forests, Lands and
 Natural Resource Operations, South Coast Region

July 10, 2012
Date

OGMAs in Britain Landscape Unit



Data Sources and Notes

Layer Name (Source):

Scale: 1:60,000

Produced for:
South Coast Region

Produced by:

 BRITISH COLUMBIA
 Ministry of Forests, Lands and Natural Resource Operations

File Name: May 17, 2012
 Projection: Datum: Albers NAD83
 Date: May 17, 2012
 Prepared by: LG

Legend

OGMAs	Wildlife Habitat Areas - Approved
Biogeoclimatic Zones	Grizzly Bear Winter Range
Landscape Unit Area	Ungulate Winter Range - Approved
Ferry Route	Goat Winter Range
Road	Ocean or Lake
River or Stream	Parks and Protected Areas

Key Map

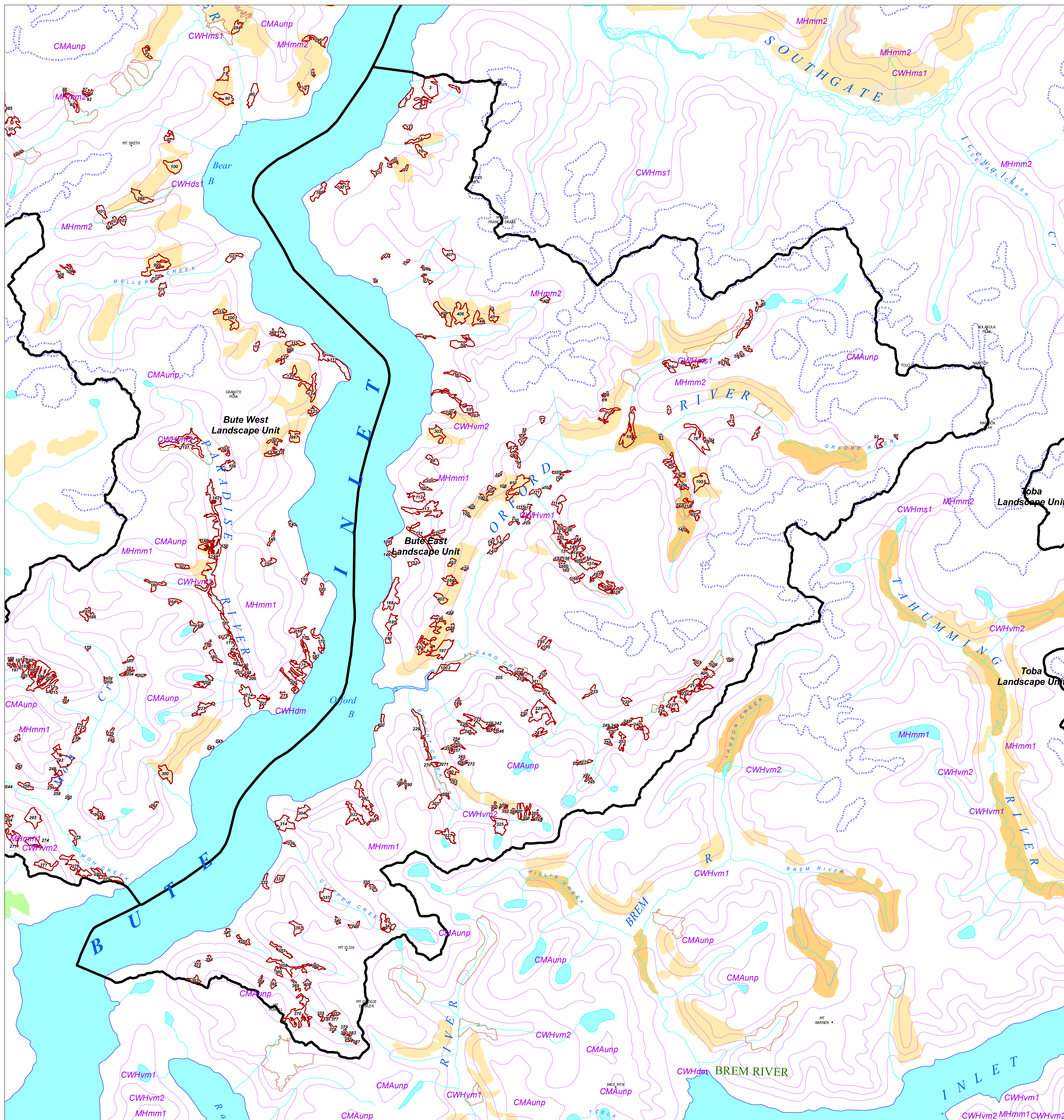
APPROVED

Heather MacKnight
Regional Executive Director
South Coast Region

July 10, 2012

Date:

OGMAs in Bute East Landscape Unit



Data Sources and Notes

Layer Name (Source):

Scale: 1:60,000

Produced for:
South Coast Region

Produced by:
BRITISH COLUMBIA
Ministry of Forests, Lands and Natural Resource Operations

File Name: May 17, 2012
Projection: Datum: Albers NAD83
Date: May 17, 2012
Prepared by: L.G.

Legend

- OGMa
- Biogeoclimatic Zones
- Landscape Unit Area
- Ferry Route
- Road
- River or Stream
- Wildlife Habitat Areas - Approved
- Grizzly Bear Winter Range
- Ungulate Winter Range - Approved
- Goat Winter Range
- Ocean or Lake
- Parks and Protected Areas

Key Map

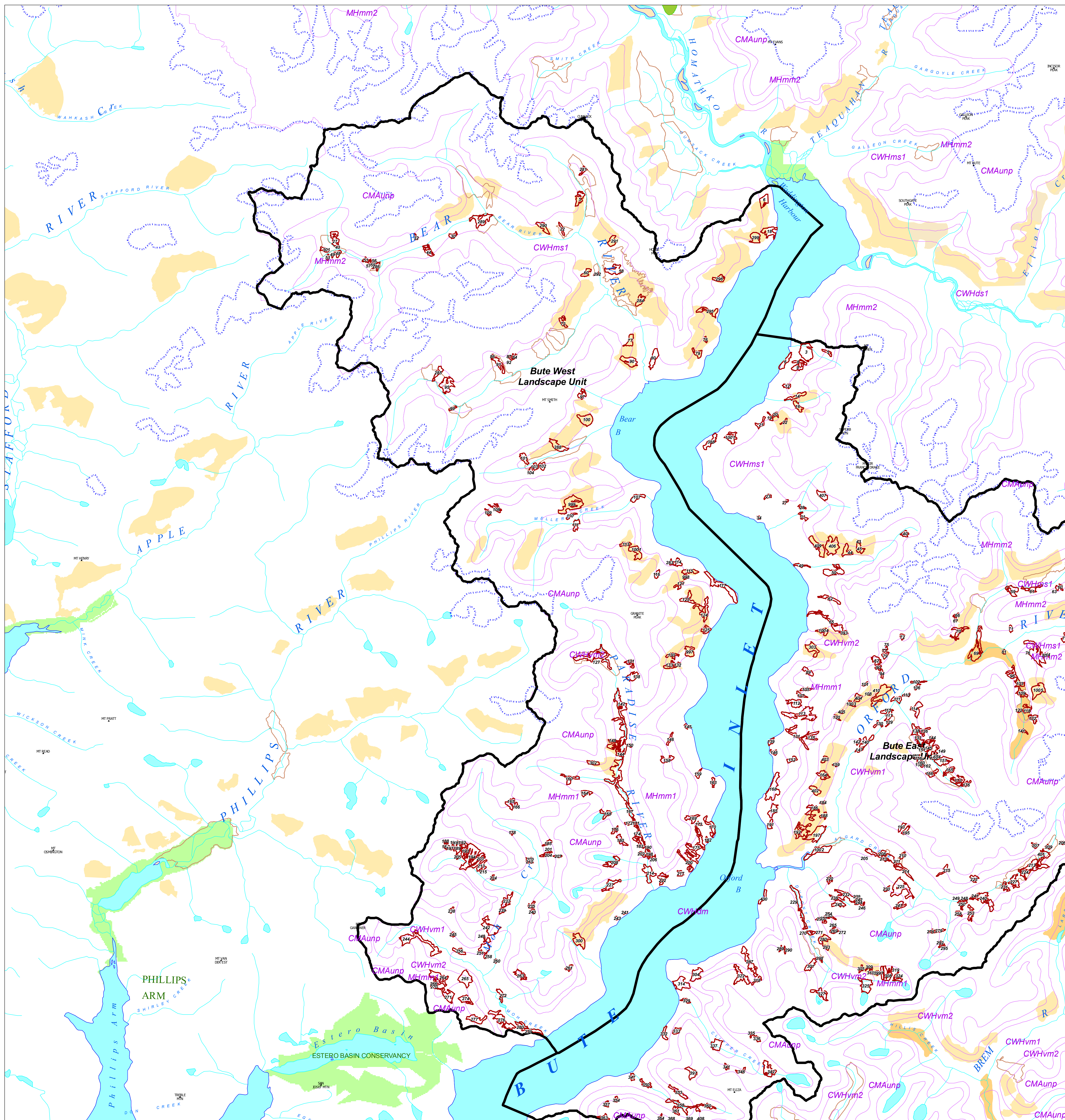
APPROVED

Heather MacKnight
Regional Executive Director
South Coast Region

July 10, 2012

Date:

OGMAs in Bute West Landscape Unit



Data Sources and Notes

Layer Name (Source):

Scale: 1:70,000

Produced for:
South Coast Region

Produced by:
BRITISH COLUMBIA
Ministry of Forests, Lands and Natural Resource Operations

File Name: May 17, 2012
Project/Datum: Albers NAD83
Date: May 17, 2012
Prepared by: L.G.

Legend

- OGMAs
- Biogeoclimatic Zones
- Landscape Unit Area
- Ferry Route
- Road
- River or Stream
- Wildlife Habitat Areas - Approved
- Grizzly Bear Winter Range
- Ungulate Winter Range - Approved
- Goat Winter Range
- Ocean or Lake
- Parks and Protected Areas

Key Map

APPROVED

Heather MacKnight
Regional Executive Director
South Coast Region

July 10, 2012

Date:

OGMAs in Cortes Landscape Unit



Data Sources and Notes

Layer Name (Source):

Scale: 1:60,000

Produced for:
South Coast Region

Produced by:
BRITISH COLUMBIA
Ministry of Forests, Lands and Natural Resource Operations

File Name: May 17, 2012
Project/Datum: Albers NAD83
Date: May 17, 2012
Prepared by: LG

Legend

OGMAs	Wildlife Habitat Areas - Approved
Biogeoclimatic Zones	Grizzly Bear Winter Range
Landscape Unit Area	Ungulate Winter Range - Approved
Ferry Route	Goat Winter Range
Road	Ocean or Lake
River or Stream	Parks and Protected Areas

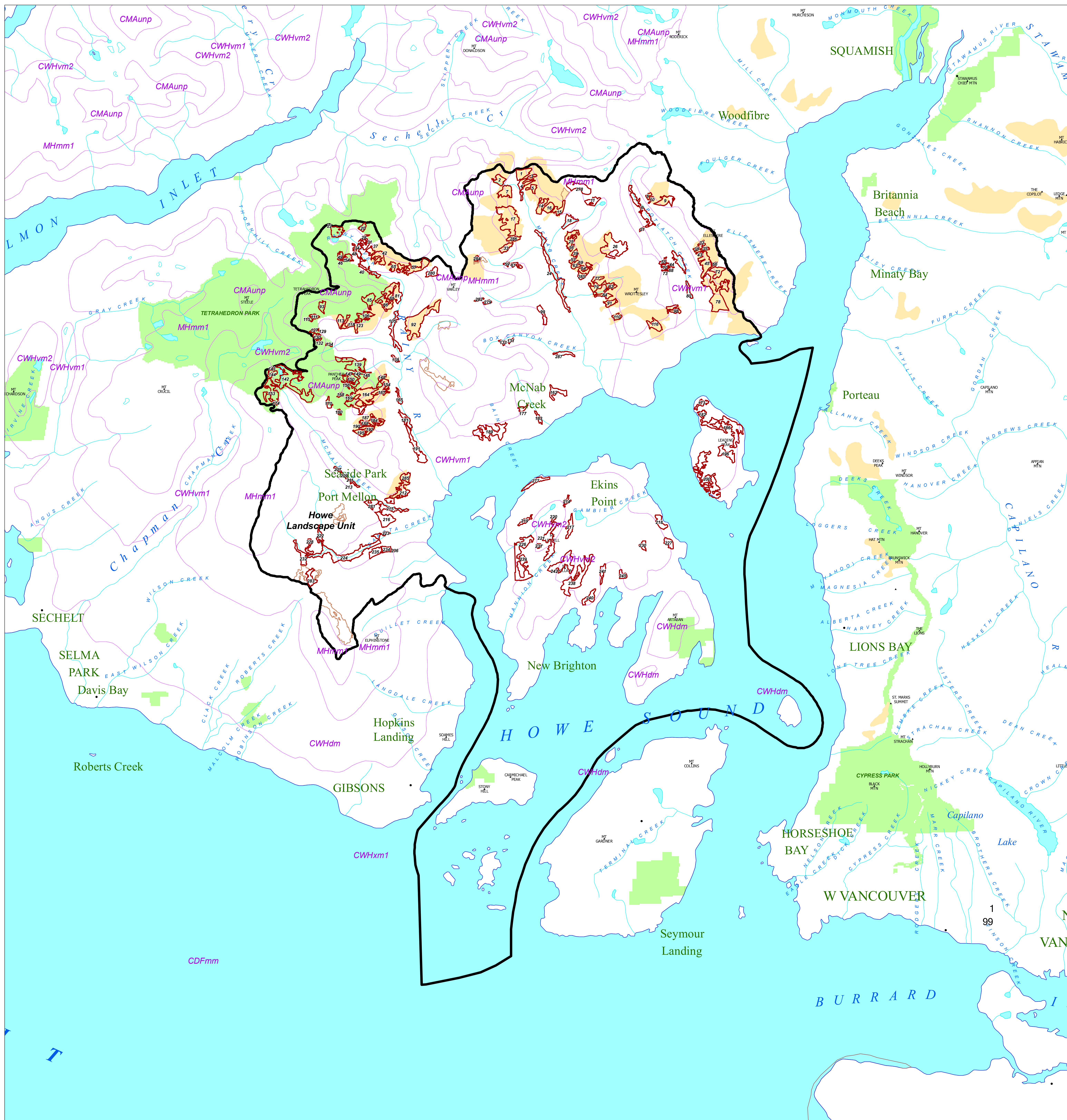
Key Map

APPROVED

Heather MacKnight
Regional Executive Director
South Coast Region

July 10, 2012
Date:

OGMAs in Howe Landscape Unit



Data Sources and Notes

Layer Name (Source):

Scale: 1:60,000

Produced for:
South Coast Region

Produced by:
BRITISH COLUMBIA
Ministry of Forests, Lands and Natural Resource Operations

File Name: May 17, 2012
Projection: Datum: Albers NAD83
Date: May 17, 2012
Prepared by: L.G.

Legend

- OGMAs
- Biogeoclimatic Zones
- Landscape Unit Area
- Ferry Route
- Road
- River or Stream
- Wildlife Habitat Areas - Approved
- Grizzly Bear Winter Range
- Ungulate Winter Range - Approved
- Goat Winter Range
- Ocean or Lake
- Parks and Protected Areas

Key Map

APPROVED

Heather MacKnight
Regional Executive Director
South Coast Region

July 10, 2012

Date:

Appendix F

Wildlife Notices and Orders



**NOTICE – INDICATORS OF THE AMOUNT, DISTRIBUTION AND ATTRIBUTES OF
WILDLIFE HABITAT REQUIRED FOR THE SURVIVAL OF SPECIES AT RISK IN
THE SUNSHINE COAST FOREST DISTRICT**

This Notice is given under the authority of section 7(2) of the *Forest Planning and Practices Regulation* (B.C. Reg. 14/04) and 9(3) of the *Woodlot Licence Planning and Practices Regulation* (B.C. Reg. 21/04).

The following Notice includes indicators of the amount, distribution and attributes of wildlife habitat required for the survival of the species at risk outlined in Schedule 1.

Approved Wildlife Habitat Areas are not included in the indicators of amount, distribution and attributes for each of the species outlined in Schedule 1. As per section 7(3) of the *Forest Planning and Practices Regulation*, forest tenure holders are exempt from the obligation to specify a result or strategy in relation to the objective set out in section 7(1) of the *Forest Planning and Practices Regulation*, for approved Wildlife Habitat Areas.

This Notice applies to the Sunshine Coast Forest District.

Schedule 1

1) Marbled Murrelet (*Brachyramphus marmoratus*)

Amount:

1. An amount equal to the total amount of currently suitable nesting habitat in the non-contributing landbase. Government policy for determining the amount of suitable nesting habitat is provided in the species account for Marbled Murrelet in the *Accounts and Measures for Managing Identified Wildlife* (Identified Wildlife Management Strategy Version 2004);
2. An amount of suitable Marbled Murrelet nesting habitat within Old Growth Management Areas consistent with the direction from landscape unit planning; and
3. An amount of suitable nesting habitat to a maximum net mature timber harvesting landbase impact of 495 ha.

Distribution:

1. The amount of habitat referenced above must be distributed to provide:
 - areas of suitable nesting habitat of the size and spatial distribution identified in the species account for Marbled Murrelet in the *Accounts and Measures for Managing Identified Wildlife* (Identified Wildlife Management Strategy Version 2004).

- The areas described above are located within the biogeoclimatic units and preferred elevations identified in the species account for Marbled Murrelet in the *Accounts and Measures for Managing Identified Wildlife* in the Identified Wildlife Management Strategy Version 2004.

Attributes:

**Species:
Marbled
murrelet**

Attribute	Characteristics
Size	Maintain a balanced range of patch sizes including a mix of large (>200 ha), medium (50-200 ha) and small (<50 ha) patches within managed forests. The area should include vertical canopy complexity,
Tree Features	Large branches or branches with deformities, and presence of mossy platforms
Tree Species	It is unlikely that Marbled murrelets select particular tree species, however certain species are more likely to provide large horizontal platforms suitable for nesting. This includes yellow cedar, western hemlock, Sitka spruce, Douglas-fir and western red cedar. Less likely species include mountain hemlock and amabilis fir.
Nesting Habitat Features	Suitable nesting habitat includes old seral stage coniferous forests, providing large trees with platforms (limbs or deformities >15cm diameter) with variable canopy structure and small gaps in the canopy. Readily nest on steep slopes but is not essential if forest canopies are non-uniform.
Tree Size	Most nesting trees in BC are >200 yr. Nest trees are typically >40 m tall and nest heights are typically >30 m. Nest limbs range in size from 15-74 cm diameter.
Structural Stage	7: old forest (>250 yr - age class 9, but 8 is acceptable if older forest is not present and the age class 8 provides platform limbs and other nest attributes).
Additional information	Table 3 of the IWMS Version 2004 species account for Marbled Murrelet provides detailed information about the habitat features that are associated with most likely, moderately likely and least likely habitat within each of the Marbled Murrelet Conservation regions.

2) Grizzly Bear (*Ursus arctos*)

Amount:

- 4953 ha, not exceeding an impact to the mature timber harvesting landbase of 320 ha.

Distribution:

- The amount of habitat referenced above must be distributed in the Sunshine Timber Supply Area to provide:
 - areas of suitable foraging and security habitat of the size and spatial distribution identified in the species account for Grizzly Bear in the *Accounts and Measures for Managing Identified Wildlife* (Identified Wildlife Management Strategy Version 2004).

- The areas described above are located within the biogeoclimatic units and preferred elevations identified in the species account for Grizzly Bear in the *Accounts and Measures for Managing Identified Wildlife* (Identified Wildlife Management Strategy Version 2004).

Attributes:

**Species:
Grizzly Bear**

Attribute	Characteristics
Size	1-500 ha, depending on the area of use, extent of seasonal habitat and buffer size required.
Critical patch habitats	Critical patch habitats include beaches and beach margins, estuaries, rich non-forested fens, the edges of forested and non-forested bogs, herb-dominated patches on avalanche chutes with adjacent forest (particularly south-facing ones), herb-dominated subalpine parkland meadows, skunk cabbage swamps, floodplain ecosystems, and areas where bears fish for spawning salmon. Den cavities and surrounding stands are also considered critical. Non-forested critical habitats include a core area and buffer of forested cover. Forested critical habitats are not buffered.
Denning Habitat Features	Hibernating habitats tend to be high elevation areas that are sloped with dry, stable soil conditions that remain frozen throughout the winter. Dens are typically located on steep north-facing slopes, areas where vegetation will stabilize the den roof and where snow will accumulate for insulation. Dens are rarely re-used but Grizzly bears will often return to the same vicinity to dig new dens.
Foraging Habitat Features	Habitat selection is strongly influenced by meeting nutritional requirements, access to mates, thermal cover (i.e., dens), social interactions and the presence and activities of people. Habitat requirements vary greatly as some bears are more transient while others are more resident. Both residents and transients select patches or complexes of habitats within landscapes.
Structural Stage	Generally, foraging is more abundant in non-forested sites, sites with partial forest or sites with many tree gaps in older forest. Closed forest sites near quality habitat may be used for security and day bedding areas. Many or all structural stages can be used seasonally or for specific needs and as such, forage type is not necessarily tied to one particular structural stage.
Elevation	All elevations from sea level estuaries to high alpine meadows and talus slopes.

3) Vananda Creek Sticklebacks (*Gasterosteus* species 16 and 17)

Amount:

- 678 ha, not exceeding an impact to the mature timber harvesting landbase of 237 ha.

Distribution:

- The amount of habitat referenced above must be distributed to provide:
 - areas of suitable habitat of the size and spatial distribution identified in the species account for Vananda Creek Sticklebacks in the *Accounts and Measures for*

Managing Identified Wildlife (Identified Wildlife Management Strategy Version 2004).

- The areas described above are located within the biogeoclimatic units and preferred elevations identified in the species account for Vananda Creek Sticklebacks in the *Accounts and Measures for Managing Identified Wildlife* in the Identified Wildlife Management Strategy Version 2004.

Attributes:

**Species:
Vananda Creek
Sticklebacks**

Attribute	Characteristics
This description is specific to Priest, Spectacle and Emily Lakes on Texada Island.	
Size	The area should include a core area and a management zone. The size of the core area may be between 30-90m and include both sides of the stream. The size may vary depending on the risk of sedimentation derived from erosion events on land within the watershed to the lakes. The management zone should include crown forest lands that drain into the lakes up to the height of the land.
Foraging Habitat Features	Limnetic species feed in the open water, limnetic portions of the lake near the surface. Benthic species feed along the shallow margins of the lake.
Breeding Habitat Features	Both species move from the open or deep water portions of the lake to the more shallow, vegetated littoral zones where males construct nests and breeding occurs. Limnetic males build nests on gravel or rock substrates, on submerged logs and at water depths no more than 1 m. Bethic males choose sites with aquatic vegetation in slightly deeper waters but rarely more than 2 m deep.
Elevation	Of the 3 known locations (Emily, Priest and Spectacle Lakes), the surface elevation of one site is ~40 m while the surface elevation of the other two sites are ~80 m.

4) “Queen Charlotte” Goshawk (*Accipiter gentilis laingi*)

Amount:

- 1000 ha not exceeding an impact to the mature timber harvesting landbase of 213 ha.

Distribution:

- The amount of habitat referenced above must be distributed to provide:
 - areas of suitable habitat of the size, spatial distribution and connectivity identified in the species account for “Queen Charlotte” Goshawk in the *Accounts and Measures for Managing Identified Wildlife* (Identified Wildlife Management Strategy Version 2004).
 - areas of suitable breeding habitat to minimize overlap between goshawk home ranges (approximately 5-8 km separation).
- The areas described above are located within the biogeoclimatic units and preferred elevations identified in the species account for “Queen Charlotte” Goshawk in the

Accounts and Measures for Managing Identified Wildlife (Identified Wildlife Management Strategy Version 2004).

Attributes:

**Species: Queen
Charlotte
Goshawk**

Attribute	Characteristics
Nesting and PFA Area	Approximately 200 ha in size.
Stand Features (Nesting and PFA)	Structural stage 5-7 (>45yrs), multi-layered canopies, structurally diverse, canopy closure (greater than 50%), large diameter trees (for the locale), snags and coarse woody debris (CWD), typically not along forest/non-forest edges. Not near urban areas and generally on the lower 2/3 of slopes where slope gradient is <40%.
Tree Species (Nesting and PFA)	Western hemlock, Douglas fir, Sitka spruce, Western red cedar, amabilis fir and red alder.
Structural Stage	5 (young forest - is used but is generally not preferred), 6 (mature forest) and 7 (old forest).
Elevation (Nesting and PFA)	Areas managed for nesting must generally be below 900 m.

5) Coastal Tailed Frog (*Ascaphus truei*)

Amount:

1. 30 ha not exceeding an impact to the mature timber harvesting landbase of 20 ha.

Distribution:

1. The amount of habitat referenced above must be distributed to provide:
 - areas of suitable habitat of the size and spatial distribution identified in the species account for Coastal Tailed Frog in the *Accounts and Measures for Managing Identified Wildlife (Identified Wildlife Management Strategy Version 2004)*.
2. The areas described above are located within the biogeoclimatic units and preferred elevations identified in the species account for Coastal Tailed Frog in the *Accounts and Measures for Managing Identified Wildlife (Identified Wildlife Management Strategy Version 2004)*.

Attributes:

**Species:
Coastal Tailed
Frog**

Attribute	Characteristics
Size	Approximately 20 ha (depending on number and length of suitable stream reaches). Larger areas may be appropriate in watersheds with unstable terrain (class 4-5). Areas should include at least two streams or stream reaches (i.e., S4 to S6) with previous detections of tailed frogs. The area should include a 30 m core area buffered by a 20m management zone on both sides of occupied stream reaches.
Habitat Attributes	Tailed frog aquatic habitats are generally characterised by year round flow, non fish bearing (S4-S6), intermediate gradient (>2.5%), coarse substrates (>6.4 cm), stable channel beds and forest cover (generally associated with structural stage S6 or S7). Retain 100% of forest cover within the core area. Within the management zone maintain 70% basal area with appropriate structure to maintain riparian forest, important structural elements (e.g., coarse wood debris,) water quality and temperature (5 to 18 degrees), and naturally dispersed water flows.
Elevation	From sea level to 2140 m.



May 28, 2019

File: 36460-30/DSC

VIA EMAIL

To: *Forest Act* agreement holders

Re: Wildlife Habitat Area proposals to protect breeding habitat for Northern Goshawk (*Accipiter gentilis laingi*) in the Sunshine Coast Natural Resource District (WHA 2-672 to 678)

I am writing to advise you of the commencement of a formal review and comment period for seven proposed Wildlife Habitat Area (WHAs) for Northern Goshawk (*Accipiter gentilis laingi*) (hereafter NOGO) in the Sunshine Coast Natural Resource District (DSC). This designation is proposed by the British Columbia (BC) Ministry of Forests, Lands, Natural Resource Operations & Rural Development (FLNRORD), under authority of the *Forest and Range Practices Act* (FRPA) and the *Oil and Gas Activities Act* (OGAA). FLNRORD is able to establish WHAs under both the *Government Actions Regulation* (GAR) in FRPA and *Environmental Protection Management Regulation* (EPMR) in OGAA. You have been identified as a *Forest Act* agreement holder that may be affected by the Order establishing these WHAs.

The WHA proposals encompass approximately 1380.4 ha total area and are located on Crown land. The proposed WHAs are necessary to protect important breeding habitat for NOGO, which was assessed as “Threatened” in 2013 by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and is listed on Schedule 1 of the federal *Species at Risk Act*. The cabinet approved provincial [NOGO Implementation Plan](#) was released in February, 2018 and represents the provincial management commitment for the species. The establishment of these WHAs for NOGO breeding habitat is consistent with the goals and objectives of the provincial NOGO Implementation Plan.

WHA designations under the GAR are managed according to specific management practices, known as general wildlife measures (GWMs). General wildlife measures regulate forest management practices partially or entirely within a WHA. GWMs may also be established to regulate range activities, but are not necessary in this case. GWMs proposed for this WHA are similar to GWMs previously established for NOGO WHAs elsewhere in coastal BC. Draft GWMs are listed in Appendix 1.

WHA designations under the EPMR are considered by the BC Oil and Gas Commission (OGC) among the suite of Government’s Environmental Objectives (GEOs) when adjudicating oil and gas activity permits. The GEOs guide the OGC in making determinations on permit applications and for permit conditions. Following the designation of a WHA, the OGC must consider whether or not oil and gas activities will have a material adverse effect on the ability of the wildlife habitat within the WHA to provide for the survival of the wildlife species for which the WHA was established.

An overview map, digital shapefile, and supporting information for the proposed WHAs are available at the FTP site address below.

ftp://ftp.geobc.gov.bc.ca/publish/Regional/Surrey/WHA/South_Coast_Northern_Goshawk/DSC/

The impact of the proposed WHAs on the mature timber harvesting landbase (THLB) is estimated to be 489.9 ha. Thus, the current planning requirement for the protection of 213 ha of the mature THLB for Northern Goshawk in DSC as defined in the Species at Risk Notice issued in 2004 under Section 7 of Forest Planning and Practices Regulation (FPPR) and Section 9 of the Woodlot Licence Planning and Practices Regulation (WLPPR) will ‘turn off’ following the establishment of these WHAs.

Where biologically defensible, the WHAs have been co-located with existing constrained areas (i.e., Ungulate Winter Range, other WHAs, and/or Old Growth Management Areas [OGMAs]), although this overlap was not extensive due to limitations outlined in the provincial Implementation Plan. The total area of overlap with existing constrained areas is 113.3 ha. The NOGO breeding habitat identified in WHA 2-678 is partially protected by Ambrose Lake Ecological Reserve; however, the nest area and some of the breeding area is located outside the park boundaries. Therefore, this new WHA is proposed to protect the nest area and spatially define and recognize the breeding area outside the park boundaries.

Prior to making a final determination for the establishment of these WHAs, FLNRORD is committed to meeting several regulatory tests set out in GAR (see Appendix 2). In each case, the decision maker must be satisfied that the applicable GAR test has been met. There are no similar tests under EPMR, but there is a notice and consultation requirement.

It is the intent of FLNRORD, through the consultation and review process specified in GAR Section 3, to elicit information from affected *Forest Act* agreement holders that will assist the decision maker when deliberating the tests outlined in GAR Section 2(1)(c). Specifically, we are requesting that you provide the following information in writing following your review:

- 1) If and how the WHA will have a material adverse impact on your delivered wood cost.
- 2) If and how the WHA will cause undue constraint on your ability to exercise your rights under your *Forest Act* agreement.

Please also provide comments in writing, expressing your support for this proposal (i.e., unconditional, conditional, or none). If you do not support this designation, please include the reason in your response. If FLNRORD is made aware that the Order may have a material adverse effect on your delivered wood costs or cause undue constraint on timber harvesting rights, then a consultation period will occur with the intent of addressing these concerns.

Considering that these WHAs are currently proposed and progressing through the formal designation process, voluntary compliance with this management direction is encouraged from the perspective of shared environmental stewardship. Given that these WHAs represent important

habitat that supports a species at risk, I also encourage you to consider these habitats and wildlife values when planning future forestry activities in the species' range.

I can be reached by email at Melanie.L.Wilson@gov.bc.ca (preferred) or phone (604-586-5649) to discuss the proposed WHAs. If I do not hear back from you by July 7, 2019, I will assume you have no concerns and the proposed WHAs will be moved forward towards a determination.

Thank you for your attention to this matter.

Sincerely,

A handwritten signature in black ink that reads "Melanie Wilson". The signature is written in a cursive style with a large, sweeping initial "M".

Melanie Wilson, MSc, RP Bio
Wildlife Biologist
Ministry of Forests, Lands, Natural Resource Operations & Rural Development
South Coast Natural Resource Region

Appendix 1. Proposed General Wildlife Measures (GWMs)

Access

1. Do not construct roads, trails, landings or stream crossings in the WHA.

Harvesting and Silviculture

2. Do not conduct timber harvesting or silviculture treatments, except as provide in GWM 3
3. GWM 2 does not apply where guyline anchors and tailholds are required to facilitate worker safety during adjacent timber harvesting.
4. Trees felled in accordance with GWM 3 or Section 2(3) of the Forest Planning and Practices Regulation that fall within a WHA must be retained on-site to provide coarse woody debris.

Pesticides

5. Do not use pesticides, except for herbicides to control invasive plants or noxious weeds, if applied by:
 - a. stem injection, cut and paint, foliar wipe or other direct plant application; or
 - b. spot spraying individual plants or a cluster of plants if direct plant application is not practicable.

Appendix 2. Section 7 & 9 Species at Risk Notice and Government Actions Regulation (GAR) Tests

Section 7 & 9 Species at Risk Notice

In December 2004 under Section 7(2) of the *Forest Planning and Practices Regulation* (FPPR) and Section 9(3) of the *Woodlot Licence Planning and Practices Regulation* (WLPPR), persons required to prepare a forest stewardship plan or woodlot licence plan were provided notification of indicators of the amount of area, distribution or areas and attributes of those areas required for the survival of species at risk, including Northern Goshawk, in the Sunshine Coast Natural Resource District. The notification triggered the requirement for a person preparing a forest stewardship plan or woodlot licence plan to specify results or strategies consistent with the objective set by government for wildlife in FPPR 7(1) and WLPPR 9(2). The Notice specific to Northern Goshawk, requires a strategy to maintain 213 ha of the mature THLB. Upon approval of these proposed WHAs, persons required to prepare a forest stewardship plan or woodlot licence plan will be exempted from the obligation to prepare results or strategies for Northern Goshawk, in the mature THLB in the Sunshine Coast Natural Resource District.

GAR Tests

Section 9(2)(a): This section allows GWMs to be established if the decision maker is satisfied that the measure is necessary to protect or conserve the WHAs. Within the WHAs, proposed GWMs will describe management practices that are necessary to maintain a level of management appropriate for the conservation of this species at risk. The proposed GWMs are supported by the best available science. Since Northern Goshawk breeding success is largely dependent on coastal mature coniferous forests, and timber harvesting in those forests would eliminate the suitable nesting habitat, that activity is prohibited by the GWMs. Similarly, road construction is prohibited since it results in direct loss of habitat, and can fragment suitable breeding areas, increase access for nest predators that frequent edge environments, increase human disturbance, and increase hard edge effect (e.g., increase windthrow potential, change canopy microclimates). Use of pesticides is prohibited as a precautionary measure to avoid habitat modifications that might attract nest predators.

Section 9(2)(b): This section enables GWMs to be established if the decision maker is satisfied that FRPA or another enactment does not otherwise provide for that protection or conservation. While other regulations or enactments may deliver some protection of the proposed WHAs, those restrictions are not specific to Northern Goshawk and there is no certainty that the mechanism will provide ongoing protection.

Section 10(1): This section allows for WHAs to be established if the decision maker is satisfied that the area is necessary to meet the habitat requirements of the species at risk. These WHAs are necessary to protect the breeding habitat requirements of Northern Goshawk. It is widely accepted that forest harvesting and road building that result in loss and fragmentation of nesting and foraging habitats is the primary threat to the species. In the South Coast Conservation Region, the long-term recovery goal of the provincial Implementation Plan and the federal Recovery Strategy is to protect 110 breeding areas, with a short-term goal of protecting 30 new breeding areas by 2020. The proposed WHAs will protect suitable breeding habitat that was verified through field surveys of known nest sites and confirmed to be recently occupied. These

measures are intended to meet expectations outlined in the federal Recovery Strategy for Northern Goshawk and enable the province to demonstrate tangible progress in meeting its' obligations to effectively protect critical habitat under the federal SARA.

Appendix G

Invasive Plants

FOR PURPOSES OF FRPA, THE PRESCRIBED SPECIES OF INVASIVE PLANTS ARE AS FOLLOWS (S.2 INVASIVE PLANTS REGULATION, 2004):

Weed Species	Scientific name	Weed Species	Scientific name
Anchusa	Anchusa officinalis	Oxeye daisy	Chrysanthemum leucanthemem
Baby's breath	Gypsophila paniculata	Perennial pepperweed	Lepidium latifolium
Black knapweed	Centaurea nigra	Plumeless thistle	Carduus acanthoides
Blueweed	Echium vulgare	Puncture vine	Tribulus terrestris
Brown knapweed	Centaurea jacea	Purple loosestrife	Lythrum salicaria
Bull thistle	Cirsium vulgare	Rush skeletonweed	Chondrilla juncea
Canada thistle	Cirsium arvense	Russian knapweed	Acroptilon repens
Common burdock	Arctium minus	Scentless chamomile	Matricaria maritima
Common tansy	Tanacetum vulgare	Scotch broom	Cytisus scoparius
Dalmatian toadflax	Linaria dalmatica	Scotch thistle	Onopordum acanthium
Diffuse knapweed	Centaurea diffusa	Spotted knapweed	Centaurea maculosa
Field scabious	Knautia arvensis	St. John's wort	Hypericum perforatum
Giant knotweed	Polygonum sachalinense	Sulphur cinquefoil	Potentilla recta
Gorse	Ulex europaeus	Tansy ragwort	Senecio jacobaea
Hoary alyssum	Berteroa incana	Teasel	Dipsacus fullonum
Hoary cress	Cardaria draba	Yellow Iris	Iris pseudacorus
Hound's-tongue	Cynoglossum officinale	Yellow starthistle	Centaurea solstitialis
Japanese knotweed	Polygonum cuspidatum	Yellow toadflax	Linaria vulgaris
Leafy spurge	Euphorbia esula		
Marsh thistle	Cirsium palustre		
Meadow hawkweed	Hieracium pilosella.		
Meadow knapweed	Centaurea pratensis		
Nodding thistle	Carduus nutans		
Orange hawkweed	Hieracium aurantiacum		

Of concern within the CFGP K4G in particular are Himalayan blackberry (*Rubus discolor*) which is not indicated in the list above, but is also an introduced species that can aggressively spread, Scotch Broom (*Cytisus scoparius*). Measures are found under Section 10 within the FSP.

PREVENT

These species are not known to occur in the region, but are likely to establish if introduced.

Eradicate if found. REPORT ALL SIGHTINGS

Plant Species	Status	Report To
Common Crupina <i>Crupina vulgaris</i> **	Provincial EDRR	Report A Weed BC
Cordgrass, Smooth <i>Spartina alterniflora</i> **	Provincial EDRR	Report A Weed BC
Hawkweed, Whiplash <i>Hieracium flagellare</i>	Regional EDRR	Info@coastalisc.com
Knapweed, Russian <i>Acroptilon repens</i>	Regional EDRR	Info@coastalisc.com
Kudzu <i>Pueraria Montana</i> **	Provincial EDRR	Report A Weed BC
Rush Skeleton weed <i>Chondrilla juncea</i>	Regional EDRR	Info@coastalisc.com
Yellow Starthistle <i>Centaurea solstitialis</i> **	Provincial EDRR	Report A Weed BC

ERADICATE

These species are known to occur in limited distribution and low density.

Eradicate if found. REPORT ALL SIGHTINGS

Plant Species	Status	Report To
Blueweed, <i>Echium vulgare</i>	Regional EDRR	Info@coastalisc.com
Buffalo Burr, <i>Solanum rostratum</i>	Regional EDRR	Info@coastalisc.com
Common Reed, <i>Phragmites australis</i> **	Provincial EDRR	Report A Weed BC
Cordgrass, Dense-flowered <i>Spartina densiflora</i> **	Provincial EDRR	Report A Weed BC
Cordgrass, English <i>Spartina anglica</i> **	Provincial EDRR	Report A Weed BC
Cordgrass, Salt meadow <i>Spartina patens</i> **	Provincial EDRR	Report A Weed BC
Garlic Mustard <i>Alliaria petiolata</i>	Regional EDRR	Info@coastalisc.com
Giant Hogweed <i>Heracleum mantegazzianum</i> (T) (N)	Regional EDRR	Info@coastalisc.com
Giant Reed <i>Arundo donax</i> **	Provincial EDRR	Report A Weed BC
Hoary Alyssum <i>Berteroa incana</i>	Regional EDRR	Info@coastalisc.com
Hoary Cress, Heart-pod <i>Lepidium draba subsp. Draba</i>	Regional EDRR	Info@coastalisc.com
Lesser Celendine, <i>Ficaria verna</i>	Regional EDRR	Info@coastalisc.com
Loosestrife, Garden (Yellow) <i>Lysimachia vulgaris</i>	Regional EDRR	Info@coastalisc.com
Milk Thistle <i>Silybum marianum</i> (N)	Regional EDRR	Info@coastalisc.com
Shiny Geranium, <i>Geranium lucidum</i> **	Provincial EDRR	Report A Weed BC
Slender False Brome, <i>Brachypodium sylvaticum</i> **	Provincial EDRR	Report A Weed BC
Sulfur cinquefoil <i>Potentilla recta</i>	Regional EDRR	Info@coastalisc.com
Sweet Fennel <i>Foeniculum vulgare</i>	Regional EDRR	Info@coastalisc.com
Wild Chervil <i>Anthriscus sylvestris</i>	Regional EDRR	Info@coastalisc.com

CONTAIN

These species have established infestation in portions of the region.
Contain existing infestation and prevent spread to un-infested areas.

Plant Species

Carpet Burweed *Soliva sessilis*
Hawkweed, Orange *Hieracium aurantiacum*
Knapweed, Black *Centaurea nigra*
Knapweed, Diffuse *Centaurea diffusa* (N)
Knapweed, Meadow *Centaurea pratensis*
Knapweed, Spotted *Centaurea maculosa* (B) (N)
Knotweed, Bohemian *Fallopia x bohemica* (N)
Knotweed, Giant *Fallopia sachalinensis* (N)
Knotweed, Himalayan *Polygonum polystachum* (N)
Knotweed, Japanese *Fallopia japonica* (N)
Poison Hemlock *Conium maculatum* (T)
Policemans Helmet/Himalayan Balsam *Impatiens glandulifera*
Scotch Thistle *Onopordum acanthium*
Yellow Flag Iris *Iris pseudacorus* (N)

CONTROL

Established infestations common and widespread throughout the Coastal ISC region.
Focus control in high value conservation areas.
Use biological control, if available, on a landscape scale.

Plant Species

Bur Chervil *Anthriscus caucalis* (N)
Burdock Species *Arctium spp.*
Canada Thistle *Cirsium arvense* (B) (N)
Tansy, Common *Tanacetum vulgare*
Teasel, Fuller's *Dipsacus fullonum*
Dalmatian Toadflax *Linaria dalmaticab* (B) (N)
English Holly *Ilex aquifolium*
English Ivy *Hedera helix*
Giant Mannagrass *Glyceria maxima*
Hairy Cat's Ear *Hypochaeris radicata*
Himalayan Blackberry *Rubus armeniacus* (discolor)
Jimsonweed/Devil's Apple *Datura stramonium* (T)
Periwinkle Species *Vinca spp.*
Loosestrife, Purple *Lythrum salicaria* (B) (N)
Scotch Broom *Cytisus scoparius*
St. John's Wort *Hypericum perforatum* (B)
Tansy Ragwort *Senecio jacobaea* (B) (N)

CONTROL

Established infestations common and widespread throughout the Coastal ISC region.
Focus control in high value conservation areas.
Use biological control, if available, on a landscape scale.

Plant Species

Tansy Ragwort *Senecio jacobaea* (B) (N)

Butterfly Bush *Buddleja davidii*

Daphne/Spurge-Laurel *Daphne laureola* (T)

Gorse *Ulex europaeus*

Eurasian Water-milfoil *Myriophyllum spicatum*

Yellow Archangel *Lamiaeum galiobdolon*

Hawkweed, Yellow *Hieracium caespitosum*

Supplemental Notes:

- The above lists has been approved by the Coastal ISC Board and developed in consultation with key land managers in the Coastal ISC service area a the annual operational planning meeting (February 2016).
- The above lists reflect the entire Coastal ISC area. The placement of a species into a category at the landscape level is very likely to be different from a placement of a species into a category at the local level.
- Provincial EDRR - provincially significant and are to be reported immediately to the province through Report-A-Weed.
- Regional EDRR - regionally significant species and to be reported to the Coastal ISC.

[** BC Proposed Prohibited Weeds \(PDF, February 2015\)](#)

(B) = Invasive plants with biological control agents available

(T) = Invasive plants which pose potential human health and safety hazards

[\(N\) = BC Weed Control Act, Regulated Noxious Weed in BC](#)

Appendix H Correspondence & Referral Information

Due to the privacy concerns, this section will be kept on file and not shared as part of the public information.