

Haida Gwaii Forest Stewardship Plan

November 2011



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1.0 Clarifications

In this Forest Stewardship Plan (FSP, “the Plan”, “this Plan”), where terms are used which are defined in the Land Use Order (LUO), Forest and Range Practices Act or the Forest Planning and Practices Regulation, the definition of the term is as per the Order, Act or Regulation (e.g., “tree-length” and “intergovernmental process” are as defined in the LUO). Where there is confusion or conflict between the LUO, FPRA or the FPPR, the order of precedence is as follows: LUO, then FRPA, then the FPPR.

“Plan Area” means the tenure areas indicated in Table 1, covered by FDU A (refer to FSP map in Appendix A).

“Plan Holder” means one of the signatories to the FSP, as indicated in Table 1, below.

“Cedar” means, unless specified otherwise, western redcedar (*Thuja plicata*) or yellow cedar (*Chamaecyparis nootkatensis*).

“CMT” means culturally modified tree, as defined in the LUO. Furthermore, as noted within the LUO, s. 1(2), the LUO is in conflict with FPPR s. 10. However, consistent with FPPR s. 12(4) the objective established under the LUO prevails in regards to the date provided for a CMT (i.e., is 1920, rather than 1846, as defined under the Heritage Conservation Act and referenced in the FPPR).

“Diameter at Breast Height” or “dbh” means the outer bark diameter of a tree, measured at 1.3m from the forest floor, on the high side (consistent with the Ministry of Forests Cruising Manual).

“Direct Tributary” means a portion of a tributary stream that:

- a) is a minimum of 100m in length, and
- b) has the same stream order as the most downstream reach of the tributary.

“Tree-length” is used throughout the Plan in regards to the widths of no-harvest and management zones. Tree-length is as defined in the LUO, and the associated LUO Schedule 5. The site specific tree-length (i.e., height assigned) will be documented in the Site Plan. The LUO definition provides two methods for determining the tree-length, depending on if the stand is old-growth or young/ immature, as follows:

- 1) Using the predominant site-series for the area and then referencing LUO Schedule 5. As site-series information is required to reference Schedule 5, Plan Holders will need to determine the predominant site-series by either using TEM information or by field verifying the site-series. Whichever method is used, it will be documented within the Site Plan.
- 2) By measuring the tallest trees in the area adjacent to the feature. It should be noted that this method would be inappropriate for areas that have been previously harvested (i.e., there are no mature trees to measure).

Whichever method, 1 or 2 from above, is used, it will be documented within the Site Plan. Where areas have previously been harvested, and the stand has yet to become mature, then method 2 from above will not be used.

“High priority invasive plants” are those which are currently limited in distribution across Haida Gwaii and will have significant negative impacts if permitted to proliferate. Invasive plants and high-priority invasive plants known to occur in the Plan area at the time of Plan submission are listed in Table 11.

“Ministry of Forests” (MOF) means the Ministry of Forests, Lands and Natural Resource Operations (the Provincial government Ministry responsible for bringing the LUO into force and responsible for approving Operational Plans for forest tenure holders).

“Riparian Management Areas”, under the LUO, the RMA for streams is as follows:

Type I Fish Habitat = 2.0 tree-lengths

Type II Fish Habitat = 1.5 tree-lengths

The abbreviation “s.” is used to indicate a numbered section or sections of the indicated Act or Regulation.

The capitalized word “Section” or “Sub-section” is used in the singular or plural to refer or cross reference to a numbered clause or section within this FSP.

Where the LUO or Schedules contained therein are referenced in this Plan, they are as they were on the date of approval of this FSP, and provided in Appendix E, for reference.

2.0 Abbreviations

“AFU” means active fluvial unit

“AIA” means an Archaeological Impact Assessment completed by a Professional Archeologist

“BEC” means Biogeoclimatic Ecosystem Classification

“CSA” or “CS Area” means Cedar Stewardship Area

“CP” means Cutting Permit

“DDM” means Designated Decision Maker

“ECA” means Equivalent Clearcut Area

“FDU” means Forest Development Unit

“FRPA” means the Forest and Range Practices Act

“FPPR” means the Forest Planning and Practices Regulation

“GAR” means the Government Actions Regulation

“GWM” means General Wildlife Measure

“HTFF” means Haida Traditional Forest Feature

“HTHF” means Haida Traditional Heritage Feature

“IAPP” means the provincial Invasive Alien Plant Program

“LU” means “Landscape Unit”, which are as established in the LUO, Schedule 1

“LUO Order” or “LUO” means the Land Use Objectives Order for the Haida Gwaii (dated December 16, 2010)

“MOF” means Ministry of Forests

“NAR” means Net Area to be Reforested

“NWIPC” means the Northwest Invasive Plants Council

“PAS” mean Permanent Access Structure

“RBA” means Residual Basal Area

“RMA” means Riparian Management Area

“RMZ” means Riparian Management Zone

“RP” means Road Permit

“RRZ” means Riparian Reserve Zone

“TEM” mean Terrestrial Ecosystem Mapping

“TFL” means Tree Farm License

“TL” means Timber License

“TSL” means Timber Sale License

“WHA” means Wildlife Habitat Area

3.0 Application

FRPA s. 3(4)

Plan Signatories & Tenures

This FSP applies to the Plan Holders and tenures indicated in Table 1, below.

Table 1: Plan Signatories and Associated Tenures Subject to this FSP, by FDU

Plan Signatory	Tenure	FDU
Taan Forest LP	TFL 60, including the following TFLs ¹ : T0315, T0322, T0331, T0336, T0341, T0348, T0351, T0358, T0363, T0374, T0380, T0387, T0396, T0402, T0410, T0415, T0422, T0430, T0437, T0441, T0448, T0455, T0461, T0468, T0473, T0482, T0503, T0510	A
	FLTC A87661	A
BCTS – Chinook Business Area (Haida Gwaii TSA)	N/A	A
Teal Cedar Products Ltd.	TFL 58	A
	FL A16870	A
	TL T0184	A
	TL T0253	A
Husby Group		
- Husby Forest Products Ltd.	FL A16869	A
- Dawson Harbour Logging Co. Ltd.	FL A75084	A
- TimberWest Forest Ltd.	TL T0279	A

Limited Responsibility

Each FSP Signatory shall be individually responsible for achieving the results, carrying out the strategies, meeting the stocking requirements or implementing the measures in this FSP that pertain to the forest practices of said Licensee or their license areas.

4.0 Term

FRPA s. 6(1)(a)(b); 6(2)

The term of this FSP commences on the date of FSP approval by the DDM and expires 5 years after the date of approval, or another date specified in writing by the Minister or DDM.

5.0 Map

FRPA s. 5(1)(a) and FPPR s. 14

The FSP map appended to this document (Appendix A) shows the forest development units (FDUs), tenures and other features of the Plan Area. The map also provides an overview of the Plan Area, including major topographic features and related information that will take effect with the approval of this FSP.

¹ This FSP does not apply to TFL 60, or and associated TFLs until the tenures are transferred to Taan Forest LP.

Designations in Effect prior to Submission FPPR s. 14(2)

The FSP map shows the designations and other areas listed in FPPR s. 14(3) that were in effect on the date the FSP was submitted for approval.

Designations in effect at the time of submission are summarized in Table 2, below.

Table 2: Designations in Effect in the Plan Area at Time of Plan Submission

Designation Category	Designation Details	FDU	Date Designated
Ungulate Winter Ranges	N/A	N/A	N/A
Wildlife Habitat Areas	Northern Goshawk: WHA #6-001 WHA #6-002	A	September 13, 2001 May 14, 2003
	Marbled Murrelet: WHA #6-041 WHA #6-046	A	April 7, 2003
Fisheries Sensitive Watersheds	N/A	N/A	N/A
Scenic Areas	VQO's established for the TSA VQOs for TSA and TFLs consolidated and mapped	A	December 22, 2005
Community Watersheds	Honna River, Slarkedus Creek, Tarundl Creek	A	June 15, 1995
	Queen Charlotte Community Watershed		Sept. 11, 1997
Old Growth Management Areas	N/A	N/A	N/A
Areas in which commercial timber harvesting is prohibited	As shown on the FSP Map (Protected Areas, Reserves, Private Land/ areas outside of FDU A)	A	N/A
Recreation Sites	Rennell Sound, Kagan Bay, Clapp Basin, Small Lake, Moresby	A	Objectives Effective December 31, 1997
Recreation Trails	Riley Beach, Five "5" Mile Beach, Slatechuck Mountain, Sleeping Beauty	A	Objectives Effective December 31, 1997

Areas within FDUs Subject to Cutting Permit or Road Permit
FPPR s. 14 (2)(b) and 14(3)(j)&(k)

Tables 3, 4 and 5 below, show the areas within the Plan Area that are subject to a CP, RP or TSL held by (or entered into) one of the Plan Holders and in effect on the Date of Submission.

The FSP Supporting Information Map also illustrates the information presented in Tables 3, 4, and 5.

Table 3: Active Cutting Permits & Timber Sale Licenses

Plan Signatory	Tenure	Approved CPs (TSLs for BCTS)
Taan Forest LP	TFL 60, including the following TLs: T0315, T0322, T0331, T0336, T0341, T0348, T0351, T0358, T0363, T0374, T0380, T0387, T0396, T0402, T0410, T0415, T0422, T0430, T0437, T0441, T0448, T0455, T0461, T0468, T0473, T0482, T0503, T0510	563, 564, 574, 577, 578, 588, 589, 590, 591, 593, 594, 575, 588
	FLTC A87661	1, 2, 3
BCTS – Chinook Business Area (Haida Gwaii TSA)	N/A	A62485, A68535, A83255, A83750, A83751, A83752, A83859, A83862, A85373, A85507, A85508, A85757
Teal Cedar Products Ltd.	TFL 58	228, 242, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258
	FL A16870	601, 604, 605, 606
	TL T0184	N/A
	TL T0253	N/A
Husby Group		
- Husby Forest Products Ltd.	FL A16869	201, 200, 143, 142, 141, 140, 139, 138, 137, 136, 135, 134, 133, 132, 131, 130, 129, 121, 119, 202, 144, 617 (formerly in FL A16871)
- Dawson Harbour Logging Co. Ltd.	FL A75084	804, 805, 806, 807, 808
- TimberWest Forest Ltd.	TL T0279	N/A

Table 4: Active Road Permits

Plan Signatory	Tenure	Approved RPs
Taan Forest LP	TFL 60	R13328, R13346, R13347, R13348, R13349, R13350
	FLTC A87661	R18169
BCTS – Chinook Business Area (Haida Gwaii TSA)	N/A	R17021, R17140, R17390, R17632, R17781, R18168, R18169
Teal Cedar Products Ltd.	TFL 58	R06206, R13249
	FL A16870	R00863
	TL T0184	R06711
	TL T0253	R06723
Husby Group		
- Husby Forest Products Ltd.	FL A16869	R06269, R06268, R07497
- Dawson Harbour Logging Co. Ltd.	FL A75084	R11023
- TimberWest Forest Ltd.	TL T0279	R07084

Table 5: Active Salvage Permits

Plan Signatory	Tenure	Salvage Permits (CP)
Taan Forest LP	TFL 60	690 - post harvest 926, 929, 625 - damaged timber
	FLTC A87661	700 - damaged timber
BCTS – Chinook Business Area (Haida Gwaii TSA)	N/A	N/A
Teal Cedar Products Ltd.	TFL 58	296, 299
	FL A16870	599, 600
	TL T0184	G, M
	TL T0253	N/A
Husby Group		
- Husby Forest Products Ltd.	FL A16869	471, 488
- Dawson Harbour Logging Co. Ltd.	FL A75084	N/A
- TimberWest Forest Ltd.	T0279	N/A

Table 6, below, shows the areas within the Plan Area that are Declared Areas held by one of the Plan Holders. The FSP Supporting Information Map also illustrates the information presented in Table 6.

Table 6: Declared Areas (FPPR s. 14(4))

Plan Signatory	Tenure	Declared Areas	
		Cutblocks	Roads
Taan Forest LP	TFL 60	N/A	N/A
	FLTC A87661	N/A	N/A
BCTS – Chinook Business Area (Haida Gwaii TSA)	N/A	LOO013, MAI003, MAI005, MOS720, SKI101, SKI102, SKI103, SKI200, COL010, COL013, JUN005, KUM002, KUM020, LAW711, LAW712, LOO007, LOO012, NEY009, NEY022, A68531, BON1, NEY002, NEY007, NEY011, MAI100, MAI101, MAI104, MOS716, MOS813, EAS004, EAS120A, KUM103, LAW005, MOS803, MOS809, SEW100, SEW281, SEW281A, SEW290A, SEW350, SKI511, LOO005, LOO008, EAS005, LOO117, LOO118, LOO107, LOO122, LOO121, GRE503, LOO123, BON508, BON509, BON517, HAN507, RIL520, LAW001, TLE003, TLE004, LOO125, LOO128, COL011	NEY2000, NEY1000, MAI2300, LOO3000, NEY1000, COL3000, LAW1000, BIL1320, BIL1230, MOS 1220, LOO2690, LOO2691, LOO2692, LOO2693, LOO2620, LOO2623, LOO4500, EAS1800, EAS1810, EAS1820, EAS1830, EAS1840, EAS1850, EAS1860, EAS1870, BOU3500, BOU3000, BOU3100, LOO6100, BM1730, LOO1600, LOO1610, LOO1620, BM2800, BM2940, LOO2695, LOO2640, QC TLE1000
Teal Cedar Products Ltd.		N/A	N/A
Husby Group		N/A	N/A

6.0 Results & Strategies

Land Use Objectives (LUO s. 3-23)

Haida Gwaii Land Use Objective Order

On December 16, 2010 the Minister of Natural Resource Operations signed the Haida Gwaii Land Use Objectives Order, which established objectives for the purposes of the Forest and Range Practices Act. Results and Strategies have been created to meet all of these objectives, as provided below. Applicable Schedules from the LUO have been included in Appendix E, as they were on the date of FSP submission for approval.

Cultural Objectives

Sections 6.1 through 6.16 apply to FDU A.

Cedar Stewardship Areas

LUO s. 3

- 6.1 Plan Holders will not harvest within CS Areas (as identified in the LUO, Schedule 3).
- 6.2 Despite Section 6.1 above, circumstances may arise where harvesting within Cedar Stewardship Area(s) (CS Area) for commercial purposes is desired. Where harvesting is proposed within a CS Area, the Plan Holders will ensure all of the following:
 - a) any proposed harvest activities with CS Areas are consistent with the outcome of an intergovernmental process, completed by the Plan Holders as a group; and
 - b) ensure the total CS Area area harvested is $\leq 10\%$ of the total of all CS Areas (2,536.3ha, as indicated in Table 8, below), and that no more than 250ha is harvested in a 10 year period; and
 - c) the CS Area harvest within a given Landscape Unit, for each 10 year period, will be proportional to the occurrence of CS Areas within the LU (see Table 7, below); and
 - d) the Plan Holders will maintain a group ledger, updated annually at a minimum, which tracks any CS Area harvest activities; and
 - e) where CS Areas overlap tenures outside of the Plan Area, the Plan Holders will make reasonable efforts to consult with the relevant tenure holder(s) to ensure that CS Area harvest level do not exceed the limits described in b) and c), above.

Cultural Feature Identification

LUO s. 4

- 6.3 Prior to commencing harvesting or road construction activities in a development area, the applicable FSP Holder will ensure that a Cultural Features Identification Survey has been completed for the proposed area by a surveyor certified by the Council of the Haida Nation.

Table 7: Maximum CS Area Harvest by Landscape Unit

Landscape Unit	CS Area (ha)	Maximum 10 Year CS Area Harvest Potential (ha)	Maximum Total CS Area Harvest Potential (ha) (10 % threshold)
Eden Lake	3,150.8	31.5	315.1
Honna	1,362.7	13.6	136.3
Ian	5,857.2	57.5	585.7
Jalun	210.8	2.1	21.1
Louise Island	228.1	2.3	22.8
Lower Yakoun	6,933.9	67.3	693.4
Masset Inlet	3,310.7	33.1	331.1
Naikoon	284.7	2.8	28.5
Otun	473.0	4.7	47.3
Rennell	304.7	3.0	30.5
Sewell	69.1	0.6	6.9
Skidegate Lake	1,335.9	13.3	133.6
Tlell	933.2	9.3	93.3
Yakoun Lake	897.7	8.9	89.8
Total	25,352.6	250.0	2,536.3

Haida Traditional Heritage Features LUO s. 5

- 6.4 “Haida Traditional Heritage Features” are defined the LUO as being those features listed in Schedule 2 of the LUO. However, in order to be measurable in the context of the FSP approval process, the features listed as HTHFs (Class 1 and Class 2) in the LUO are considered to be those that are of continued cultural significance to the Haida Nation, determined by using the following strategies:
- Potential HTHFs will be identified and assessed through the Cultural Features Identification Survey, completed by qualified surveyors.
 - Where potential HTHFs are identified, AIAs will be completed, and the significance of the identified feature will be determined.
 - Where identified features are deemed to be of continued cultural significance in the AIA, they will be classed as HTHFs and managed accordingly.
- 6.5 Where Class 1 HTHFs are identified, they will be retained and a 500m (minimum width) no-harvest zone, measured from the edge of the HTHF, will be maintained to protect the HTHF, subject to a) and b), below.
- Where a reduction in the no-harvest zone is required for road access, other infrastructure, or to address a safety concern and no practicable alternative exists, a Plan Holder may reduce the size of the no-harvest zone consistent with the outcome of a completed intergovernmental process.
 - Where necessary to address site specific values, the no-harvest zone may be decreased by up to 0.5 tree-lengths from the outer edge of the zone, provided that there is no net loss of no-harvest zone area within the development area. Site specific values will be determined by the signing Forester and documented within the Site Plan.

- 6.6 Where Class 2 HTHFs are identified, they will be retained and a 100m (average width) no-harvest zone, measured from the edge of the HTHF, will be maintained to protect the HTHF, subject to a) and b), below.
- a) Where alteration, removal or reduction of the Class 2 HTHF or no-harvest zone is required for road access, other infrastructure, or to address a safety concern and no practicable alternative exists, a Plan Holder may alter, remove or reduce the HTHF and/ or the size of the no-harvest zone consistent with the outcome of a completed intergovernmental process.
 - b) Where necessary to address site specific values, the no-harvest zone may be decreased by up to 0.5 tree-lengths from the outer edge of the zone, provided that there is no net loss of no-harvest zone area within the development area. Site specific values will be determined by the signing Forester and documented within the Site Plan.

Where the Class 2 HTHF is a “Karst Feature”, it will be also be subject to Section 6.80, below.

Haida Traditional Forest Features

LUO s. 6

- 6.7 Where Class 1 HTFFs are identified, they will be retained and a 1.0 tree-length (average width) no-harvest zone, measured from the edge of the HTHF, will be maintained to protect the HTFF. Adjacent the no-harvest zone a 1.0 tree-length (average width) management zone, measured from the edge of the no-harvest zone, will be established to protect the no-harvest zone, subject to a) and b), below.
- a) Where necessary to address site specific values, the Class 1 HTFF management zone identified under Section 6.7 above, may be decreased by up to 0.5 tree-lengths from the outer edge of the management zone, provided that there is no net loss of management zone area within the development area.
 - b) The area of the management zone may be reduced, if necessary for road access, other infrastructure or to address safety concerns, provided that:
 - i) the integrity of the HTFF is maintained; and
 - ii) the size of the management zone is consistent with the outcome of a completed intergovernmental process.
- 6.8 Where Class 2 HTFFs are identified within a development area, $\geq 50\%$ of the identified occurrences will be retained and their integrity protected. Stand level retention will be retained where required, to maintain the integrity of the HTFF. Additional strategies for preserving the integrity of HTFFs include the following:
- a) adjusting operational boundaries to exclude HTFF areas; and
 - b) modifying harvesting practices in the vicinity of HTFFs.
- 6.9 Where Class 3 HTFFs are identified within a development area, they will be retained and protected within established stand level retention to the extent practicable. The percentage of HTFF occurrences that are protected within a given development area will range from 0-100%, depending on the location of the HTFFs and the location of stand level retention that is established to meet other objectives.

Cedar Retention

LUO s. 7

6.10 Where development areas are either:

- i) > 10ha and the pre-harvest cedar (western redcedar and yellow cedar) content >30%; or
- ii) ≤ 10ha and the pre-harvest cedar (western redcedar and yellow cedar) content >60%;

then Plan Holders will retain a minimum of 15% of the combined pre-harvest cedar composition of the development area, measured in hectares.

The pre-harvest cedar composition will be determined by calculating the weighted average cedar content for the entire development area as indicated on the inventory mapping for the polygons in the development area.

The areas that contribute to the cedar retention requirements will be calculated by summing the weighted cedar content for the contributing areas, in hectares, based on the inventory mapping for the applicable polygons.

Plan Holders will meet the 15% cedar retention requirement using all of the following strategies:

- a) Areas designated to contribute to the cedar retention requirements will be first be located within no-harvest zones, management zones and stand level retention areas already designated for other objectives.
- b) Where existing cedar reserves are insufficient to meet the cedar retention requirements, then additional cedar retention areas will be retained.
- c) Cedar retention areas will located such that the retention areas are large and contiguous to the extent practicable. Cedar retention areas that contribute to meeting the 15% retention requirement will be > 1.0ha in size.
- d) Within the areas that contribute to the cedar retention requirement, a range of diameters of redcedar and yellow cedar will be retained which are representative of the pre-harvest area, as documented by the signing Forester in the Site Plan documents.

6.11 Where development areas have pre-harvest cedar (western redcedar and yellow cedar) composition greater than 20% in the harvested area, as indicated in the cruise compilation (measured in percent of cedar sph, not including dead potential or dead useless), then the Plan Holder will regenerate the area according to the minimum post-harvest cedar composition and strategies listed below, subject to Section 6.12.

The cedar commitment will be determined on a cutblock by cutblock basis. The cedar regeneration requirement for a cutblock will be calculated by multiplying the NAR times the appropriate Minimum Post-Harvest Cedar Composition, as indicated in Table 8, below. Location of planted cedar within the cutblock will be at the discretion of the prescribing Forester, and consistent with approved stocking standards.

Table 8: Minimum Post-Harvest Cedar Composition, Based on Pre-Harvest Cedar Composition

Pre-harvest Cedar Composition %	Minimum Post-Harvest Cedar Composition (sph)
20-29	100
30-39	150
40-49	175
50-59	200
60-69	250
70-79	300
80-89	350
90-100	400

Plan Holders will use the following strategies to meet the objective:

- a) Plan Holders will strive to meet the cedar commitment through planting and/ or natural regeneration.
- b) Where deer browse hazard is moderate to high, planted cedar trees will be protected. Protection measures may include coning, scented deterrents, or caging.
- c) For areas that have been planted with cedar, where the cedar content falls below 80% of the Minimum Post-Harvest Cedar Composition requirement, the area will be fill-planted once. The cedar content will be assessed using Plan Holder survey information.
- d) Cedar acceptability criteria will be as follows:
 - i) Regenerated cedar will only be accepted if they are of good form and vigour (refer to Appendix B).
 - ii) Regenerated cedar will only be accepted if they are $\geq 1.2\text{m}$ tall.
- e) The cedar regeneration obligation due-date will be no sooner than 6 years, and no later than 20 years, post-harvest commencement. Plan Holders will complete cedar obligation surveys and data will be declared within the Ministry of Forests RESULTS system.

Should the full cedar regen obligation not be fully met at the time of assessment, the amount of cedar regenerated will be accepted, provided that a) through c) from above have been completed, and the obligation will be deemed to have been met, with no further actions required.

6.12 The cedar regeneration requirement for a given cutblock may be lower than those set in Section 6.11 above, provided that the new requirement is consistent with the outcome of a completed intergovernmental process.

Western Yew Retention

LUO s. 8

6.13 Where western yew patches are identified within a development area, they will be protected by establishing stand level retention areas, subject to:

- a) western yew patches may be altered or removed to accommodate operational requirements for road and bridge construction, where no practicable alternative exists.

6.14 Where yew trees are identified within a development area and do not meet the definition of a western yew patch, the trees will be incorporated within stand level retention areas, where practicable.

Cultural Cedar Stands, CMTs and Monumental Cedar

LUO s. 9

- 6.15 Where cultural cedar stands, CMTs, or monumental cedar greater than 120cm (measured at dbh) are identified, they will be retained and a 0.5 tree-length (minimum width) no-harvest zone will be maintained to protect identified feature. The no-harvest zone will be protected by establishing a 1.0 tree-length (average width) management zone, measured from the outer boundary of the no-harvest zone, subject to a), b) and c), below.
- a) Where alteration or removal of a cultural cedar stand, CMT or monumental cedar is required for road access, other infrastructure, or to address a safety concern, and no practicable alternative exists, a Plan Holder may alter or remove the cultural cedar stand, CMT or monumental cedar consistent with the outcome of a completed intergovernmental process, and the harvested CMT or monumental cedar is made available to the Haida Nation.
 - b) Where a reduction in the size of the no-harvest zone is required for road access, other infrastructure, or to address a safety concern, and no practicable alternative exists, a Plan Holder may reduce the area of the no-harvest zone(s) consistent with the outcome of a completed intergovernmental process, and provided the integrity of the cultural cedar stand, CMT or monumental cedar is maintained.
 - c) Where a reduction in the size of the management zone is necessary to address operational constraints or a safety concern, a Plan Holder may reduce the area of the management zone(s) consistent with the outcome of a completed intergovernmental process, and provided the integrity of the management zone is maintained.
- 6.16 Where monumental cedar are identified in a development area, and are not located within a cultural cedar stand and are < 120cm (measured at dbh), they may be harvested, subject to:
- a) the applicable Plan Holder completing an intergovernmental process confirming that the monumental cedar is not required for cultural use; or
 - b) the applicable Plan Holder completing an intergovernmental process confirming that harvesting the monumental cedar is required for road access, other infrastructure, or to address a safety concern and the Plan Holder will make the monumental cedar available to the Haida Nation, or other specific measures will be identified.

Where monumental cedar are harvested under Section 6.16, the greater of 10% (measured in stems per hectare), or one monumental cedar will be retained within the development area.

Aquatic Habitats

Sections 6.17 through 6.33 apply to FDU A.

LUO s. 10, 11

For the purposes of Sections 6.17 through 6.33, the locations of Type I and II fish habitat are as indicated in Schedule 4 of the LUO, unless field assessment indicates otherwise. Where there is a conflict between the LUO and the field assessment as to where the Type I or II fish habitat is located, the field assessment shall prevail.

For the purposes of defining stream riparian classes, the following is provided:

- The riparian no-harvest zone begins at the outer edge of the Type I or II Fish Habitat, including the active floodplain.
- The riparian management zone begins at the outer edge of the riparian no-harvest zone, or if there is no riparian no-harvest zone, the edge of the stream channel bank.

Type I Fish Habitat

LUO s. 10

- 6.17 With reference to individual development areas, where Type I fish habitat occurs, it will be retained and a 2.0 tree-length (minimum width) riparian no-harvest zone, measured from the outer edge of the Type I habitat, will be maintained to protect the Type I fish habitat, subject to all of the following:
- a) Where necessary to address site specific values, the Type I no-harvest zone identified under Section 6.17 above, may be increased or decreased by up to 0.5 tree-lengths, measured from the outer edge of the no-harvest zone, provided that there is no net loss of Type I no-harvest zone area within the development area.
 - b) Within an individual development area, up to 5% of the total area of the Type I habitat no-harvest zone may be altered or removed, provided that:
 - i) the integrity of the Type I fish habitat is maintained; and
 - ii) the alteration or removal is required for road or bridge construction, or to address a safety concern and no practicable alternative exists; or
 - iii) the alteration or removal may be for a purpose other than those listed in Sub-section ii) above, provided the reasons are consistent with the outcome of a completed intergovernmental process.

Type II Fish Habitat

LUO s. 11

- 6.18 With reference to individual development areas, where Type II fish habitat occurs, it will be retained and a 1.0 tree-length (minimum width) riparian no-harvest zone, measured from the outer edge of the Type II habitat, will be maintained to protect the Type II fish habitat. Adjacent the no-harvest zone a 0.5 tree-length (average width) management zone will be established to protect the no-harvest zone, subject to all of the following:
- a) Within an individual development area, up to 5% of the total area of the Type II habitat no-harvest zone may be altered or removed, provided that the integrity of the Type II fish habitat is maintained.
 - b) Within an individual development area, the total area of the Type II habitat management zone may be reduced by up to 20%, measured in hectares.
 - c) The retention of trees within the management zone will be based on consideration of the likelihood of damages to the no-harvest zone caused by windthrow.
- 6.19 Despite Section 6.18 above, the combined area of the Type II habitat no-harvest and management zones may be further reduced, provided:
- a) the reduced area is consistent with the outcome of a completed intergovernmental process; and
 - b) the total amount of mature and old forest in the Type II habitat no-harvest and management zones within the development area is reduced by $\leq 20\%$, measured in hectares; and
 - c) the integrity of the Type II habitat is maintained; and
 - d) an adaptive management plan is developed, documented and implemented prior to reducing the size of the Type II reserve and management zones under Section 6.19.

Active Fluvial Units

LUO s. 12

- 6.20 With reference to individual development areas, where naturally occurring AFUs occur, any forest located within in the AFU will be retained and a 1.5 tree-length (minimum width) management zone, measured from the outer edge of the AFU, will be established to protect the AFU.

- 6.21 Despite Section 6.20 above, within an individual development unit, the amount of mature and old forest within the AFU management zone(s) may be reduced by up to 10%, measured in hectares.
- 6.22 In addition to Section 6.21 above, within an individual development unit, the amount of mature and old forest within the AFU management zone(s) may be reduced by an additional 10%, measured in hectares, provided that:
- a) sufficient functional riparian forest is retained to protect the integrity of the AFU; and
 - b) an adaptive management plan is developed, documented and implemented prior to reducing the size of the AFU management zone(s) under Section 6.22 above.

Upland Stream Areas

LUO s. 13

- 6.23 Within each watershed sub-unit indicated on LUO Schedule 6, and where development areas are proposed by a Plan Holder, the Plan Holders will do the following, subject to Section 6.24, below:
- a) a watershed analysis will be completed by a qualified person that indicates the watershed condition and the upland stream area; and
 - b) Plan Holders will ensure that rates of harvesting within a watershed sub-unit are consistent with the watershed analysis results and that >70% of the forest, measured in hectares, in the upland stream area is hydrologically recovered; and
 - c) the Plan Holders will maintain a group ledger, updated annually at a minimum, that tracks the development activities within watershed sub-units.
- 6.24 Prior to development activities within a watershed sub-unit, the applicable Plan Holders will form an agreement that documents:
- a) who is responsible for completing the watershed analysis and any updates that may be required; and
 - b) how the rates of harvesting will be allocated, consistent with the watershed sub-unit analysis; and
 - c) who is responsible for tracking the rates of harvest within the watershed sub-unit.
- 6.25 Despite Section 6.23, <70% of the forest, measured in hectares, in the upland stream area may be retained, provided that the Plan Holders ensure the following, subject to Section 6.26, below:
- a) the revised upland stream area retention percentage is consistent with the outcome of a completed intergovernmental process; and
 - b) a watershed assessment is completed by a qualified professional that indicates the watershed sub-unit sensitivity to forest development and disturbance; and the amount, type and distribution of forest cover that is required to sustain natural hydrological and fluvial process; and
 - c) the rates of harvesting within a watershed sub-unit are consistent with the watershed assessment results provided in Sub-section 6.25b); and
 - d) an adaptive management plan is developed, documented and implemented prior to reducing the upland stream area retention percentage below 70%, measured in hectares.
- 6.26 Where Plan Holders are proposing to reduce the upland stream retention within a watershed sub-unit, prior to reducing the upland stream area below 70%, measured in hectares, the applicable Plan Holders will form an agreement that documents:
- a) who is responsible to complete the process outlined in Sub-sections 6.25a) through 6.25d) above; and
 - b) how the rates of harvesting will be allocated, consistent with the assessment; and
 - c) who is responsible for tracking the rates of harvest within the watershed sub-unit.

- 6.27 Where upland streams are direct tributaries to Type I or II fish habitat, sufficient vegetation, which may include trees, will be retained to maintain stream bank and channel stability, as determined by a qualified professional.
- 6.28 In upland stream areas, where stream channels are incised, have steep gradients and support riparian plant communities that are dependent on high-humidity microclimates, sufficient trees and vegetation will be retained to maintain said riparian plant community.

Sensitive Watersheds

LUO s. 14

- 6.29 Within each sensitive watershed indicated on LUO Schedule 7, and where development areas are proposed by a Plan Holder, the Plan Holders will do the following:
- a) A watershed analysis will be completed by a qualified person that indicates the watershed ECA condition.
 - b) The Plan Holders will maintain, on an ongoing basis, a group ledger which tracks the development activities within the sensitive watersheds.
- 6.30 Within each sensitive watershed indicated on LUO Schedule 7, and where development areas are proposed by a Plan Holder, harvest rates will be consistent with the following:
- a) For watersheds ≥ 500 ha, up 5% of the watershed area may be harvested in a 5-year period.
 - b) For watersheds < 500 ha, up 10% of the watershed area may be harvested in a 10-year period.
 - c) Despite Sub-sections a) and b) above, no harvesting will occur in sensitive watersheds with an ECA $\geq 20\%$.
 - d) Harvest rates and ECAs will be based on the watershed analysis required under Section 6.29, above.
- 6.31 Prior to development activities within a sensitive watershed, the applicable Plan Holders will form an agreement that documents:
- a) who is responsible for completing the watershed analysis and any updates that may be required; and
 - b) how the rates of harvesting will be allocated, consistent with Section 6.30; and
 - c) who is responsible for tracking the rates of harvest within the sensitive watershed.
- 6.32 Despite Section 6.30 above, for a given sensitive watershed, Plan Holders may maintain a rate of harvest and/ or an ECA that exceeds the thresholds indicated, provided the Plan Holder ensure the following:
- a) the revised rate of harvest and/ or ECA threshold is consistent with the outcome of a completed intergovernmental process; and
 - b) a watershed sensitivity assessment is completed by a qualified professional that indicates the watershed sensitivity to past, current and proposed forest development and disturbance; and the amount, type and distribution of forest cover that is required to sustain natural hydrological and fluvial process; and
 - c) the rates of harvesting within a watershed sub-unit are consistent with the watershed assessment results provided in Sub-section b), above; and
 - d) an adaptive management plan is developed, documented and implemented prior to increasing the rate of harvest and/ or ECA for the watershed.

6.33 Where Plan Holders are proposing to increase the rate of harvest and/ or the ECA, within a given sensitive watershed, prior undertaking the steps required under Section 6.32 above, the applicable Plan Holders will form an agreement that documents:

- a) who is responsible to complete the process outlined in Sub-sections 6.32a) through 6.32d) above; and
- b) how the rates of harvesting will be allocated, consistent with the assessment; and
- c) who is responsible for tracking the rates of harvest within the watershed.

Biodiversity

Sections 6.34 through 6.43 apply to FDU A.

Forested Swamps

LUO s. 15

For clarity, Forested Swamps refer to the following BEC types: CWH wh1 – 12; CWH wh2 – 06; CWH vh2 – 13 (referred to as western redcedar-Sitka spruce/ skunk cabbage ecological communities under the LUO).

- 6.34 With reference to individual development areas, where forested swamp areas ≥ 0.25 ha occur, they will be retained and a 1.5 tree-length (average width) management zone will be established to protect the forested swamp.
- 6.35 Within management zone established under Section 6.34 above, >70% of the forest, measured in hectares, will be retained as mature or old forest.
- 6.36 Despite Section 6.35 above, the amount of mature or old forest retained in the management zone may be reduced to 60%, measured in hectares, provided that:
- a) the amount of mature and old forest retained is sufficient to maintain the integrity of the forested swamp; and
 - b) an adaptive management plan is developed, documented and implemented prior to reducing the percentage of mature and old forest below 70%, measured in hectares.

Ecological Representation

LUO s. 16

- 6.37 Within each Landscape Unit indicated in LUO Schedule 10, and where development areas are proposed by a Plan Holder, prior to development activities the Plan Holders will do the following:
- a) An ecological representation analysis will be completed by a qualified person that indicates the current inventory of old forest by site series and LU.
 - b) For each LU, the applicable Plan Holders will form an agreement that documents:
 - i) who is responsible for completing the ecological representation analysis; and
 - ii) how the required old forest retention will be allocated; and
 - iii) how any required old forest recruitment, consistent with Section 6.40 below, will be allocated; and
 - iv) who is responsible for tracking the old forest retention.
 - c) The Plan Holders will maintain a group ledger, updated annually at a minimum, which tracks the depletions and additions to the old forest inventory by site series and LU.
- 6.38 Where development activities are proposed within a forest area that is classified as a rare or common site-series, consistent with LUO Schedule 10, Plan Holders will retain an amount (measured in hectares) of old forest greater than or equal to the applicable target listed for said site-series in Schedule 10, consistent with Section 6.37 above.

- 6.39 Where practicable, old forest areas that are retained consistent with Section 6.37 above, will include habitat for local species at risk and regionally important wildlife, including, but not limited to:
- a) Northern Goshawk nesting and foraging habitat; and
 - b) Marbled Murrelet nesting habitat, Great Blue heron nesting habitat, and Northern Saw-whet Owl core nesting areas; and
 - c) Black Bear dens and denning habitat.

- 6.40 Where there is insufficient old forest available to meet the requirements under Section 6.38 above, Plan Holders will identify, retain and recruit old forest stands where necessary, through natural processes (passive) and may implement voluntary interventions (active), to meet the representation requirements in the shortest possible timeframe. In order to meet the objective in the shortest possible timeframe, older stands will be chosen before younger stands when identifying recruitment areas.

Strategies that will be used to identify, retain and recruit old forest stands include:

- a) Identifying mature stands (of the appropriate site-series) in the LU that are already constrained for other reasons, and designating them as reserves set aside to meet the ecological representation requirements.
- b) Where there are not enough mature stands (of the appropriate site-series) in the LU that are already constrained for other reasons, unconstrained stands will be identified and designated as reserves set aside to meet the ecological representation requirements.

Where mature stands have been designated as reserves set aside to meet the ecological representation requirements, voluntary management intervention strategies to be used to help recruit old forest stands in the earliest possible timeframe include:

- i) Fertilization treatments, to help accelerate rates of growth and promote old-growth characteristics.
- ii) Stand thinning or stand modification treatments to help accelerate rates of growth and promote old-growth characteristics.

Red and Blue-Listed Ecological Communities

LUO s. 17

- 6.41 With reference to individual development areas, where red or blue-listed ecological communities $\geq 0.25\text{ha}$ occur, they will be retained.
- 6.42 Despite Section 6.41 above, up to 5% of the area of each type of red-listed ecological community occurring in a development area may be altered or harvested if required for road access or to address a safety concern.
- 6.43 Despite Section 6.41 above, up to 30% of the area of each blue-listed ecological community occurring in a development area may be altered or harvested if:
- a) the harvesting is required for road access or to address a safety concern; or
 - b) the harvesting is required for another reason than specified in Sub-section a) above, provided that the harvesting is consistent with the outcome of a completed intergovernmental process.

Wildlife

Sections 6.44 through 6.60 apply to FDU A.

Black Bear Dens

LUO s. 18

- 6.44 With reference to individual development areas, where Black Bear dens occur, they will be retained and a 20m (minimum width) no-harvest zone will be maintained to protect the den. The no-harvest zone will be protected by establishing a 1.0 tree-length (average width) management zone, measured from the outer edge of the reserve zone.
- 6.45 Despite Section 6.44 above, alteration or removal of a Black Bear den or its no-harvest zone, or both may occur, provided that:
- a) the alteration and, or removal is consistent with the outcome of a completed intergovernmental process; and
 - b) the alteration and/ or removal is required for road access or to address a safety concern; and
 - c) the alteration or removal does not occur during the winter hibernation season.
- 6.46 For the purposes of recruiting future Black Bear den sites, where practicable:
- a) suitable western redcedar or yellow-cedar will be retained within the management zone identified in Section 6.44 above; and
 - b) trees, snags, stumps and logs >80cm in diameter will be retained within stand level retention associated with the development area.
- 6.47 Despite Section 6.44 above, alteration or removal of trees within the management zone may occur, outside of the winter hibernation season, consistent with any of the following:
- a) the alteration and/ or removal is required to accommodate operational requirements for road or bridge construction and no practicable alternative exists; or
 - b) for any existing road under active tenure, the alteration and/ or removal is required to accommodate: road maintenance, deactivation, the removal of danger trees, brushing and clearing within a right-of-way, for safety purposes; or
 - c) the alteration and/ or removal is required to mitigate the impact of windthrow.

Marbled Murrelet Nesting Habitat

LUO s. 19

- 6.48 Within each Landscape Unit, and where development areas are proposed by a Plan Holder, prior to development activities, the Plan Holders will:
- a) retain an amount of Marbled Murrelet nesting habitat within each LU greater than or equal to the LU target area listed in LUO Schedule 9; and
 - b) ensure the nesting habitat referred to in Sub-section a) above, is within the areas shown in LUO Schedule 11; or may be a different area than identified in LUO Schedule 11, provided the nesting habitat is Class 1 or 2, as identified by a qualified professional; and
 - c) maintain a group ledger, updated annually at a minimum, which tracks the depletions and additions to the Marbled Murrelet nesting habitat retention inventory, by LU.

- 6.49 For each LU, and where development areas are proposed by a Plan Holder, the applicable Plan Holders will do the following, prior to development activities within the applicable LU:
- a) a Marbled Murrelet nesting habitat retention inventory will be completed; and
 - b) Applicable Plan Holders will form an agreement that documents how the required Marbled Murrelet nesting habitat retention will be allocated and who is responsible for tracking the nesting habitat retention within the LU, as indicated in Section 6.48c), above.

Northern Goshawk Habitat

LUO s. 20

- 6.50 Plan Holders will retain all Northern Goshawk reserves as shown on LUO Schedule 12.
- 6.51 Where a Plan Holder discovers a potential Northern Goshawk nest that outside of the LUO Schedule 12 reserves, the Plan Holder will do all of the following:
- a) cease harvesting and road-building activities within 800m of the potential nest immediately and report the location of the potential nest to the Council of the Haida Nation and the Province of BC as soon as practicable; and
 - b) have the nest and surrounding area assessed by a qualified professional; and
 - c) where the qualified professional determines the nest to be a Northern Goshawk nest, a no-harvest zone will be established around the nest site, that is a minimum of 200ha and that maximizes the best available nesting and foraging habitat available, to protect the integrity of the nest site, consistent with the assessment and recommendations of a qualified professional; and
 - d) the location of the confirmed nest will be reported to the Council of the Haida Nation and the Province of BC as soon as practicable; and
 - e) unless the nest is confirmed by a qualified professional to be inactive during the Northern Goshawk breeding season (reconfirmed annually), a restricted activity zone will be maintained during the breeding season, with a minimum radius of 800m around the nest site.
- 6.52 Despite Sections 6.50 and 6.51 above, Northern Goshawk reserves (LUO Sch. 12) and no-harvest zones may be reduced, provided that:
- a) the reduction is consistent with the outcome of a completed intergovernmental process; and
 - b) the reduction is required for road access, where no practicable alternative exists, or to address a safety concern; and
 - c) the reduction does not occur during Northern Goshawk breeding season; and
 - d) there is no net loss to the Northern Goshawk reserve area.

Great Blue Heron Nesting Habitat

LUO s. 21

- 6.53 With reference to individual development areas, where Great Blue Heron nest sites occur they will be retained and a 350m (minimum width) no-harvest zone, measured from the edge of the nest site, will be maintained to protect the nest site. Additionally, the no-harvest zone will be $\geq 45\text{ha}$ in size.
- 6.54 Where a Plan Holder discovers a new potential Great Blue Heron nest site, the Plan Holder will:
- a) cease harvesting and road-building activities within a 350m radius of the potential nest immediately and report the location of the potential nest to the Council of the Haida Nation and the Province of BC as soon as practicable; and
 - b) have the nest and surrounding area assessed by a qualified professional; and
 - c) where the qualified professional determines the nest to be a Great Blue Heron nest, a no-harvest zone will be established consistent with 6.53 above; and
 - d) the location of the confirmed nest will be reported to the Council of the Haida Nation and the Province of BC as soon as practicable; and
 - e) unless confirmed by a qualified professional to be inactive three consecutive years during the Great Blue Heron Breeding season (reconfirmed annually), a restricted activity zone will be maintained during the breeding season, with a minimum radius of 150m measured from the edge of the no-harvest zone.

Northern Saw-whet Owl Nesting Habitat

LUO s. 22

- 6.55 Plan Holders will retain all Northern Saw-whet Owl reserves, as shown on LUO Schedule 12.
- 6.56 Where a Plan Holder discovers a new potential Northern Saw-whet Owl nest that outside of the LUO Schedule 12 reserves, the Plan Holder will:
- a) cease harvesting and road-building activities within a 180m radius of the potential nest immediately and report the location of the potential nest to the Council of the Haida Nation and the Province of BC as soon as practicable; and
 - b) have the nest and surrounding area assessed by a qualified professional; and
 - c) where the qualified professional determines the nest to be a Northern Saw-whet Owl nest, a no-harvest zone will be established around the nest site that is a minimum of 10ha and centred on the nest; and
 - d) the location of the confirmed nest will be reported to the Council of the Haida Nation and the Province of BC as soon as practicable.
- 6.57 Where practicable, Northern Saw-whet Owl core nesting areas will be identified and retained within stand level retention and other no-harvest or management zone areas and distributed across the landscape, with a target maximum inter-patch spacing of 1,400m.

Forest Reserves

Areas Reserved to Meet Landscape Level Objectives

LUO s. 23

6.58 Plan Holders will retain all the Forest Reserves, as shown on LUO Schedule 8.

6.59 Despite Section 6.58 above, the area of an individual Forest Reserve may be reduced by up to 5%, provided that:

- a) applicable results and strategies within this FSP address the target requirements indicated in LUO Schedules 9 and 10; and
- b) the remaining Forest Reserve is $\geq 5.0\text{ha}$; and
- c) the reduction is necessary to:
 - i) accommodate operational requirements for road or bridge construction, where no practicable alternative exists; or
 - ii) accommodate road maintenance, deactivation, removal of danger trees, brushing and clearing within a right-of way, or for safety purposes, on any existing road under active tenure; or
 - iii) to mitigate the impact of windthrow.

6.60 Despite Section 6.58 above, a portion of a Forest Reserve may be moved to another location within the same Landscape Unit, provided that:

- a) the alteration of the Forest Reserve is consistent with the outcome of a completed intergovernmental process; and
- b) applicable results and strategies within this FSP (i.e., Marbled Murrelet and Ecological Representation) address all of the target requirements indicated in LUO Schedules 9 and 10 for the applicable LU; and
- c) the portion removed is $\leq 20\text{ha}$; and
- d) the areas retained are $> 200\text{m}$ in width; and
- e) the relocation does not result in any Forest Reserve that is $< 5.0\text{ha}$; and
- f) the relocation follows the recommendations of an assessment completed by a qualified professional which focuses on identifying candidate reserve areas consistent with meeting the LUO objectives established for Marbled Murrelet nesting habitat and ecological representation.

Recruitment in No-harvest Zones, Management Zones & Stand Level Retention

Section 6.61 applies to FDU A.

LUO s. 5, 6, 10, 11, 15 and 20

6.61 Where some or all of the no-harvest zones, management zones or stand level retention areas established under the applicable LUO objectives (refer to Table 9, below) have been previously altered or harvested, the Plan Holders will provide for recruitment of mature and old forest (functional riparian forest for Sections 6.17, 6.18, 6.20) in the no-harvest zone, management zone or stand level retention area, as applicable, through natural processes (passive recruitment) and may promote recruitment through voluntary interventions (active recruitment).

For the management zones associated with Cultural Cedar Stands, CMTs and Monumental Cedar, the Plan Holders will maintain or recruit, in the shortest possible timeframe, at least 90% of the forest as mature and old forest, through natural processes (passive) and may promote recruitment through voluntary interventions (active). Where the recruitment strategy is to use natural processes (passive), Plan Holders will not harvest any of the existing mature or old forest in the management zone until the 90% threshold has been attained.

Table 9: Recruitment Summary Table, by LUO Objective

Objective Requiring Recruitment	Recruitment Location	FSP Section Reference
Class 1 HTHFs	No-harvest Zone	6.5
Class 2 HTHFs	No-harvest Zone	6.6
Class 1 HTFFs	No-harvest Zone	6.7
Class 2 HTFFs	Applicable Stand Level Retention	6.8
Class 3 HTFFs	Applicable Stand Level Retention	6.9
Cultural Cedar Stands, CMTs & Monumental Cedar	Management Zones	6.15
Type I Fish Habitat	Type I Fish Habitat & No-harvest Zone	6.17
Type II Fish Habitat	Type II Fish Habitat & No-harvest Zone	6.18
Active Fluvial Units	Active Fluvial Unit & Management Zone	6.20
Forested Swamps	Management Zone	6.34
Existing Northern Goshawk Reserves	Reserve	6.50
New Northern Goshawk nesting No-Harvest Zones	No-harvest Zone	6.51

Annual Reporting and Data Submission

Section 6.62 applies to FDU A.

LUO s. 5, 6, 7, 8, 9, 10, 11, 12, 15, 16, 17 and 23

6.62 Where applicable features prescribed under the LUO are identified (refer to Table 10, below), and associated no-harvest zone (including cedar reserves), management zones and stand level retention are established or managed by a Plan Holder, the feature(s) and associated no-harvest zones, management zones and stand level retention will be documented and the digital spatial data will be submitted by said Plan Holder by December 31st of each year to the Council of the Haida Nation and to the Province of BC.

Table 10: Summary for LUO Objectives Requiring Annual Reporting and Data Submission

Objective Requiring Annual Reporting & Data Submission	Reporting Element	FSP Section Reference
Class 1 HTHFs	HTHF & No-harvest Zone	6.5
Class 2 HTHFs	HTHF & No-harvest Zone	6.6
Class 1 HTFFs	HTFF & No-harvest Zone	6.7
Class 2 HTFFs	HTFF & applicable Stand Level Retention	6.8
Class 3 HTFFs	HTFF & applicable Stand Level Retention	6.9
Cedar Retention	Cedar Retention Areas	6.10
Western Yew Retention	Western Yew Patches, individual yew tree retention, & applicable stand level retention	6.13, 6.14
Cultural Cedar Stands, CMTs & Monumental Cedar	Cultural Cedar Stands, CMTs, Monumental Cedar, Reserves, No-harvest Zones & Management Zones	6.15, 6.16
Type I Fish Habitat	Type I Fish Habitat, No-harvest Zone & applicable Management Zone	6.17
Type II Fish Habitat	Type II Fish Habitat, No-harvest Zone & Management Zone	6.18, 6.19
Active Fluvial Units	Active Fluvial Unit & Management Zone	6.20, 6.21, 6.22
Forested Swamps	Forested Swamp & Management Zone	6.34
Ecological Representation	Old Forest Reserves	6.38
Red & Blue-listed Plant Communities	Red & Blue-listed Plant Communities	6.41, 6.42, 6.43
Black Bear Dens	Black Bear Dens (existing & newly discovered)	6.44
Forest Reserves	Forest Reserves	6.59, 6.60

Objectives Prescribed Under FRPA

FRPA s. 149; FPPR s. 5-10

Sections 6.63 through 6.76 apply to FDU A.

Soils

FPPR s. 5 (not subject to approval)

6.63 The Plan Holders undertake (FPPR s. 12.1(1)) to comply with the legislated requirements setting limits for soil disturbance and for permanent access structures as outlined in FPPR s. 35 and 36.

Riparian Areas

FPPR s. 8

Stream Riparian Classes

FPPR s. 47

Stream riparian classes and associated riparian reserve and management zones are as defined under the LUO and addressed under the Sections 6.17 through 6.19, and 6.23 through 6.28 above, as well as Section 6.66, below.

As the LUO does not specify an RMA width for Upland Streams, for the purposes of Sections 6.66 and 6.68 below, the RMZ/ RMA width will be 30m.

Wetland Riparian Classes

FPPR s. 48

6.64 Where a wetland meets the definition of Type I or II Fish Habitat, as defined in the LUO, then the wetland is classed as Type I or II Fish habitat and managed accordingly, otherwise, Plan Holders adopt the FPPR requirements in relation to wetland riparian classes and minimum zone widths.

Lake Riparian Classes

FPPR s. 49

6.65 Where a lake meets the definition of Type I or II fish habitat, as defined in the LUO, then the lake is classed as Type I or II Fish habitat and managed accordingly, otherwise Plan Holders adopt the FPPR requirements in relation to lake riparian classes and minimum zone widths.

Restrictions in a Stream, Wetland or Lake Riparian Management Area

FPPR s. 50

6.66 For Type I fish habitat, Type II fish habitat, upland streams; and wetlands and lakes that do not meet the definition of Type I or II fish habitat, as defined in the LUO; Plan Holders adopt the FPPR requirements in relation to restrictions within a riparian management area.

Restrictions in a Wetland or Lake Riparian Reserve Zone

FPPR s. 51

6.67 For wetlands and lakes that do not meet the definition of Type I or II fish habitat, as defined in the LUO, Plan Holders adopt the FPPR requirements in relation to restrictions within a riparian reserve zone.

Retention of Trees within the Riparian Management Zones

FPPR s. 12(3)

6.68 Retention of trees within riparian management zones will be as follows:

- a) For Type I and Type II fish habitat, the retention of trees within riparian management zones is detailed in Sections 6.17 and 6.18, above, respectively.
- b) For Upland Streams, the retention of trees within riparian management zones, measured in basal area, will range from 0-100%, as deemed appropriate by the signing Forester and documented within the Site Plan. Additional factors for riparian retention for Upland Streams are detailed in Section 6.27 and 6.28, above.
- c) For wetlands and lakes that do not meet the definition of Type I or II fish habitat, as defined in the LUO, with respect to FPPR s. 12(3), unless specific wildlife and/ or biodiversity values are identified in the riparian management area of a wetland or lake, retention of trees within the RMZ will be based on consideration of the likelihood of damages to the riparian feature or RRZ caused by windthrow. Basal area retention will range from 0-100%, as deemed appropriate by the signing Forester and documented within the Site Plan.

Community Watersheds

FPPR s. 8.2

6.69 Prior to proposing primary forest activities within a community watershed to which section 8.2 of the FPPR applies, the Plan Holders will do all of the following:

- a) ensure a watershed assessment is completed by a qualified professional that assesses the current watershed condition; the potential impacts on water quality, water quantity, including risks to public health, and timing of water flows from primary forest activities; and provides a potential schedule for harvesting within the community watershed that maintains the community watershed's values; and
- b) ensure that primary forest activities are consistent with any recommendations made in the watershed assessment, and
- c) ensure the watershed assessment indicated in Sub-section a) above, is updated by a qualified professional at least every five years, unless no additional primary forest activities are proposed; and
- d) maintain a group ledger, updated annually at a minimum, which tracks the development activities within the community watershed.

6.70 Prior to development activities within a community watershed, the applicable Plan Holders will form an agreement that documents:

- a) who is responsible for completing the watershed assessment and any updates that may be required; and
- b) how the rates of harvesting will be allocated, consistent with the watershed analysis; and
- c) who is responsible for tracking the rates of harvest within the community watershed.

Wildlife & Biodiversity – Landscape Level

FPPR s. 9

Maximum Cutblock Size

FPPR s. 64

6.71 The Plan Holders undertake (FPPR s. 12.1(3)) to comply with the legislated requirements in relation to maximum cutblock size (FPPR s. 64).

Adjacency

FPPR s. 65

6.72 The Plan Holders undertake (FPPR s. 12.1(3)) to comply with the legislated requirements in relation to harvesting adjacent to another cutblock (FPPR s. 65), subject to Section 6.73, below.

6.73 As per FPPR sec. 12.4(2), the Plan Holders will adhere to FPPR s. 65 for all areas within FDU A, with the following exceptions, which will only apply to the Plan Area within the Eden Lake Landscape Unit, as shown on LUO Schedule 1:

- a) Section 65 (3)(a) is replaced with: at least 75% of the net area to be reforested of the existing cutblock is stocked such that the average height of the well-spaced trees is a minimum of the free growing height as specified in the approved Stocking Standards, located in Appendix C; and
- b) Section 65 (3)(b)(ii) is stocked such that the average height of the well-spaced trees is a minimum of the free growing height as specified in the approved Stocking Standards, located in Appendix C.

Wildlife & Biodiversity – Stand Level

FPPR s. 9.1

Wildlife Tree Retention and Harvest Restrictions

FPPR s. 66, 67 (not subject to approval)

6.74 The Plan Holders undertake (FPPR s. 12.1(4)) to comply with the legislated requirements in relation to wildlife tree retention (FPPR s. 66) and restriction on harvesting in a wildlife tree retention area (FPPR s. 67). In regards to the FPPR requirements for wildlife tree retention, each Plan Holder is individually responsible for meeting the requirements and tracking their wildlife tree retention areas.

Cultural Heritage Resources

FPPR s. 10

In addition to the requirements established under Sections 6.1 to 6.16 above, the Plan Holders will implement the results and strategies listed in Sections 6.75 to 6.76, below.

Information Sharing

- 6.75 The FSP Holders will, at a minimum of once annually, provide the Council of the Haida Nation with an opportunity to share information regarding cultural heritage resources that are the focus of traditional use and continued importance to the Haida Nation. Plan Holders will:
- a) identify areas where harvesting and/ or road construction activities are planned and request information respecting cultural heritage resources that are the focus of traditional use and continued importance within the identified areas; and
 - b) keep a record of any information provided by the Haida First Nation on cultural heritage resources that are the focus of traditional use and continued importance within the Plan Area; and
 - c) document how management activities will attempt to accommodate cultural heritage resources that are the focus of traditional use and continued importance, or why efforts to accommodate the traditional use were not made.

Development Area Referral

6.76 The FSP Holders will submit maps for all proposed development areas to the Council of the Haida Nation, 30 days prior to cutting authority submission, or 30 days prior Timber Sale posting/ approval by the BC Timber Sales Manager.

Objectives Established Under Regulation (GAR)

Sections 6.77 through 6.82 apply to FDU A.

Visual Quality

FPPR 9.2, GAR s. 7(2), FRPA s. 180, 181

Visual Quality Objectives (VQO's)² have been established for the Scenic Areas on the Haida Gwaii (mapping consolidated for TSA and TFLs on December 5, 2005).

6.77 The Plan Holders will conduct road construction or timber harvesting activities within Scenic Areas such that they conform to the established VQO's, unless it is for the following exceptional circumstances beyond the control of the Plan Holders:

- a) it is to recover timber damaged from natural causes and the action must be completed expeditiously; or
- b) the activities are otherwise required by government.

If harvesting and/ or road building occurs and the VQO is exceeded, as per subsections a), or b) above, then the Plan Holder will ensure that good design principles are followed and the VQO is exceeded to the minimum amount required.

Recreation Resources

FRPA s. 180, 181

As of the date of Plan submission, there are five recreation sites and four recreation trails established (no interpretive sites established), with designated objectives, within the Plan Area, (refer to Table 2, above).

6.78 Prior to proposing timber harvest or road construction in an area adjacent to a designated recreation site or trail with established objectives, the Plan Holder will consult with the government agency responsible for the recreation site or trail, to ensure that the proposed activity will be conducted in accordance with the established objectives applicable to the area.

6.79 Where "non-motorized access" is the applicable established objective for the designated recreation site or trail, and proposed new road construction will provide motorized access to the recreation resource, the Plan Holder will:

- a) deactivate the road, within one year following completion of primary forest activities, to a condition which re-establishes the degree of motorized access similar to that which existed prior to harvest operations; or
- b) obtain written approval from the government agency responsible for the recreation site or trail, to maintain access for further operations or activities, and the access will be established as per the approval.

² For clarity, definitions for the VQOs (Preservation, Retention, Partial Retention, Modification and Maximum Modification) are taken to be the same as those provided for similarly named categories of visually altered forest landscapes, in FPPR s.1.1.

Resource Features

GAR s. 5 (excluding Cultural Heritage or Recreation Resources) – not subject to approval

Karst Resource Features have been established (effective September 15, 2006) for the Haida Gwaii Forest District. The order identifies the following surface or subsurface elements of a karst system as Resource Features:

- karst caves, and
- significant surface karst features, and
- very high or high vulnerability karst terrain

“Karst Features” have also been identified as Class 2 Haida Traditional Heritage Features within the LUO.

6.80 Where karst Resource Features are encountered during primary forest activities, they will be managed as per Section 6.6 above. Regardless of the outcome of the inter-governmental process, karst Resource Features will not be damaged or rendered ineffective, consistent with FPPR s. 70 (1).

Other Items

Wildlife Habitat Areas and General Wildlife Measures

FPPR s. 9, 69 (not subject to approval)

Marbled Murrelets (WHAs)

Two WHAs (for Marbled Murrelets) have been established within the Plan Area by Order of the Minister (6-041 and 6-046), established April 7, 2003.

6.81 In respect of the WHAs, the Plan Holders will comply with the applicable GWMs, as per FPPR s. 69.

Queen Charlotte/ Northern Goshawk (WHAs)

Two WHAs (for Queen Charlotte/ Northern Goshawk) have been established within the Plan Area by Order of the Minister (6-001 and 6-002), established September 13, 2001 and May 14, 2003 respectively.

6.82 In respect of the WHAs, the Plan Holders will comply with the applicable GWMs, as per FPPR s. 69.

7.0 Measures for Invasive Plants

FRPA s. 47; FPPR s. 17

Sections 7.1 through 7.8 apply to FDU A.

Table 11: Invasive Plants known to occur in the Plan Area, including high-priority species

Common Name	Scientific Name	High Priority Invasive Plant Species on the Haida Gwaii?
Gorse	<i>Ulex europaeus</i>	Y
Scotch Broom	<i>Cytisus scoparius</i>	Y
Japanese Knotweed	<i>Polygonum cuspidatum</i>	Y
Yellow Flag Iris	<i>Iris pseudacorus</i>	Y
Common Tansy	<i>Tanacetum vulgare</i>	Y
Meadow Hawkweed	<i>Hieracium pilosella</i>	Y
Orange Hawkweed	<i>Hieracium aurantiacum</i>	Y
Marsh Plume Thistle	<i>Cirsium palustre</i>	Y
Tansy Ragwort	<i>Senecio jacobaea</i>	Y
Himalayan Knotweed	<i>Polygonum polystachyum</i>	Y
Spotted Hawkweed	<i>Hieracium maculatum</i>	Y
Canada Thistle	<i>Cirsium arvense</i>	
Bull Thistle	<i>Cirsium vulgare</i>	
Common Burdock	<i>Arctium minus</i>	
Oxeye Daisy	<i>Chrysanthemum leucanthemum</i>	

Where the introduction or spread of invasive plants is likely the result of forest practices of a Plan Holder, the Plan Holder will do the following, unless the Plan Holder deems the area to be an active running surface:

Training

- 7.1 Provide appropriate personnel training in the recognition of invasive plants that are, or may potentially be within (i.e., known to occur in adjacent areas) the Plan area. Training will include the use of the provincial IAPP application, map display and Report-A-Weed form and procedures.

Monitoring & Reporting

- 7.2 Monitor for the presence of invasive plant species during forest development fieldwork, silviculture surveys, routine inspections and general travel. Where new invasive plant incidences are identified, they will be reported within 30 days to the NWIPC, or by filing a report in the IAPP application directly.
- 7.3 Where new occurrences of invasive plants are detected (either a newly introduced plant species, or a new location of a plant species known to already exist within the Plan Area), the site will be assessed by trained personnel. Where practicable, an appropriate action plan will be prepared and implemented to address the invasive plant occurrence. Action plans may include working with government agencies to develop and implement an eradication or management plan.

Sanitation & Disposal

- 7.4 Recommend their logging and road building contractors to inspect vehicles and equipment, particularly tracks and undercarriages, for the presence of plant parts and that equipment be cleaned prior to leaving an area that is known to contain priority invasive plant species.
- 7.5 Where invasive plant material is disposed of it will be disposed of in a landfill or by burning, to the extent practicable.

Re-vegetation

- 7.6 For newly (after the date of Plan commencement) developed areas (roads and cutblocks) that result in exposed mineral soils (where contiguous area is greater than 0.1ha, with a contiguous minimum width of 5m, excluding the running surface of a road), the Plan Holder will do the following:
- a) re-vegetate the exposed area as climatic and soil conditions allow and within one year of disturbance, if:
 - i) the disturbed area is not to be reforested and is not the running surface of a road; and
 - ii) the soil disturbance is likely to result in the introduction or spread of the established invasive plants; and
 - iii) re-vegetating the site will materially reduce that likelihood of the spread of the invasive plants.
 - b) monitor the seeded areas for one year from the date of initial seeding to determine if the seed germinates to the extent necessary to occupy the areas of exposed soil; and
 - c) if within one year of the area being initially seeded, the seed does not germinate to the extent necessary to occupy the areas of exposed soil, the Plan Holder will re-seed the area as soon as practicable. Where seeding alone is not successful, fertilization and scarification treatments will be considered, where feasible.
- 7.7 For re-vegetation, Plan Holders will use Common No. 1 Forage Mixture (according to Canada's Seeds Regulations), or better.

Roadside Brushing

- 7.8 Where practicable, Plan Holders will modify roadside brushing treatment methods/ procedures to minimize the spread of established invasive plants (e.g., alter timing or method).

8.0 Stocking Standards

FRPA s. 29, FPPR s. 16, 44

Sections 8.1 through 8.5 apply to FDU A.

Stocking Standards - General

FPPR s. 44

- 8.1 FPPR s. 44(1) applies in all situations or circumstances under the Plan where a free growing stand is required to be established under FRPA s. 29.
- 8.2 For the purposes of FPPR s. 44(1a) and (b), Appendices C and D specify the regeneration date, free growing height and stocking standards for the situations or circumstances where FPPR s. 44(1) applies.

Stocking Standards for development areas with Free Growing obligations have been provided in Appendices C and D. Stocking standards are to be assigned and documented within Site Plans, by the prescribing Forester.

Special Forest Products Stocking Standards

FPPR s. 16(4)

Plan Holders may implement programs for special forest products, including shake, shingle, cant, and whole logs. The special forest products programs will involve the harvest of dead and down wood only. Plan Holders will implement the special forest products programs under designated salvage permits or licenses.

- 8.3 Where harvesting of special forest products (FPPR s. 44(3)(i)) occurs, stocking standards will be applied as follows:
- a) Where areas are subject to a Site Plan and associated stocking standards, the designated standards will be implemented or maintained.
 - b) Where there is no Site Plan, the following standards will apply to the area:
 - i) the harvest activities will not cause the total yield for the standards unit to be less than the yield had the harvesting not occurred; and
 - ii) at the conclusion of the harvesting, a species composition will be retained in the standards unit that is substantially the same as the species composition of the standards unit immediately prior to the harvesting; and
 - iii) at the conclusion of the harvesting, leave tree health and vigour in the standards unit will be substantially the same as it was immediately prior to the harvesting.

There are no reforestation requirements for special forest products cutting. Justification for the special forest products cutting will be documented within the Site Plan (where a Site Plan is required).

Single Entry Dispersed Retention System Stocking Standards

- 8.4 In circumstances where non-timber values and objectives are the primary management focus, the Single Entry Dispersed Retention System standard may be applied including:
- Where Visual Quality Objectives are Preservation, Retention or Partial Retention
 - Where Terrain Stability is an over-riding concern
 - Where wind-firmness is an over-riding concern
 - Where riparian management is the primary objective
 - Where the clear-cut with reserves silviculture system is precluded due to constraints related to the LUO
 - Where habitat enhancement is the primary objective
 - Where protection of resource features is the primary objective
 - Where forest ecosystem restoration or enhancement is the primary objective

Where Plan Holders implement the SEDRS stocking standard, on an annual basis, the area harvested under the SEDRS standard will not exceed 10% of the AAC for FDU A, apportioned amongst the Plan Holders proportional to their respective AACs.

In order to address the silvicultural obligations associated with these situations, the Single Entry Dispersed Retention System stocking standard has been included (Appendix D).

Management objectives for areas where the Single Entry Dispersed Retention System is applied should be duly noted in the Site Plan and supporting documents prior to harvesting activities. The Single Entry Dispersed Retention System is only applicable to conifer management, not hardwoods.

Sampling procedures for the single entry dispersed retention system have been included to ensure that these standards are not applied in inappropriate circumstances. Specifically, these standards are to be applied where the residual basal area within a selected harvest area is >5 to <40 m^2/ha and the contiguous opening size is $\geq 1.0\text{ha}$ in size.

Stocking Standard Application

For clarity, Table 12 below has been provided to help illustrate the instances where the Even Aged and Single Entry Dispersed Retention standards are to be applied.

Table 12: Stocking Standards Application

Contiguous Opening Size for Standard Unit (ha)	Standard Unit Basal Area Retention (m^2/ha)	Applicable Stocking Standard
0.1 - 0.9	> 5 to < 40	SEDRS
0.1 - 0.9	≤ 5	Even-Aged ³
≥ 1.0	≥ 40	-
≥ 1.0	> 5 to < 40	SEDRS
≥ 1.0	≤ 5	Even-Aged

Standards Applying to Pre-FSP Plans and Prescriptions

FRPA s. 197

- 8.5 For cutblocks where stocking standards set out in the Code or in a pre-Code prescription would otherwise apply (including a Site Plan, Silviculture Prescription or Pre-harvest Silviculture Prescription), the FSP Holder may elect to, for the purposes of otherwise specifying stocking standards under FRPA s. 197(4, 5 or 7) within an FDU as specified by FPPR s. 14(1)(d or e) and where ecologically appropriate, have stocking standards approved under this Plan apply to standards units within such cutblocks. For each standards unit, this election is to be made⁴ prior to the previously specified Late Free Growing date by electronically updating the Ministry's RESULTS system to indicate the replacement FSP standard and providing notice to the Ministry of Forests, Haida Gwaii Forest District (by way of e-mail or some similar method).

³ Where a small opening (0.1-0.9ha) is associated with a larger partial cut standard unit, the SEDRS standard may apply.

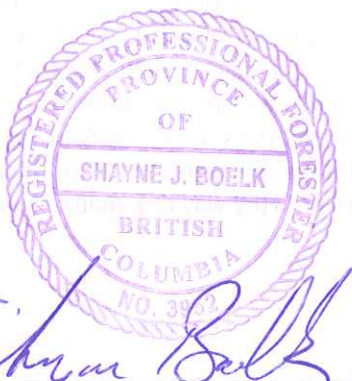
⁴ The official date of change (i.e., the date the new standards will apply) will be the date of notice submission to the MOF.

9.0 Signatures of Persons Required

Plan Holders & Authorized Plan Holder Signatures

Plan Holder	Authorized Signatory & Title	Signature	Date
Taan Forest LP 318 – 470 Granville Street Vancouver, BC V6C 1V5 Ph: (778) 785-0124 Fx: (800) 930-2118	David Byng, RPF General Manager		<u>November 18, 2011</u>
Husby Group 6425 River Road Delta, BC V4K 5B9 Ph: (604) 940-1234 Fx: (604) 940-1236	Jonathan Fane, RPF VP Forestry & Engineering		<u>November 18, 2011</u>
BC Timber Sales – Chinook Business Area 46360 Airport Road Chilliwack, BC V2P 1A5 Ph: (604) 702-5723 Fx: (604) 702-5711	Steve deMelt, Timber Sales Manager		<u>November 18, 2011</u>
Teal Cedar Products Ltd. 17897 Trigg Road Surrey, BC V4N 4M8 Ph: (604) 587-8700 Fx: (604) 581-4104	Robert Sandberg, RPF Divisional Forester		<u>November 18, 2011</u>

Signing Forester



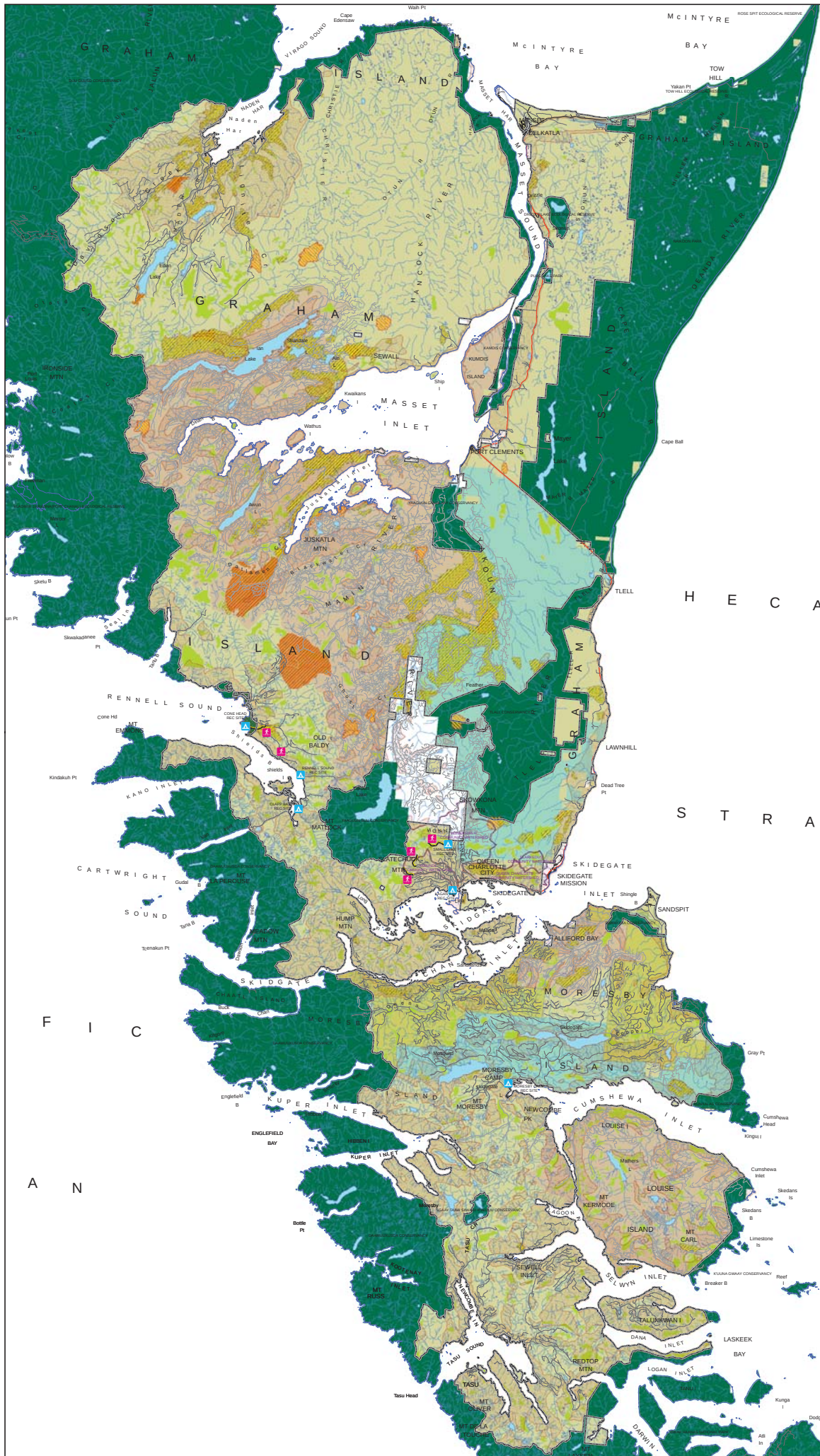
Shayne J. Boelk, RPF – Consulting Forester
Zimmfor Management Services Ltd.

Date: November 18, 2011

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 supervise the Work.

Appendix A: FSP Map

Forest Stewardship Plan



- Forest Development Unit A
- TFL 58
- TFL 60
- FLTC A87661
- Haida Gwaii TSA
- Scenic Area
- Wildlife Habitat Areas
- Community Watersheds
- LUO Schedule 3 - Cedar Stewardship Areas
- LUO Schedule 8 - Forest Reserves
- LUO Schedule 12 - NOGO Reserves
- LUO Schedule 12 - NSWO Reserves
- Recreation Sites and Reserves
- Recreation Trails
- Protected Areas
- Highway
- Paved Road
- Gravel Road



Map Date Nov 18, 2011

1:150,000

Albers Equal Area Conic Projection, NAD 83

Disclaimer

Although we take great care in the preparation of this information and are confident that it is accurate, we do not give any warranty as to its accuracy or suitability for any purpose that it might be used for. Users assume the risk associated with the accuracy and results of the contents of this document.

Map Notes

Map contents are for illustration purposes only and are representative of data captured from varying sources using differing scale and accuracy. Exact locations of specific map features or in relation to adjacent or corresponding features should be determined on the ground.

In many instances, only information pertinent to the FSP and more specifically to the Forest Development Unit has been displayed on the map. Information that does not intersect the Forest Development Unit may not be shown.



TEAL CEDAR PRODUCTS LTD.

Appendix B: Cedar Regeneration (and Free Growing) Acceptability Criteria

Table A5-1. Continued

Location of damage	Type of damage	Tree being assessed is UNACCEPTABLE if:	Host species	Likely damage agents & damage agent codes	Comments
Branch	Gouting	<ul style="list-style-type: none"> any adelgid gouting occurs on a branch. 	Ba, Bg, Bl	balsam woolly adelgid IAB.	Gouting is defined as excessive swelling of a branch or shoot caused by balsam woolly adelgid, and is often accompanied by misshapen needles and buds. It is most common on branch tips and at nodes near the ends of branches. Consult a recent distribution map to identify the geographic extent of this pest.
Foliage	Defoliation	<ul style="list-style-type: none"> >80% of tree foliage has been removed due to defoliating insects or foliage disease. 	All	defoliators ID, foliage diseases DF.	
Stem or Branch	Dwarf mistletoe infection	<ul style="list-style-type: none"> any infection occurs on the stem or a live branch, or a susceptible tree is located within 10 m of an overtopping tree, which is infected with dwarf mistletoe. 	Hw, Pl, Lw, Fd	hemlock dwarf mistletoe DMH, lodgepole pine dwarf mistletoe DMP, larch dwarf mistletoe DML, Douglas-fir dwarf mistletoe DMF.	<p>Note: To confirm infection, the surveyor must observe mistletoe aerial shoots or basal cups on regeneration or on live or dead fallen brooms.</p> <p>Overtopping tree is a tree that is three or more times taller than the median height of the trees being assessed.</p>
Roots	Root disease	<ul style="list-style-type: none"> sign(s) or a definitive combination of symptoms of root disease are observed. infected tree found in plot. See comments for well-spaced tree net down calculation. The multiplier for DRA is two, except in BEC zones PPdh1 and 2, IDFxh1, IDFdm1 and 2, MSdk1, and MSdm1 where the multiplier is one. infected conifer found in plot. See comments for well-spaced tree net down calculation. The multiplier for DRL is four. infected conifer or stump found in plot. See comments for well-spaced tree net down calculation. The multiplier for DRT is two. infected conifer found in plot. See comments for well-spaced tree net down calculation. The multiplier for DRN is two. 	All	<p>armillaria root disease DRA, laminated root rot DRL, tomentosus root rot DRT, annosus root disease DRN, blackstain root disease DRB.</p> <p>armillaria root disease DRA.</p>	<p>Signs are direct evidence of the pathogenic fungus including fruiting bodies, distinctive mycelium or rhizomorphs.</p> <p>Symptoms include foliar chlorosis or thinning, pronounced resin flow near the root collar, reduced recent leader growth, a distress cone crop, and wood decay or stain. An individual symptom is not sufficient to identify a root disease.</p> <p>Note: All conifer species are considered susceptible. Broadleaf species are considered not susceptible for survey purposes only.</p> <p>Example: How to apply net down for root disease.</p> <p>If root disease-infected trees are found in the plot:</p> <ol style="list-style-type: none"> In the first sweep, determine the total number of healthy, well-spaced trees using the prescribed minimum inter-tree distance (MITD) (e.g., 12 trees) ignoring the M-value; In a second independent sweep, determine the number of well-spaced infected trees (including dead infected trees and for DRT only, infected stumps) using MITD (e.g., one infected tree); Multiply the number from step 2 by the multiplier for the specific root disease and subtract this number from the number of susceptible healthy well-spaced trees found in step 1 (e.g., for DRA: $12 - 1(2) = 10$). The result is the maximum number of free growing trees tallied for the plot. <p>Note: Bl, Cw, Pl, Pw, Py, and broadleaf species are considered not susceptible for survey purposes only.</p> <p>Note: Ba, Bl, Cw, Fd, Pl, Pw, Py and broadleaf species are considered not susceptible for survey purposes only.</p> <p>Note: Bg, Bl, Cw, Cy, Fd, Hm, Pl, Pw, Py, Sx and broadleaf species are considered not susceptible for survey purposes only.</p>

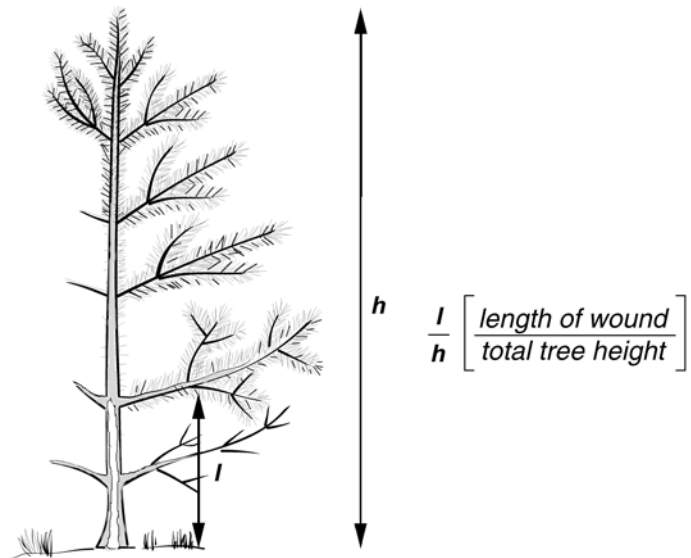


Figure A5-1. Calculation of wound along stem length.

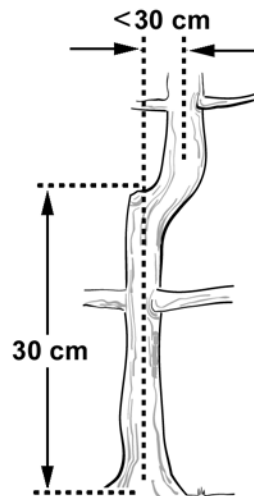


Figure A5-2. Determining horizontal displacement and height above point of germination when assessing stem deformation.

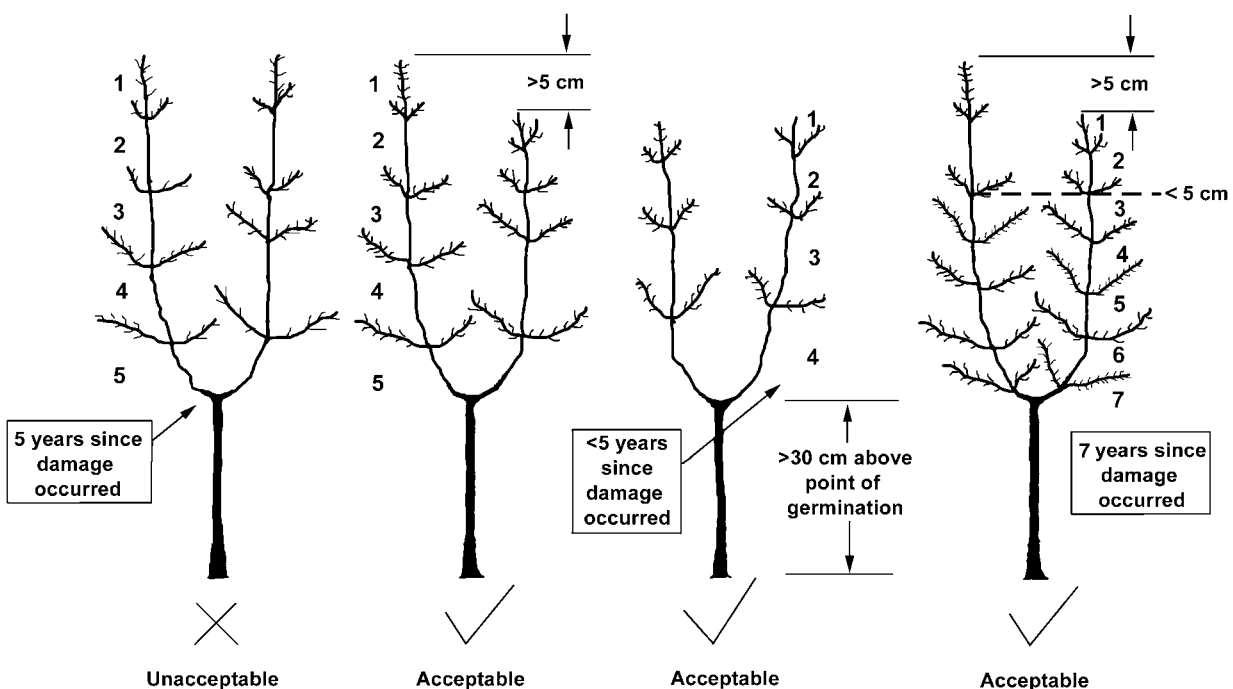


Figure A5-3. Acceptable and unacceptable forks.

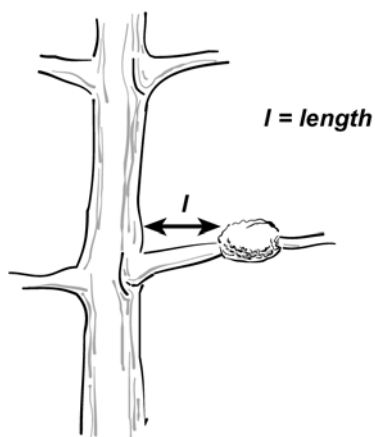


Figure A5-4. Distance measurement from point of infection by canker or gall to main stem.

Definitions

decay: the disintegration of plant tissue. The process by which sound wood is decomposed by the action of wood-destroying fungi and other microorganisms.

fork: two or more leaders have originated from the loss of a leader or apical shoot. At free growing age, a fork is considered persistent if it has not differentiated in height between competing leaders by more than 5 cm after five years of growth since the leader damage occurred. Forks may provide entry points for decay fungi, are points of weakness during felling, and may create waste in the highest value first log.

gall: nodule or lump of malformed bark or woody material caused by a variety of damaging agents, such as western gall rust and some insects.

gouting: excessive swelling of a branch or shoot, often accompanied by misshapen needles and buds. Most common at nodes on branches and frequently caused by balsam woolly adelgid on true firs (*Abies* spp.).

infection: characterized by a lesion or canker on stem or branches or by swelling around the entrance point of a pathogen.

injury: damage to a tree by a biological, physical, or chemical agent.

scar: a wound completely healed over with callus tissue

wound: an injury where cambium is dead (e.g., sunscald) or completely removed. Wounds often serve as entry points for decay fungi.

Appendix C: Even Aged Stocking Standards

CWHwh1 – even aged

Site Series	Species and Min. FG height (m)	Target Stocking Standard (sph)	Min Stocking Standard (sph)	Min Inter-tree Distance (m)	Regen Date (years)	FTG (years)
01	Hw/2.0	900	500	2.00 (Dr/1.5)	6	20
	Ss/3.0					
	Cw/1.2					
	Dr/4.0					
01s	Hw/2.0	900	500	2.00	6	20
	Cw/1.2					
	Ss/3.0					
	Plc/2.0					
02	Cw/1.2	900	500	2.00	6	20
	Hw/1.3					
	Plc/1.3					
	Ss/2.0					
03	Ss/3.0	900	500	2.00 (Dr/1.5)	6	20
	Cw/2.0					
	Hw/2.8					
	Yc/1.2					
	Dr/4.0					
04	Cw/1.2	900	500	2.00 (Dr/1.5)	6	20
	Hw/1.3					
	Yc/1.2					
	Plc/1.3					
	Ss/2.0					
	Dr/4.0					
05	Hw/2.8	900	500	2.00 (Dr/1.5)	6	20
	Cw/1.2					
	Ss/3.0					
	Dr/4.0					
06	Hw/2.8	800	400	1.50	6	20
	Cw1.2					
	Yc/1.2					
	Ss/3.0					
	Hm/2.8					
	Dr/4.0					
07	Ss/3.0	900	500	2.00 (Dr/1.5)	6	20
	Cw/2.0					
	Hw/2.8					
	Dr4.0					
08	Ss/3.0	900	500	2.00 (Dr/1.5)	6	20
	Cw/2.0					
	Dr/4.0					

Site Series	Species and Min. FG height (m)	Target Stocking Standard (sph)	Min Stocking Standard (sph)	Min Inter-tree Distance (m)	Regen Date (years)	FTG (years)
10	Cw/1.2	800	400	1.50	6	20
	Yc/1.2					
	Hw/1.3					
	Plc/1.3					
	Ss/2.0					
	Hm/0.8					
11	Plc/1.3	400	200	1.50	6	20
	Cw/1.2					
	Yc/1.2					
12	Cw/1.2	800	400	1.50	6	20
	Hw/1.3					
	Yc/1.2					
	Plc/1.3					
	Ss/1.3					
13	Cw/1.2	400	200	1.50	6	20
	Hw/1.3					
	Plc/1.3					
	Ss/2.0					
14	Ss/3.0	900	500	2.00	6	20
	Hw/2.0					
	Cw/1.5					
15	Ss/3.0	400	200	1.50	6	20
	Cw/1.5					
	Plc/2.0					
	Hw/2.0					
16	Ss/3.0	900	500	2.00	6	20
	Hw/2.0					
	Cw/1.5					
17	Ss2.0	400	200	1.50	6	20
	Cw/1.2					
	Hw/1.3					
18	Ss/2.0	400	200	1.50	6	20
*Mixedwood strategy on the CWHwh1 site series' 03, 05, 06, 07, and 08: where red alder is being managed as a leading species it will comprise ≥ 80% of the Free Growing stand; the target density will be 800-1200 sph; estimated rotation age of 50-70 years, with a target of 30cm dbh at rotation age.						

CWHwh2 – even aged

Site Series	Species and Min. FG height (m)	Target Stocking Standard (sph)	Min Stocking Standard (sph)	Min Inter-tree Distance (m)	Regen Date (years)	FTG (years)
01	Hw/2.0	900	500	2.00	6	20
	Cw/1.2					
	Ss/1.5					
	Yc/1.5					
	Hm/1.0					
02	Hw/2.0	900	500	2.00	6	20
	Cw/1.2					
	Yc/1.5					
	Ss/1.5					
	Hm/1.0					
03	Hw/2.0	900	500	2.00	6	20
	Cw/1.2					
	Yc/1.5					
	Ss/1.5					
04	Hw/2.0	800	200	1.50	6	20
	Cw/1.2					
	Yc/1.5					
	Ss/1.5					
05	Yc/1.2	400	200	1.50	6	20
	Cw/1.2					
	Hw/1.3					
	Hm/0.8					
	Ss/1.0					
06	Yc/1.2	800	400	1.50	6	20
	Cw/1.2					
	Hw/1.3					
	Hm/0.8					
	Ss/1.0					

CWHvh2 – even aged

Site Series	Species and Min. FG height (m)	Target Stocking Standard (sph)	Min Stocking Standard (sph)	Min Inter-tree Distance (m)	Regen Date (years)	FTG (years)
01	Cw/1.2	900	500	2.00 (Dr/1.5)	6	20
	Hw/2.0					
	Yc/1.5					
	Dr/4.0					
	Ss/3.0					
	Plc/1.3					
02	Plc/1.3	400	200	1.50	6	20
	Cw/1.2					
	Yc/1.2					
	Hw/1.3					
03	Cw/1.2	800	400	1.50 (Dr/1.5)	6	20
	Hw/1.3					
	Plc/1.3					
	Yc/1.2					
	Ss/2.0					
	Dr/4.0					
04	Hw/1.8	900	500	2.00 (Dr/1.5)	6	20
	Ss/3.0					
	Cw//1.2					
	Dr/4.0					
	Yc2.0					
05/06	Cw/1.5	900	500	2.00 (Dr/1.5)	6	20
	Ss/3.0					
	Hw/1.8					
	Yc/1.5					
	Dr/4.0					
07	Cw/1.5	900	500	2.00 (Dr/1.5)	6	20
	Ss/3.0					
	Hw/1.8					
	Yc/1.5					
	Dr/4.0					
08	Ss/3.0	900	500	2.00 (Dr/1.5)	6	20
	Cw/1.5					
	Hw/1.8					
	Dr/4.0					
09	Ss/4.0	900	500	2.00	6	20
	Hw/1.8					
	Cw/1.5					

Site Series	Species and Min. FG height (m)	Target Stocking Standard (sph)	Min Stocking Standard (sph)	Min Inter-tree Distance (m)	Regen Date (years)	FTG (years)
11	Cw/1.2	800	400	1.50	6	20
	Yc/1.2					
	Hw/1.3					
	Plc/1.3					
12	Cw/1.2	400	200	1.50	6	20
	Yc/1.2					
	Plc/1.3					
13	Cw/1.2	800	400	1.50	6	20
	Yc/1.2					
	Ss/2.0					
	Hw/1.3					
	Plc/1.3					
14	Ss/2.0	400	200	2.00	6	20
	Cw/1.2					
	Hw/1.3					
	Plc/1.3					
15	Ss/3.0	900	500	2.00	6	20
	Cw/1.5					
	Hw/2.0					
16	Ss/3.0	400	200	2.00	6	20
	Cw/1.5					
	Hw/2.0					
	Plc/1.5					
17	Ss/2.0	900	500	2.00	6	20
	Cw/1.2					
	Hw/1.3					
18	Ss/2.0	400	200	2.00	6	20
	Cw/1.2					

*Mixedwood strategy on the CWHvh2 site series' 03, 04, 05/06, 07 and 08: where red alder is being managed as a leading species it will comprise $\geq 80\%$ of the Free Growing stand; the target density will be 800-1200 sph; estimated rotation age of 50-70 years, with a target of 30cm dbh at rotation age.

MHwh – even aged

Site Series	Species and Min. FG height (m)	Target Stocking Standard (sph)	Min Stocking Standard (sph)	Min Inter-tree Distance (m)	Regen Date (years)	FTG (years)
01	Hw/1.0	900	500	2	6	20
	Yc/1.2					
	Hm/1.0					
	Cw/1.2					
	Ss/1.5					
02	Hm/1.0	400	200	1.5	6	20
	Yc/1.2					
	Cw/1.2					
	Hw/1.0					
	Ss/1.0					
03	Hw/1.0	900	500	2	6	20
	Ss/1.5					
	Cw/1.2					
	Yc/1.2					
	Hm/1.0					
04	Cw/1.2	900	500	2	6	20
	Yc/1.2					
	Hw/2.0					
	Hm/1.0					
	Ss/2.0					
05	Cw/1.2	900	500	2	6	20
	Yc/1.2					
	Hw/2.0					
	Hm/1.0					
	Ss/1.5					
	Plc/2.0					
06	Cw/1.2	800	400	1.5	6	20
	Yc/1.2					
	Hw/0.8					
	Hm/0.8					
	Ss/1.5					
07	Cw/1.2	900	500	1.5	6	20
	Yc/1.2					
	Hw/0.8					
	Hm/0.8					
	Ss/1.0					
08	Cw/1.2	400	200	1.5	6	20
	Yc/1.2					
	Hw/0.8					
	Hm/0.8					

Site Series	Species and Min. FG height (m)	Target Stocking Standard (sph)	Min Stocking Standard (sph)	Min Inter-tree Distance (m)	Regen Date (years)	FTG (years)
09	Cw/1.2	800	400	1.5	6	20
	Yc/1.2					
	Hw/0.8					
	Hm/0.8					
	Ss/1.0					

Species Acceptability

Ecologically suitable species are provided in the stocking standards in the tables above. The suitability/acceptability of regeneration will be determined in the field by a Qualified Professional based on site-specific soil moisture, nutrient, aspect and elevation characteristics and tree performance in response to the site. Tree species that are ecologically suitable and commercially valuable are listed in the standards provided in Appendix C.

Sitka Spruce (Ss)

On marginal sites: CHWwh1 (01s, 04, 10, 12); CWHwh2 (02, 05, 06); CWHvh2 (01, 13); MHwh (02, 03, 04, 06, 07, 09) where Ss is accepted, it will only be accepted to a maximum of 50% of the minimum stocking density. Furthermore, on these sites, Ss will be limited in terms of its acceptance at regen and Free-Growing to microsites that are medium or better, in terms of productivity (Soil Nutrient Regimes C-E). Sitka spruce will be targeted on elevated and productive microsites. In terms of elevation, Ss will be focused on lower elevation sites (especially in the MH subzone) and planted within the applicable elevation range for the stock.

Lodgepole Pine (Plc)

On marginal sites: CHWwh1 (01s, 02, 04, 10, 13, 14); CWHwh2 (02, 05, 06); CWHvh2 (11, 13, 14, 16); and MHwh (05) where Plc is accepted, it will only be accepted to a maximum of 50% of the minimum stocking density. Furthermore, on these sites, Plc will be limited in terms of its acceptance at regen and Free-Growing to microsites that are medium or poorer, in terms of productivity (Soil Nutrient Regimes A-C). Lodgepole pine will be targeted on depressional, folisolic and other poor productivity microsites.

Red Alder (Dr)

Natural red alder ingress will be defaulted to a preferred species on all sites within 3 metres of any stream banks where harvesting is permissible.

Free Growing Criteria

Conifers

An acceptable conifer crop tree must:

- a) Be free from brush competition (consistent with the crop tree to brush height ratio for the BEC applicable BEC unit).
- b) Be of good health, form and vigour and meet the Free Growing damage criteria for conifers, as provided in Appendix B, above.

Red Alder

An acceptable red alder crop tree must:

- a) Be free from brush competition (consistent with the crop tree to brush height ratio for the BEC applicable BEC unit).
- b) Not have a tree pith that is laterally displaced more than 30 cm from the location of the root-crown pith.
- c) Not originate from a cut stump.
- d) Have one dominant live leader.
- e) Not have a wound that is greater than 10% of the stem circumference nor is greater than 10% of the total length of the stem.
- f) Not have any fungal infections or insect infestations affecting tissues below the bark surface, visible without destructive sampling.
- g) Not be browsed so as to limit its ability to become a crop tree.

Minimum Inter-tree Distance

The Minimum Inter-tree Distances have been specified in the stocking standards tables above, however, for all sites, the minimum inter-tree distance may be reduced to 1.5m, in the following circumstances:

- a) within 20.0m of the road centre-line; or
- b) immediately adjacent to stream or riparian areas, naturally Non-Productive Areas, or areas (50m²) covered with unplantable slash; or
- c) on helicopter logged areas, where slash treatment is not practicable; or
- d) on any talus site; or
- e) immediately adjacent to retained single trees.

Brush Competition at Free-Growing

The crop tree to brush height ratio at Free Growing is as follows:

- a) For CWHwh1, CWHwh2 and CWHvh2 BEC units, the ratio is 150%.
- b) For MHwh BEC Units, the ratio is 125%.

Free Growing Window

The Free Growing window is to be 5-years after the regen obligation has been met, and no later than 20-years after the commencement of harvesting for the development area.

Mixed Conifer – Hardwood Management

Red alder may be the leading species in mixed-hardwood/ conifer (i.e., micro-patch mixed wood)) management situations. Where red alder is the leading species ($\geq 80\%$) the hardwood stocking standard may be applied. Where red alder is not the leading species, it will not be accepted as a crop tree.

On an annual basis, the total Plan area managed to hardwood stocking standards will be a maximum of 200ha, for all Plan Holders combined. The 200ha is to be allocated between Plan Holders, proportional to their AAC for the Plan Area.

Where red alder is included as a suitable species, the strategy will to pre-stratify the development area, and assign conifer or red alder stocking standards, as appropriate, consistent with the Site Plan. The minimum patch size for identifying and assigning the alder stocking standard will be 0.25ha.

Appendix D: Single Entry Dispersed Retention System (SEDRS) Stocking Obligations

Haida Gwaii Single Entry Dispersed Retention System (SEDRS) Stocking Standards

The procedures below outline the stocking standard and survey process to determine if stocking obligation has been met on partially harvested blocks on Haida Gwaii. These procedures are as of yet untested on Haida Gwaii and may be amended as necessary.

As this method/ policy has yet to be implemented operationally on Haida Gwaii it is be considered as part of an adaptive management process, and may be reviewed and improved on an ongoing basis. It is acknowledged that the SEDRS stocking standard will need to be reviewed in the next 5 years (i.e., at the end of the term, of the FSP), including a review of any Timber Supply impacts. To ensure that there are no significant adverse impact to the Timber Supply, application of the SEDRS stocking standard will be limited to less than 0.1% of the Timber Harvesting Landbase, on an annual basis, for all Plan Holders combined.

Regen and Free-Growing Obligation Timing

Where required, the regen obligation date for stands managed under the SEDRS stocking standard is between 2 and 6 years, from harvest commencement.

Where required, the Free Growing obligation for stands managed under the SEDRS stocking standard is between 2 and 20 years, from harvest commencement, consistent with even-aged stocking standards.

If the stocking obligations are met after 2-years, a Free-Growing declaration may be made, consistent with FPPR s. 97 or 97.1.

Species Selection

Overstorey and understorey tree species acceptability is the same as described for the even-aged stocking standards in Appendix C, for the applicable site-series. Given that overstorey densities will be variable, depending on the level of harvesting, light interception by the overstorey will be factored into the species acceptability for a particular harvest area and balanced against individual tree species shade tolerance. Shade tolerant species will be considered acceptable where residual basal area is high, whereas, shade intolerant species will not.

Post-Harvest Sampling Procedures

Stratification

The sampling procedures described are to be applied to areas with a residual basal area (RBA) of >5 to $< 40\text{m}^2/\text{ha}$. As such, development areas will be stratified according to the following criteria:

- Areas $> 0.1\text{ha}$ with $\leq 5\text{m}^2/\text{ha}$ will be assessed according to even-aged stocking standards and survey procedures.
- Areas $\geq 0.25\text{ha}$ uncut will be classified as group retention and be removed from the NAR and survey area.

Overstorey

- Measure overstorey RBA using a prism that is suited to the tree sizes on site to capture, on average, a minimum of 4 trees per plot in an uncut portion of the stand (or cut and leave trees). The cruise compilation should guide the choice of prism size.
- Tally all overstorey trees, by species, as either crop trees or non-crop trees (as defined in Appendices 1 and 2 of SEDRS Discussion Paper, dated November 5, 2009). Only overstorey crop trees contribute to RBA and the determination of differential from potential (DFP), as presented in Table 1.
- Acceptable overstorey crop trees must meet the criteria specified in the Appendix F, based on the SEDRS Discussion Paper, dated November 5, 2009.

Understorey

An unimpeded well-spaced stem must be:

- Outside of the drip-line of overstorey trees.
- Healthy trees that meet the advanced regeneration criteria, as defined in Appendix G, based on the SEDRS Discussion Paper, dated November 5, 2009.
- Greater than the minimum described height for all species identified as suitable for the site (heights are determined as 75% of the heights provided in the Reference Guide for FDP Stocking Standards – for the Vancouver Forest Region ⁵ (MOF, November 2010).
- Unimpeded by vegetation (herbaceous or shrubs overtopping the stem).

Key elements of survey methodology

- Pre-stratify: Identify SEDRS areas using stratification criteria described above
- Plots: establish 1 plot per ha within a stratum (SU) with a minimum of 5 plots per stratum (SU), and a maximum of 15 plots per stratum (SU)
- Plot Size: 0.005ha (3.99m radius)
- Measurements: Determine RBA and the UWS stems per plot

Stocking Decision

Use Table 13, to determine Deviation-from-Potential and stocking category (open [O], partially stocked [P] or stocked [S]) for each plot. A block is deemed stocked if:

- average DFP value for all plots is ≤ 0.2 , and
- proportion of plots in the S (stocked) category is $\geq 60\%$, and
- proportion of plots in the O (open) category is $\leq 20\%$

⁵ http://www.for.gov.bc.ca/hfp/silviculture/stocking_stds.htm

Table 13: Deviation from Potential

Overstorey BA (m ² /ha)	Well Spaced Trees in Plot*								
	0	1	2	3	4	5	6	7	8
5	0.86	0.65	0.45	0.30	0.19	0.11	0.06	0.02	0.00
6	0.82	0.62	0.43	0.28	0.18	0.11	0.06	0.02	0.00
7	0.77	0.58	0.40	0.27	0.17	0.10	0.05	0.02	0.00
8	0.72	0.55	0.38	0.25	0.16	0.09	0.05	0.02	0.00
9	0.67	0.51	0.35	0.23	0.15	0.09	0.05	0.02	0.00
10	0.62	0.47	0.32	0.21	0.14	0.08	0.04	0.02	0.00
11	0.57	0.43	0.30	0.20	0.12	0.07	0.04	0.02	0.00
12	0.52	0.39	0.27	0.18	0.11	0.07	0.04	0.01	0.00
13	0.47	0.35	0.24	0.16	0.10	0.06	0.03	0.01	0.00
14	0.42	0.32	0.22	0.15	0.09	0.05	0.03	0.01	0.00
15	0.38	0.28	0.20	0.13	0.08	0.05	0.03	0.01	0.00
16	0.33	0.25	0.17	0.11	0.07	0.04	0.02	0.01	0.00
17	0.29	0.22	0.15	0.10	0.06	0.04	0.02	0.01	0.00
18	0.26	0.19	0.13	0.09	0.06	0.03	0.02	0.01	0.00
19	0.22	0.17	0.12	0.08	0.05	0.03	0.02	0.01	0.00
20	0.19	0.14	0.10	0.07	0.04	0.02	0.01	0.01	0.00
21	0.16	0.12	0.08	0.06	0.04	0.02	0.01	0.00	0.00
22	0.13	0.10	0.07	0.05	0.03	0.02	0.01	0.00	0.00
23	0.11	0.08	0.06	0.04	0.02	0.01	0.01	0.00	0.00
24	0.09	0.07	0.05	0.03	0.02	0.01	0.01	0.00	0.00
25	0.07	0.05	0.04	0.02	0.02	0.01	0.00	0.00	0.00
26	0.05	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00
27	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
28	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00
29	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
30 – 40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

“Open”“Partially Stocked”“Stocked”

* Total number of well-spaced trees in a 0.005ha plot at a minimum inter-tree distance of 1.5m

Appendix E: Land Use Order Schedules

Haida Gwaii Land Use Objectives Order

Background

A community-based, strategic-level land use planning process led by the Council of the Haida Nation and the Province of British Columbia (the “Parties”) was initiated in September of 2003. This process was based on protocol agreements signed in April of 2001, when the Parties made a commitment to cooperatively develop a strategic land use plan that would be guided by an ecosystem-based management framework. On December 12, 2007, the Strategic Land Use Agreement (SLUA) was signed and work began, in earnest, to protect areas of critical significance and to establish forest management objectives for cultural, aquatic, biodiversity and wildlife values.

This Land Use Objectives Order establishes legal objectives for forest-based values to support implementation of ecosystem-based management. These objectives protect important Haida cultural values, support ecosystem integrity and provide environmental benefits by maintaining the diversity and abundance of organisms on Haida Gwaii. Human well-being will be maintained through policies and initiatives designed to achieve socio-economic benefits, including carbon values, and timber harvest levels that will support a viable forest industry.

This Order does not change or affect the positions that the Council of the Haida Nation or the Province have regarding their jurisdiction, responsibilities and/or decision-making authority. However, the recently enacted *Haida Gwaii Reconciliation Act* does contain a provision that will enable the Haida Gwaii Management Council to establish new land use objectives, once the Council determines that amendments are necessary to this Order and the relevant section of that Act is brought into force.

The implementation of ecosystem-based management will be monitored and, if monitoring indicates that the objectives for ecosystem integrity, Haida cultural values or socio-economic considerations included in the SLUA are not being met, this Order may be reviewed and replaced by new land use objectives established by the Haida Gwaii Management Council.

Ministry of Natural Resource Operations

Land Use Objectives Order

Haida Gwaii

Part 1 - Interpretation

1. Relationship with *Forest and Range Practices Act*

- (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 the landscape units shown on the map attached as Schedule 1.
- (2) In accordance with section 5 of the Land Use Objectives Regulation (B.C. Reg. 357/2005), subsection 9 (2) of this Order is disclosed as being in conflict with the objective made in section 10 of the *Forest Planning and Practices Regulation* (B.C. Reg. 14/2004) under the *Forest and Range Practices Act*, for the area shown on the map attached Schedule 1, since this Order applies to all culturally modified trees modified prior to 1920, within the area shown in Schedule 1.
- (3) This Order establishes land use objectives in accordance with section 93.4 of the *Land Act*, and does not define, amend, recognize, affirm, deny or limit the aboriginal rights, aboriginal title, or treaty rights of the Haida Nation and does not relieve the Province of any obligation or duty to consult and accommodate the Haida Nation.
- (4) Results or strategies specified in a forest stewardship plan may apply to more than one objective contained in this Order.

2. Definitions

- (1) In this Order:

“active fluvial unit” means an active floodplain, where water flows over land in a 1 in 100 year flood event, and includes low and medium benches and the zone of an active fan where active hydrogeomorphic processes are currently evident or would likely be initiated if harvesting and/or road building were to occur;

“adaptive management plan” means a monitoring or research initiative that is developed and implemented during the operational planning, timber harvesting, silviculture treatment, or road construction, including maintenance and deactivation phases, to examine the outcomes of management strategies and practices that vary from default requirements, the results of which will inform the development of future management strategies and practices;

“bioregion” means all lands commonly referred to as Haida Gwaii;

“Black Bear den” means a cavity within a tree, a snag, a stump or a log, greater than 0.80 meters in diameter which shows evidence of use by Black Bears for winter hibernation;

“blue-listed ecological community” means any ecological community that is listed in Schedule 13 as blue-listed;

“cedar stewardship area” means an area shown as a cedar stewardship area in Schedule 3;

“common site series” means a Biogeoclimatic Ecosystem Classification system site series listed as common in Schedule 10;

“cultural cedar stands” means three or more culturally modified trees, monumental cedar, or a combination thereof, where each tree is within 50 meters of another tree;

“cultural feature” means any Haida traditional forest feature, Haida traditional heritage feature, culturally modified tree or monumental cedar;

“culturally modified tree” means, for the purposes of this Order, a tree that was modified prior to 1920 by Haida people as part of their cultural use;

“development area” means a specific location defined by boundaries shown on a site plan where timber harvesting is planned or carried out, and includes any stand level retention, management zones, reserve zones, mapped reserves or other areas where timber harvesting is restricted or managed pursuant to this Order or the *Forest and Range Practices Act* and the regulations made thereunder;

“digital spatial data” means information in the form of a Geographic Information System feature class format, shapefile format, or coverage;

“equivalent clearcut area” means an indicator which expresses, as a percentage of an entire watershed, the degree to which regenerating forest stands are hydrologically similar to clearcuts, relative to the hydrologic status of the original stands;

“forested swamp” means a forested mineral wetland or a forested peatland that is represented by the Western redcedar – Sitka spruce / skunk cabbage ecological community;

“functional riparian forest” means mature forest and old forest adjacent to streams and other aquatic features that all contribute to the functioning of aquatic ecosystems through the filtration of sediment from runoff, the stabilization of banks, the regulation of water temperatures, the provision of a continual source of large organic debris to the stream channel and through other means;

“Great Blue Heron nest” means any heron nest, unless monitoring confirms that the nest has not been used in the last three consecutive breeding seasons;

“Haida traditional forest feature” means a Haida traditional forest feature listed in Schedule 2;

“Haida traditional heritage feature” means a Haida traditional heritage feature listed in Schedule 2;

“hydrologically recovered” means the point at which regenerated forest stands have hydrologic properties similar to the pre-harvest hydrologic properties of the stands, with hydrologic responses within the range of natural variability;

“intergovernmental process” means a collaborative process at the technical and operational level pursuant to the Kunst’aa guu – Kunst’aayah Reconciliation Protocol dated December 11, 2009, or means another collaborative process agreed upon by the Haida Nation and the Province of British Columbia;

“management zone” means an area that has restrictions specified in this Order on the alteration or removal of trees;

“mapped reserves” means the areas shown on the maps attached as Schedule 8 and Schedule 12, where timber harvesting may not occur, unless harvest limits are otherwise specified in this Order;

“Marbled Murrelet nesting habitat” means areas shown as Class 1 and Class 2 Marbled Murrelet nesting habitat on the map attached as Schedule 11;

“mature forest” means a forest older than 80 years in a Coastal Western Hemlock zone and older than 120 years in a Mountain Hemlock zone, or means a forest classed as structural stage 6;

“monumental cedar” means a visibly sound western redcedar or yellow-cedar tree that is greater than 100 centimeters in diameter at breast height and has a log length of 7

meters or longer above the flare with at least one face that is suitable for cultural use;

“Northern Saw-whet Owl core nesting area” means a patch of mature forest or old forest below 300 meters in elevation with a minimum area of 10 hectares that contains suitable nesting habitat for the Northern Saw-whet Owl;

“old forest” means a forest older than 250 years or structural stage 7;

“qualified professional” means a person who:

- (a) is registered and in good standing in British Columbia with an appropriate professional organization constituted under a British Columbia statute, who is acting under that association’s code of ethics and is subject to disciplinary action by that association; and
- (b) is acting within his or her area of expertise and scope of practice;

“rare site series” means a Biogeoclimatic Ecosystem Classification system site series listed as rare in Schedule 10;

“red-listed ecological community” means any ecological community that is listed in Schedule 13 as red-listed;

“reserve zone” means an area referred to in this Order where timber harvesting may not occur, unless harvest limits are otherwise specified in this Order;

“restricted activity zone” means an area where timber harvesting, silviculture treatments, road construction (including maintenance and deactivation) and auditory machine disturbance are restricted for specified periods during the calendar year;

“stand level retention” means small intact patches of trees and understory vegetation that are located in a development area to assist in meeting the land use objectives in this Order;

“tree length” means a horizontal distance equal to:

- (a) in old forest stands, the tree height as indicated in column B of Schedule 5 for the predominant site series adjacent to the feature or the measured height of the tallest old trees adjacent to the feature; or
- (b) in young or mature stands, the tree height as indicated in column A of Schedule 5 for the predominant site series adjacent to the feature, or the measured height of the tallest mature trees adjacent to the feature;

“Type I fish habitat” means areas shown as Type I fish habitat on the map attached as Schedule 4 or any area that includes:

- (a) a reach of a watercourse and its active floodplain with a continuous channel bed that is greater than 1.5 metres in width, is less than or equal to 5% in gradient and is known to be, or has the potential to be, inhabited by fish;
- (b) a lake or wetland greater than 1.0 hectare connected by a perennial or seasonal stream to fish habitat described in (a); or
- (c) an estuary or marine interface zone connected by a perennial or seasonal stream to fish habitat described in (a);

“Type II fish habitat” means areas shown as Type II fish habitat on the map attached as Schedule 4 or any area that includes:

- (a) a reach of a watercourse and its active floodplain with a continuous channel bed that is not classified as Type I fish habitat and is known to be, or has the potential to be, inhabited by fish; or
- (b) a lake or wetland greater than 1.0 hectare that is not classified as Type I fish habitat and is connected by a perennial or seasonal stream to fish habitat described in (a);

“upland stream” means a stream reach that is not Type I fish habitat or Type II fish habitat;

“upland stream area” means those portions of a watershed sub-unit that are outside of reserve zones and management zones adjacent to Type I fish habitat and Type II fish habitat;

“watershed sensitivity” means the probability of hydrologic change which is outside of the range of natural variation due to external influence and which has the likelihood of having a negative consequence to social, economic or environmental values;

“watershed sub-unit” means an area shown on the map attached as Schedule 6;

“western yew patch” means five or more western yew trees where each yew tree is within 5 meters of another yew tree;

“winter hibernation season” means the period between November 1st and May 15th when Black Bear dens may be in use for hibernation;

- (2) Words and expressions not defined in this Order have the meanings given to them in the *Forest and Range Practices Act*, the *Forest Act*, the *Heritage Conservation Act*, the *Range Act* and the regulations made thereunder, unless the context indicates otherwise.

- (3) Where an objective refers to an area shown on a schedule and the area is also defined by a source spatial dataset, the boundaries of the area as defined by the source spatial dataset will apply. All source spatial datasets are available in:
<ftp://ftpnan.env.gov.bc.ca/pub/outgoing/dist/HaidaGwaii/Objectives/data/>
- (4) Within individual development areas, mapped reserves, reserve zones, management zones and stand level retention may be used to meet more than one land use objective.
- (5) Mapped reserves, reserve zones, management zones and stand level retention used to meet land use objectives for one development area cannot be used to meet land use objectives for any other development area.

Part 2 – Cultural Objectives

3. Objectives for cedar stewardship areas

- (1) Maintain cedar stewardship areas to provide a supply of cedar for present and future cultural use.
- (2) Despite subsection (1), up to 10% of the total area of cedar stewardship areas may be harvested for commercial purposes, of which up to 250 hectares may be harvested in a 10 year period, provided that:
 - (a) an intergovernmental process is completed;
 - (b) cultural values within the specific cedar stewardship area proposed for harvesting are identified in accordance with section 4; and
 - (c) the distribution of harvest is proportional to the occurrence of cedar stewardship areas within a given landscape unit.

4. Objectives for cultural feature identification

- (1) Identify cultural features referred to in sections 5, 6 and 9 by conducting a field assessment prior to undertaking road construction or timber harvesting. The field assessment is to be completed by a person who has been certified by the Council of the Haida Nation.

5. Objectives for Haida traditional heritage features

- (1) Protect all Class 1 Haida traditional heritage features.
- (2) Adjacent to Class 1 Haida traditional heritage features, maintain a reserve zone with a minimum width equal to 500 meters, measured from the edge of the Class 1 Haida traditional heritage feature, in order to protect that feature.
- (3) Despite subsection (2), the area of the reserve zone may be reduced, provided that
 - (a) an intergovernmental process is completed; and
 - (b) the reduction is required for road access, other infrastructure, or to address a safety concern, and no practicable alternative exists.
- (4) Protect all Class 2 Haida traditional heritage features.
- (5) Adjacent to Class 2 Haida traditional heritage features, maintain a reserve zone with an average width equal to 100 meters, measured from the edge of the Class 2 Haida traditional heritage feature, in order to protect that feature.
- (6) Despite subsections (4) and (5), a Class 2 Haida traditional heritage feature or adjacent reserve zone may be altered, removed or reduced, provided that:
 - (a) an intergovernmental process is completed; and
 - (b) the alteration, removal or reduction is required for road access, other infrastructure, or to address a safety concern, and no practicable alternative exists.
- (7) The width of the reserve zone for any one Haida traditional heritage feature may be decreased by up to 0.5 tree length from the outer edge of the reserve zone to address site specific values, provided there is no net loss of reserve zone area within the development area.
- (8) Haida traditional heritage features and reserve zones identified or retained in accordance with subsections (1) to (7) must be documented and submitted as digital spatial data at the end of each calendar year to the Council of the Haida Nation and the Province of British Columbia.
- (9) Where some or all of the forest within the reserve zones required for Class 1 and Class 2 Haida traditional heritage features has been previously altered or harvested, provide for the recruitment of mature forest and old forest in that reserve zone through natural processes and voluntary management intervention.

6. Objectives for Haida traditional forest features

- (1) Protect the integrity of all Class 1 Haida traditional forest features.
- (2) Adjacent to a Class 1 Haida traditional forest feature, maintain a reserve zone with an average width equal to 1.0 tree length, measured from the Haida traditional forest feature, in order protect the integrity of that feature.
- (3) Adjacent to reserve zones specified in subsection (2), maintain a management zone with an average width equal to 1.0 tree length, in order to protect the integrity of the reserve zone.
- (4) For the purposes of subsection (3), the width of the management zone in any one location may be decreased by up to 0.5 tree length from the outer edge of the management zone to address site specific values, provided there is no net loss of management zone area specified in subsection (3) within the development area.
- (5) Despite subsection 4, the area of the management zone may be reduced, provided that:
 - (a) an intergovernmental process is completed;
 - (b) it is necessary for road access, other infrastructure, or to address a safety concern; and
 - (c) the integrity of the Class 1 Haida traditional forest feature is maintained.
- (6) Protect the integrity of a minimum of 50% of all Class 2 Haida traditional forest features that occur within a development area.
- (7) For the purposes of subsection (6), provide sufficient stand level retention to maintain the integrity of the Class 2 Haida traditional forest features.
- (8) Where practicable, protect occurrences of Class 3 Haida traditional forest features in stand level retention.
- (9) Haida traditional forest features, reserve zones, management zones and stand level retention required under subsections (1) to (8) must be documented and submitted as digital spatial data at the end of each calendar year to the Council of the Haida Nation and the Province of British Columbia.
- (10) Where some or all of the forest within the stand level retention, reserve zones and management zones required under subsections (2) to (8) has been previously altered or harvested, provide for the recruitment of mature forest and old forest through natural processes and voluntary management intervention.

7. Objectives for western redcedar and yellow-cedar retention

- (1) Within individual development areas, retain a minimum of 15% of the combined pre-harvest composition of western redcedar and yellow-cedar with a minimum area of 1 hectare, where:
 - (a) the development areas are greater than 10 hectares and the combined western redcedar and yellow-cedar component of pre-harvest stand composition is greater than 30%; or,
 - (b) the development areas are equal to or less than 10 hectares and the combined western redcedar and yellow-cedar component of the pre-harvest stand composition is greater than 60%.
- (2) For the purpose of subsection (1), retain areas that are greater than 1 hectare in size and contain a range of diameters of western redcedar and yellow-cedar representative of the pre-harvest stands.
- (3) Where the pre-harvest western redcedar and yellow-cedar species composition is greater than 20% in the total harvested area, regenerate the area to establish a composition of western redcedar and yellow-cedar that are equivalent to the pre-harvest composition.
- (4) All areas retained in accordance with subsection (1) must be documented and submitted as digital spatial data at the end of each calendar year to the Council of the Haida Nation and the Province of British Columbia.

8. Objectives for western yew retention

- (1) Within development areas, protect all western yew patches with stand level retention.
- (2) Despite subsection (1), western yew patches may be altered or removed to accommodate operational requirements for road and bridge construction, where no practicable alternative exists.
- (3) Where practicable, also include individual western yew trees in stand level retention that do not constitute a western yew patch.
- (4) All areas retained or managed in accordance with subsections (1) to (3) must be documented and submitted as digital spatial data at the end of each calendar year to the Council of the Haida Nation and the Province of British Columbia.

9. Objectives for culturally modified trees and monumental cedar

- (1) Protect all cultural cedar stands to support the Haida Nation's present and future cultural use.
- (2) Protect all culturally modified trees to support the Haida Nation's present and future cultural use.
- (3) Protect all monumental cedar greater than 120 centimeters diameter at breast height to support the Haida Nation's present and future cultural use.
- (4) Despite subsections (1), (2) and (3), cultural cedar stands, culturally modified trees and monumental cedar may be altered or removed, provided that:
 - (a) an intergovernmental process is completed;
 - (b) the alteration or removal is required for road access, other infrastructure, or to address a safety concern, and no practicable alternative exists; and
 - (c) any culturally modified tree or monumental cedar harvested will be provided to the Haida Nation.
- (5) Monumental cedar not located within cultural cedar stands and not the size described under subsection (3), may be harvested provided that the greater of 10% or 1 monumental cedar is retained within the development area, and it is confirmed through the intergovernmental process that:
 - (a) the monumental cedar is not required for a cultural cedar use; or
 - (b) harvesting the monumental cedar is required for road access, other infrastructure, or to address a safety concern, and the monumental cedar will be made available to the Haida Nation or other specific measures will be identified.
- (6) For the purposes of subsections (1) to (5), adjacent to cultural cedar stands, culturally modified trees and monumental cedar that are protected or retained, maintain a reserve zone with a minimum width equal to 0.5 tree length.
- (7) Despite subsection (6), the area of the reserve zone may be reduced, provided that:
 - (a) an intergovernmental process is completed;
 - (b) alteration or harvesting is required for road access, other infrastructure, or to address a safety concern, where no practicable alternative exists; and

- (c) the integrity of the cultural cedar stand, culturally modified tree or monumental cedar is maintained.
- (8) Adjacent to reserve zones specified in subsection (6), maintain a management zone with an average width equal to 1.0 tree length, in order to protect the integrity of the reserve zone, measured from the outer boundary of the reserve zone.
- (9) Within the management zone specified in subsection (8), maintain or recruit, in the shortest possible timeframe, at least 90% of the forest as mature forest and old forest through natural processes and voluntary management intervention.
- (10) Despite subsections (8) and (9), the area of the management zone may be reduced, provided that:
 - (a) an intergovernmental process is completed;
 - (b) the reduction is necessary to address operational constraints or a safety concern, and
 - (c) the integrity of the reserve zone is maintained.
- (11) All areas retained or managed in accordance with subsections (1) to (10) must be documented and submitted as digital spatial data at the end of each calendar year to the Council of the Haida Nation and the Province of British Columbia.

Part 3 - Aquatic Habitats

10. Objectives for Type I fish habitat

- (1) Protect all forest within Type I fish habitat.
- (2) In the event of any inconsistency between the location of Type I fish habitat as shown on Schedule 4 and the actual location of Type I fish habitat identified in the field, the location of Type I fish habitat identified in the field shall apply.
- (3) Adjacent to Type I fish habitat, maintain a reserve zone with a minimum width of 2.0 tree lengths, measured from the outer edge of the Type I fish habitat.
- (4) Despite subsection (3), the width of the reserve zone in any one development area may be increased or decreased by up to 0.5 tree length measured from the outer edge

of the reserve zone to address site specific values, provided there is no net loss of reserve zone area within the development area.

- (5) Within an individual development area, up to 5% of the total area of the reserve zone may be altered or removed, provided that:
 - (a) the integrity of the Type I fish habitat is maintained; and
 - (b) the alteration or removal is required for road and bridge construction, or to address a safety concern, and there is no practicable alternative.
- (6) Within an individual development area, up to 5% of the total area of reserve zone may be altered or removed for purposes other than those referred to in subsection (5)(b), provided that an intergovernmental process is completed.
- (7) All areas retained, managed or varied in accordance with subsections (1) to (6) must be documented and submitted as digital spatial data at the end of each calendar year to the Council of the Haida Nation and the Province of British Columbia.
- (8) Where some or all of the forest within the Type I fish habitat and reserve zones required under subsections (1) and (3) has been previously altered or harvested, provide for the recruitment of functional riparian forest in the Type I fish habitat and reserve zones through natural processes and voluntary management intervention.

11. Objectives for Type II fish habitat

- (1) Protect all forest within Type II fish habitat.
- (2) In the event of any inconsistency between the location of Type II fish habitat as shown on Schedule 4 and the actual location of Type II fish habitat identified in the field, the latter shall apply.
- (3) Adjacent to Type II fish habitat, maintain a reserve zone with a minimum width of 1.0 tree length, measured from the outer edge of the Type II fish habitat.
- (4) Within an individual development area, up to 5% of the total area of the reserve zone may be altered or removed, provided the integrity of the Type II fish habitat is maintained.
- (5) Adjacent to reserve zones required under subsection (3), maintain a management zone with an average width of 0.5 tree length, to protect the integrity of the reserve zone.
- (6) Within an individual development area, the area of the management zone required under subsection (5) may be reduced by up to 20%.

- (7) Despite subsections (3) to (6), the combined area of the reserve zone and management zone may be reduced further, provided that:
 - (a) an intergovernmental process is completed;
 - (b) the total amount of mature forest and old forest in the reserve zone and management zone within the development area is reduced by no more than 20%;
 - (c) the integrity of Type II fish habitat is maintained; and
 - (d) an adaptive management plan is developed and implemented.
- (8) Areas retained, managed or varied in accordance with subsections (1) to (7) must be documented and submitted as digital spatial data at the end of each calendar year to the Council of the Haida Nation and the Province of British Columbia.
- (9) Where some or all of the forest within the Type II fish habitat and reserve zones required under subsections (1) and (3) has been previously altered or harvested, provide for the recruitment of functional riparian forest in the Type II fish habitat and reserve zones through natural processes and voluntary management intervention.

12. Objectives for active fluvial units

- (1) Protect all forest within active fluvial units.
- (2) Adjacent to the active fluvial units, maintain a management zone with a minimum width of 1.5 tree lengths, measured from the outer edge of the active fluvial unit, to maintain the integrity of the active fluvial unit.
- (3) Within an individual development area, the total amount of mature forest and old forest in the management zone may be reduced by up to 10%.
- (4) Despite subsection (3), within an individual development area, the total amount of mature forest and old forest in the management zone may be reduced by an additional 10%, provided that:
 - (a) sufficient functional riparian forest is retained to protect the integrity of the active fluvial unit; and
 - (b) an adaptive management plan is developed and implemented.
- (5) Areas retained, managed or varied in accordance with subsections (1) to (4) must be documented and submitted as digital spatial data at the end of each calendar year to the Council of the Haida Nation and the Province of British Columbia.

- (6) Where some or all of the forest within the active fluvial unit and management zone required under subsections (1) and (2) has been previously altered or harvested, provide for the recruitment of functional riparian forest in the active fluvial unit and management zone through natural processes and voluntary management intervention.

13. Objectives for upland stream areas

- (1) Within each watershed sub-unit shown on the map attached as Schedule 6, retain a minimum of 70% of the forest in the upland stream areas as hydrologically recovered.
- (2) For upland streams that are direct tributaries to Type I fish habitat or Type II fish habitat, retain sufficient vegetation to maintain stream bank and channel stability.
- (3) In upland stream areas with incised channels and steep gradients, retain a sufficient amount of trees and understory vegetation to maintain riparian plant communities that are dependent on high humidity micro-climates.
- (4) Despite subsection (1), less than 70% of the forest in the upland stream area may be retained, provided that:
 - (a) an intergovernmental process is completed;
 - (b) an assessment of watershed sensitivity to forest development and disturbance is completed by a qualified professional;
 - (c) an amount, type and distribution of forest cover that is sufficient to sustain natural hydrological and fluvial processes, based on the assessment in subsection (4)(b) is maintained; and
 - (d) an adaptive management plan is developed and implemented.

14. Objectives for sensitive watersheds

- (1) Within the sensitive watersheds shown on the map attached as Schedule 7, the following rates of harvest apply:
 - (a) for watersheds equal to, or greater than, 500 hectares, up to 5% of the watershed area may be harvested in a 5-year period;
 - (b) for watersheds less than 500 hectares, up to 10% of the watershed area may be harvested in a 10-year period.
- (2) Despite subsection (1), no harvesting may occur in sensitive watersheds with an equivalent clearcut area that is equal to or greater than 20%.

- (3) Despite subsections (1) and (2), a rate of harvest or an equivalent clearcut area that exceeds the specified limits may be maintained, provided that:
- (a) an intergovernmental process is completed;
 - (b) an assessment of watershed sensitivity to past, current and proposed forest development and disturbance is completed by a qualified professional;
 - (c) an amount, type and distribution of forest cover that is sufficient to sustain natural hydrological and fluvial processes, based on the assessment in subsection (3)(b) is maintained; and
 - (d) an adaptive management plan is developed and implemented.

Part 4 – Biodiversity

15. Objectives for forested swamps

- (1) Protect all forested swamps greater than 0.25 hectares.
- (2) Adjacent to forested swamps greater than 0.25 hectares, maintain a management zone with an average width equal to 1.5 tree lengths to protect the integrity of the forested swamp.
- (3) Within the management zone required under subsection (2), maintain at least 70% of the forest as mature forest and old forest.
- (4) Despite subsections (2) and (3), the amount of mature forest and old forest retained in the management zone may be reduced to 60%, provided that:
 - (a) the amount of mature forest and old forest to be retained is sufficient to maintain the integrity of the forested swamp; and
 - (b) an adaptive management plan is developed and implemented.
- (5) Where previous alteration or harvesting has reduced the amount of mature forest and old forest below the levels required under subsection (3) or (4), provide for the recruitment of mature forest and old forest in that management zone through natural processes and voluntary management intervention.

- (6) Areas retained to meet the requirements in subsections (1) and (2), must be documented and submitted as digital spatial data at the end of each calendar year to the Council of the Haida Nation and the Province of British Columbia.

16. Objectives for ecological representation

- (1) For each common site series and each rare site series in a landscape unit, retain an amount of old forest equal to or greater than the landscape unit targets listed in Schedule 10.
- (2) Where practicable, include within old forest retention areas retained to meet the requirements in subsection (1), habitat for local species at risk and regionally important wildlife species including, but not limited to:
 - (a) Northern Goshawk nesting and foraging habitat;
 - (b) Marbled Murrelet nesting habitat, Great Blue Heron nesting habitat, and Northern Saw-whet Owl core nesting areas; and
 - (c) Black Bear dens and denning habitat.
- (3) Areas retained to meet the requirements in subsection (1), must be documented and submitted as digital spatial data at the end of each calendar year to the Council of the Haida Nation and the Province of British Columbia.
- (4) If there is insufficient old forest available to meet the targets in subsection (1), identify and retain, and recruit where necessary, through natural processes and voluntary management intervention, forest stands to meet representation requirements in the shortest possible timeframe.

17. Objectives for red-listed and blue-listed ecological communities

- (1) Protect each occurrence of a red-listed and blue-listed ecological community that is a minimum of 0.25 hectares in size.
- (2) Despite subsection (1), up to 5% of the area of each type of red-listed ecological community occurring in a development area may be altered or harvested if required for road access or to address a safety concern.
- (3) Despite subsection (1), up to 30% of the area of each blue-listed ecological community occurring in a development area may be altered or harvested if required for road access or to address a safety concern.

- (4) Despite subsection (1), 30% of the area of each blue-listed ecological community occurring in a development area may be altered or harvested for purposes other than those described under subsection (3), provided that an intergovernmental process is completed.
- (5) Areas retained to meet the requirements in subsections (1) to (4), must be documented and submitted as digital spatial data at the end of each calendar year to the Council of the Haida Nation and the Province of British Columbia.

Part 5 – Wildlife

18. Objectives for Black Bear dens

- (1) Protect all Black Bear dens within a reserve zone, measuring at least 20 meters in width, around the Black Bear den.
- (2) Despite subsection (1), alteration or removal of a Black Bear den or its reserve zone, or both, may occur, provided that:
 - (a) an intergovernmental process is completed;
 - (b) the alteration or removal is required for road access or to address a safety concern; and
 - (c) the alteration or removal does not occur during the winter hibernation season.
- (3) Adjacent to any reserve zone required in subsection (1), maintain a management zone with an average width equal to 1.0 tree length, measured from the outer edge of the reserve zone, to protect the integrity of the reserve zone.
- (4) Where practicable, maintain suitable western redcedar and yellow-cedar in management zones, for long term Black Bear den recruitment.
- (5) Within the management zone required under subsection (3), alteration or removal of trees may occur, outside of the winter hibernation season, to:
 - (a) accommodate operational requirements for road and bridge construction, where no practicable alternative exists;

- (b) accommodate road maintenance and deactivation, the removal of danger trees, and brushing and clearing within the right-of-way, for safety purposes, on any existing road under active tenure; or,
 - (c) mitigate the impact of windthrow.
- (6) All existing and newly discovered Black Bear dens must be documented and submitted to the Council of the Haida Nation and the Province of British Columbia at the end of each calendar year.
- (7) Where practicable, include trees, snags, stumps and logs that are greater than 0.80 meters in diameter within stand level retention, for the recruitment of future denning habitat.

19. Objectives for Marbled Murrelet nesting habitat

- (1) Maintain an amount of Marbled Murrelet nesting habitat within each landscape unit equal to or greater than the target area listed in Schedule 9.
- (2) Marbled Murrelet habitat referred to in subsection (1) must conform to areas shown in Schedule 11 or must be identified as Class 1 or 2 Marbled Murrelet nesting habitat by a qualified professional.

20. Objectives for Northern Goshawk habitat

- (1) Protect all Northern Goshawk reserves shown on the map attached as Schedule 12.
- (2) When a Northern Goshawk nest is discovered that is not located in a reserve shown on Schedule 12:
 - (a) report the location to the Province of British Columbia and to the Council of the Haida Nation upon discovery;
 - (b) maintain a restricted activity zone with a minimum radial width of 800 meters around the nest site to protect the nest area from disturbance during the Northern Goshawk breeding season; and
 - (c) maintain a reserve zone around the nest site, that is a minimum of 200 hectares in area, and that maximizes the best available nesting and foraging habitat, to protect the integrity of the nest site.
- (3) Where some or all of the forest within Northern Goshawk nesting area reserves has been previously altered or harvested, provide for the recruitment of mature forest and

old forest in that reserve through natural processes and voluntary management intervention.

- (4) Despite subsections (1) and (2), a Northern Goshawk reserve shown on Schedule 12 and a Northern Goshawk reserve zone may be reduced, provided that:
 - (a) an intergovernmental process is completed;
 - (b) the reduction is required for road access, where no practicable alternative exists, or to address a safety concern;
 - (c) the reduction does not occur during the Northern Goshawk breeding season; and
 - (d) there is no net loss to the Northern Goshawk reserve area.

21. Objectives for Great Blue Heron nesting habitat

- (1) Protect Great Blue Heron nest sites with a reserve zone with a minimum size of 45 hectares and with a minimum distance of 350 meters from any nest site to the edge of the reserve.
- (2) Adjacent to any reserve zone required in subsection (1), maintain a restricted activity zone of a minimum of 150 meters measured from the outer edge of the reserve zone during the Great Blue Heron breeding season.
- (3) Report the location of all new Great Blue Heron nest sites to the Province of British Columbia and to the Council of the Haida Nation when discovered.

22. Objectives for Northern Saw-whet Owl nesting habitat

- (1) Protect all Northern Saw-whet Owl reserves shown on the map attached as Schedule 12.
- (2) When a Northern Saw-whet Owl nest is discovered that is not located in a reserve shown on Schedule 12, maintain a reserve zone measuring at least 10 hectares, centred on the Northern Saw-whet Owl nest.
- (3) Where practicable, maintain Northern Saw-whet Owl core nesting areas within stand level retention distributed across the landscape with a maximum inter-patch spacing distance of 1,400 meters.
- (4) Report the location of any new Northern Saw-whet Owl nest to the Province of British Columbia and the Council of the Haida Nation when discovered.

Part 6 – Forest Reserves

23. Areas reserved to meet landscape level objectives

- (1) Forest reserves shown on the map attached as Schedule 8 are reserved from harvest to assist in meeting objectives for ecological representation and objectives for Marbled Murrelet nesting habitat.
- (2) Despite subsection (1), the area of an individual forest reserve may be reduced by up to 5%, provided that:
 - (a) specified results or strategies address all targets listed in Schedules 9 and 10 for the applicable landscape unit;
 - (b) the remaining reserve is no less than 5 hectares in area; and
 - (c) the reduction is necessary to:
 - i. accommodate the operational requirements for road and bridge construction, where no practicable alternative exists;
 - ii. accommodate road maintenance and deactivation, the removal of danger trees, and brushing and clearing within the right-of-way, for safety purposes, on any existing road under active tenure; or,
 - iii. mitigate the impact of windthrow.
- (3) Despite subsection (1), any portion of a forest reserve may be moved to another location within the same landscape unit if:
 - (a) an intergovernmental process is completed;
 - (b) specified results or strategies address all targets listed in Schedules 9 and 10 for the applicable landscape unit;
 - (c) the portion is no larger than 20 hectares;
 - (d) areas retained are greater than 200 meters in width;
 - (e) the relocation does not result in any forest reserve that is less than 5 hectares in area; and
 - (f) the relocation follows the recommendations of an assessment completed by a qualified professional.

- (4) Forest reserves and variances to forest reserves made in accordance with subsections (1) to (3) must be documented and submitted as digital spatial data at the end of each calendar year to the Council of the Haida Nation and the Province of British Columbia.

Part 7 – Transition

24. Application of this Order

- (1) 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.
- (2) The period of time under section 8(2)(b) of the *Forest and Range Practices Act* is six months, starting on the date this Order comes into effect as specified in subsection (1).



The Honourable Steve Thomson
Minister of Natural Resource Operations

December 16, 2010
Date

Schedules to this Order

Schedule 1	Landscape Units Covered by this Order
Schedule 2	Haida Traditional Features
Schedule 3	Cedar Stewardship Areas
Schedule 4	Type I and Type II Fish Habitat
Schedule 5	Tree Heights
Schedule 6	Upland Stream Area Watershed Sub-Units
Schedule 7	Sensitive Watersheds
Schedule 8	Forest Reserves
Schedule 9	Marbled Murrelet Nesting Habitat Targets
Schedule 10	Ecological Representation Targets by Landscape Unit (LU)
Schedule 11	Marbled Murrelet Nesting Habitat
Schedule 12	Northern Goshawk and Northern Saw-whet Owl Reserves
Schedule 13	Red-Listed and Blue-Listed Ecological Communities

Schedule 1

Landscape Units Covered by this Order



 Landscape Units

1 : 1,150,000

0 20 40 km

Albers Equal Area Conic Projection, NAD 83

**Ministry of Natural
Resource Operations**

West Coast Region

November 25, 2010



Note:
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<http://tpnran.env.gov.bc.ca/pub/outgoing/dist/HaidaGwaii/Objects/data/>



Schedule 2

Haida Traditional Features

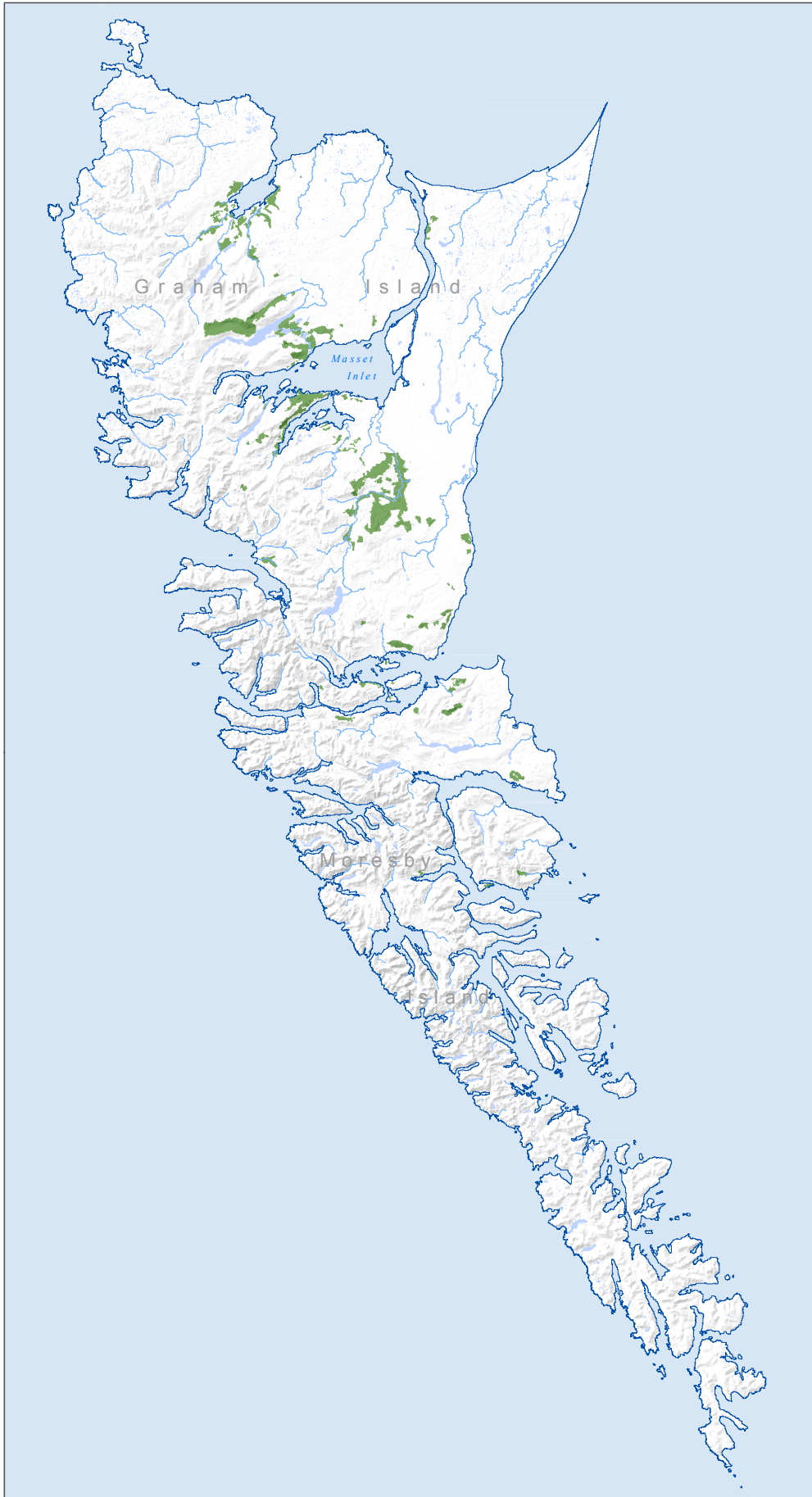
Class 1:	Class 2:	
Village/Seasonal Village	Midden	Lookout site
Inland Camp/Camp	Bear Trap	Fort
Burial Site	Fish Weir	Cache
Identified Oral History site	Cave	Canoe run
Identified Spiritual site	Petroglyph	Shoreline habitation site
	Lithic production site	Rock Shelter
	Trail	Karst Feature

Haida Traditional Forest Features

Class 1:		Class 2:	
Fairy-slipper	<i>Calypso bulbosa</i>	Common harebell	<i>Campanula rotundifolia</i>
Black hawthorn	<i>Crataegus douglasii</i>	Common juniper	<i>Juniperus communis</i>
Northern riceroot	<i>Fritillaria camschatcensis</i>	Pacific crab apple	<i>Malus fusca</i>
Devil's club	<i>Oplopanax horridus</i>	Yellow pond-lily	<i>Nuphar lutea</i>
Highbush-cranberry	<i>Viburnum edule</i>	Stink currant	<i>Ribes bracteosum</i>
		Black swamp gooseberry	<i>Ribes lacustre</i>
		Trailing black currant	<i>Ribes laxiflorum</i>
		Cloudberry	<i>Rubus chamaemorus</i>
		Stinging nettle	<i>Urtica dioica</i>
		Indian hellebore	<i>Veratrum viride</i>

Class 3:			
Northern maiden-hair	<i>Adiantum aleuticum</i>	Licorice fern	<i>Polypodium glycyrrhiza</i>
Old man's beard	<i>Alectoria sarmentosa</i>	Sword fern	<i>Polystichum munitum</i>
Narcissus anemone	<i>Anemone narcissiflora</i>	Black cottonwood	<i>Populus balsamifera</i>
Sitka columbine	<i>Aquilegia formosa</i>	Common silverweed	<i>Potentilla anserine</i>
Kinnikinnick	<i>Arctostaphylos uva-ursi</i>	Bracken fern	<i>Pteridium aquilinum</i>
Alpine bitter-cress	<i>Cardamine bellidifolia</i>	Labrador tea	<i>Rhododendron groenlandicum</i>
Snake liverwort	<i>Conocephalum conicum</i>	Thimbleberry	<i>Rubus parviflorus</i>
Round-leaved sundew	<i>Drosera rotundifolia</i>	American glasswort	<i>Sarcocornia pacifica</i>
Spiny wood fern	<i>Dryopteris expansa</i>	Hooker's willow	<i>Salix hookeriana</i>
Oregon beaked-moss	<i>Eurhynchium oreganum</i>	Scouler's willow	<i>Salix scouleriana</i>
Large-leaved avens	<i>Geum macrophyllum</i>	Sitka willow	<i>Salix sitchensis</i>
Beach pea	<i>Lathyrus japonicas</i>	Bog blueberry	<i>Vaccinium uliginosum</i>
Running club-moss	<i>Lycopodium clavatum</i>	Lingonberry	<i>Vaccinium vitis-idaea</i>
Single delight	<i>Moneses uniflora</i>	Oval-leaved blueberry	<i>Vaccinium ovalifolium</i>
One-sided wintergreen	<i>Orthilia secunda</i>	Giant vetch	<i>Vicia nigricans</i>
Cloud lichen	<i>Platismatia glauca</i>		

Schedule 3 Cedar Stewardship Areas



 Cedar Stewardship Area

1 : 1,150,000

0 20 40 km

Albers Equal Area Conic Projection, NAD 83

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West Coast Region

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Note:

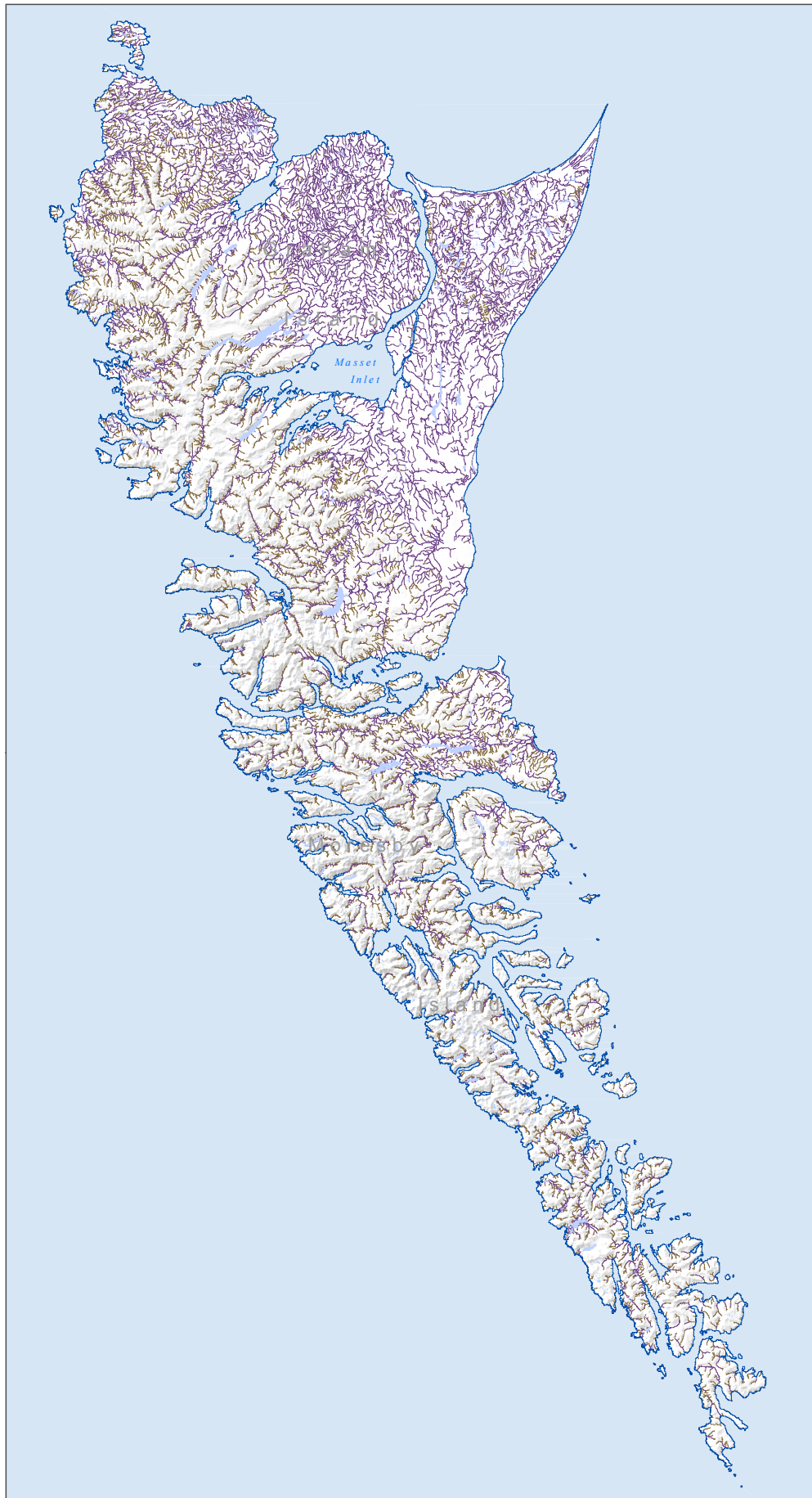
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Schedule 4

Type I and Type II Fish Habitat



— Type I Fish Habitat

— Type II Fish Habitat

Qualifier:

The streams portrayed on this map are a representation of Type I and Type II fish habitat. Not all fish-bearing streams are shown on this map. Field identification of all Type I and Type II fish habitat is required to determine the correct classification.

1 : 1,150,000

0 20 40 km

Albers Equal Area Conic Projection, NAD 83

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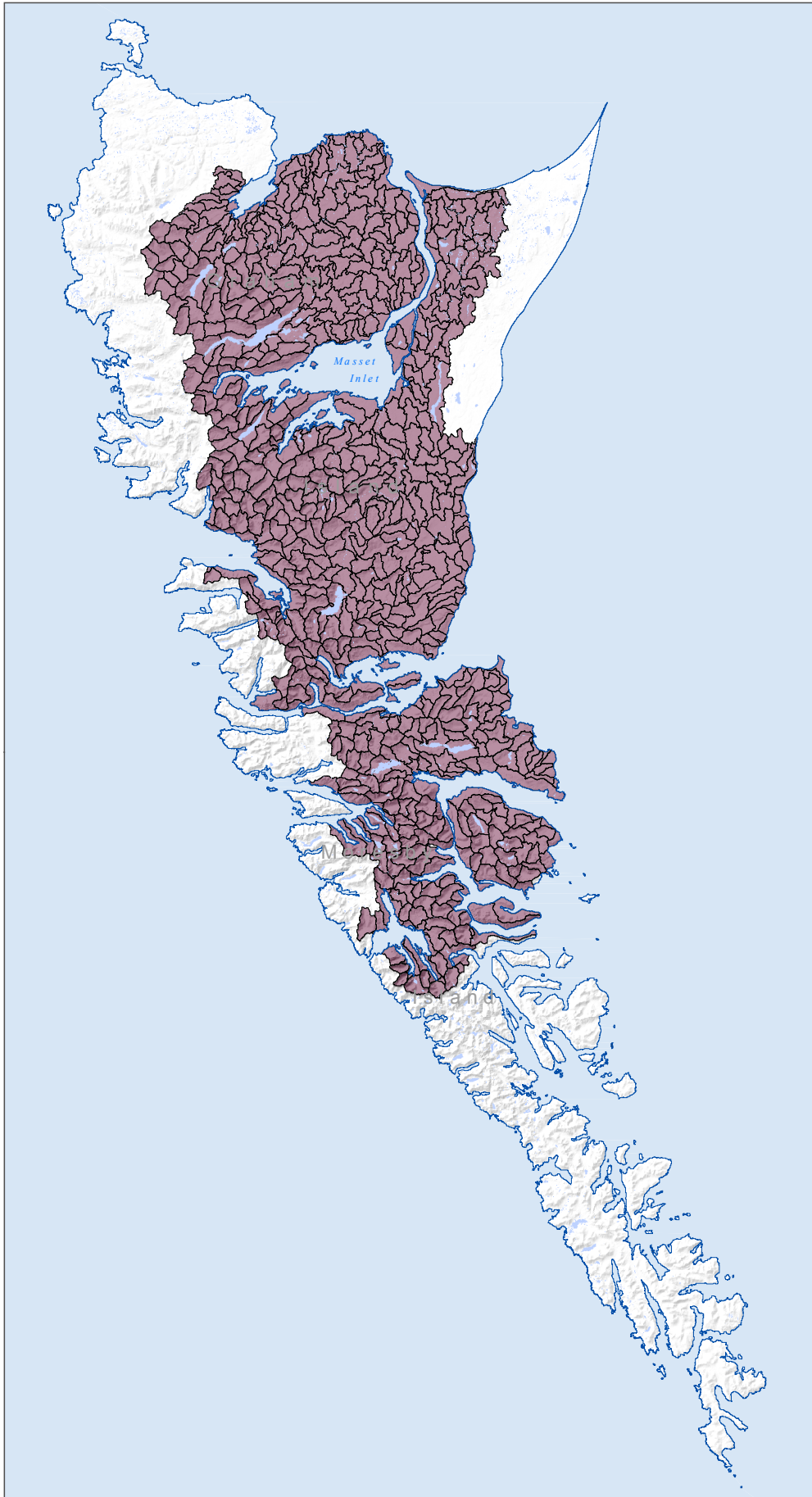
Schedule 5

Tree Heights

Biogeoclimatic Unit	Site Series	Site Series Name	Column 'A' Heights for Young/Mature Stands	Column 'B' Heights for Old Stands
CWHvh2	1	CwHw - Salal	35	40
CWHvh2	2	PIYc - Rhacomitrium	30	30
CWHvh2	3	CwYc - Salal	25	30
CWHvh2	4	HwSs - Lanky moss	45	55
CWHvh2	5	CwSs - Sword fern	40	50
CWHvh2	6	CwSs - Foamflower	45	55
CWHvh2	7	CwSs - Devil's club	35	45
CWHvh2	8	Ss - Lily-of-the-valley	40	50
CWHvh2	9	Ss - Trisetum	50	60
CWHvh2	10	Dr - Lily-of-the-valley	50	60
CWHvh2	11	CwYc - Goldthread	20	25
CWHvh2	13	CwSs - Skunk cabbage	25	30
CWHvh2	14	Ss - Salal	20	25
CWHvh2	15	Ss - Kindbergia	40	50
CWHvh2	16	Ss - Reedgrass	30	40
CWHvh2	17	Ss - Sword fern	50	60
CWHwh1	1	HwSs - Lanky moss	40	45
CWHwh1	2	CwSs - Salal	35	40
CWHwh1	3	CwSs - Sword fern	45	55
CWHwh1	4	CwHw - Salal	25	30
CWHwh1	5	CwSs - Foamflower	45	55
CWHwh1	6	CwSs - Conocephalum	35	40
CWHwh1	7	Ss - Lily-of-the-valley	45	55
CWHwh1	8	Ss - Trisetum	50	60
CWHwh1	9	Dr - Lily-of-the-valley	50	60
CWHwh1	10	CwYc - Goldthread	20	25
CWHwh1	11	PIYc - Sphagnum	15	15
CWHwh1	12	CwSs - Skunk cabbage	20	25
CWHwh1	13	Ss - Salal	30	40
CWHwh1	14	Ss - Kindbergia	40	50
CWHwh1	15	Ss - Reedgrass	40	50
CWHwh1	16	Ss - Sword fern	50	60
CWHwh2	1	HwSs - Lanky moss	35	40
CWHwh2	2	CwHw - Salal	30	35
CWHwh2	3	CwSs - Foamflower	35	40
CWHwh2	4	CwSs - Conocephalum	30	35
CWHwh2	5	CwYc - Goldthread	20	25
CWHwh2	6	CwSs - Skunk cabbage	20	25
MHwh	1	HmSs - Blueberry	25	35
MHwh	2	HmYc - Mountain-heather	25	35
MHwh	3	SsHm - Reedgrass	25	35
MHwh	4	HmYc - Goldthread	25	35
MHwh	5	YcHm - Twistedstalk	25	35
MHwh	6	HmYc - Deer-cabbage	25	35
MHwh	7	YcHm - Hellebore	25	35
MHwh	8	HmYc - Sphagnum	25	35
MHwh	9	YcHm - Skunk cabbage	25	35

Schedule 6

Upland Stream Area Watershed Sub-Units



 Watershed Sub-Unit

1 : 1,150,000

0 20 40 km

Albers Equal Area Conic Projection, NAD 83

**Ministry of Natural
Resource Operations**

West Coast Region

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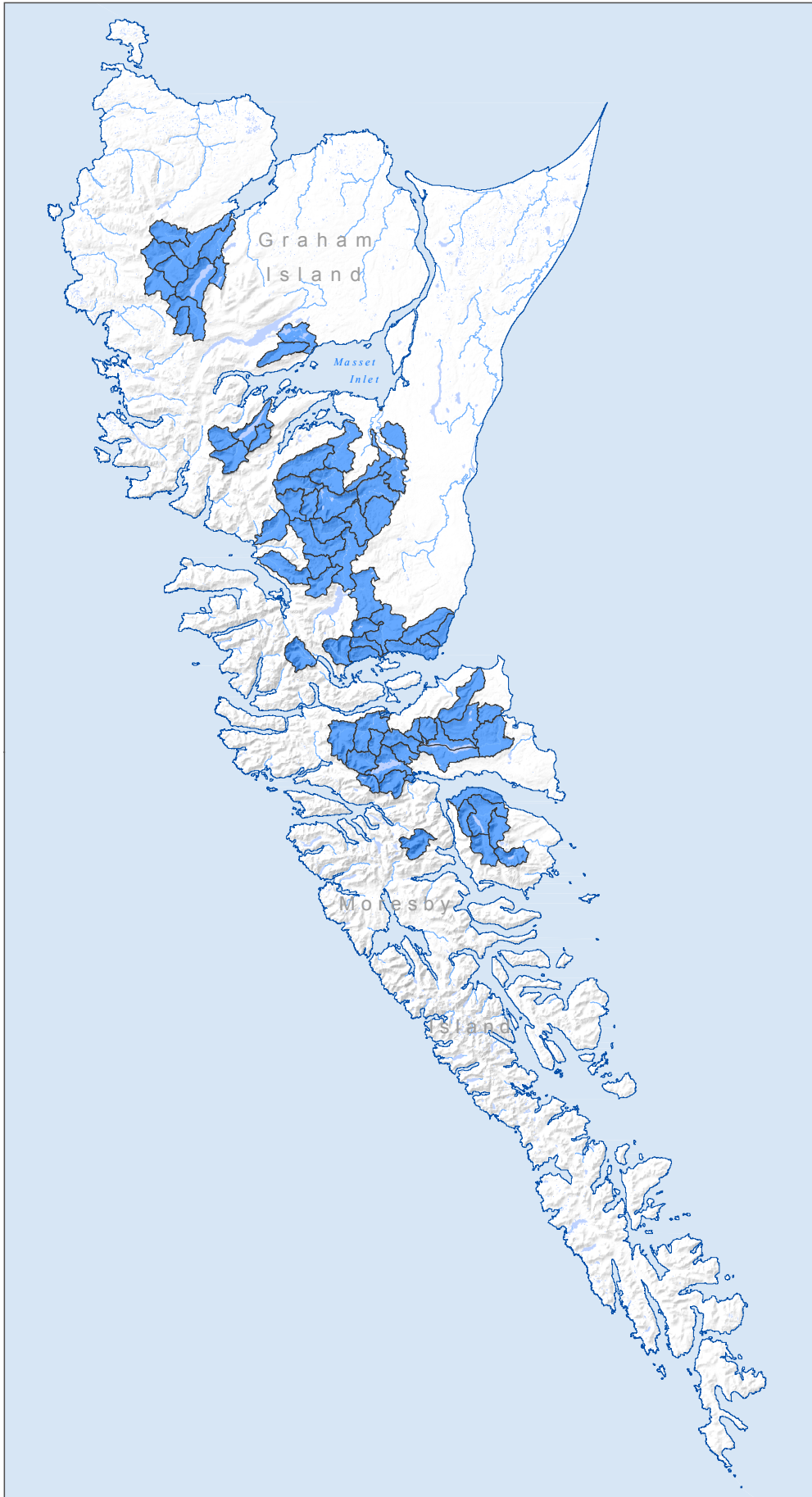
Note:

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Schedule 7 Sensitive Watersheds



 Sensitive Watershed

1 : 1,150,000

0 20 40 km

Albers Equal Area Conic Projection, NAD 83

Ministry of Natural
Resource Operations
West Coast Region

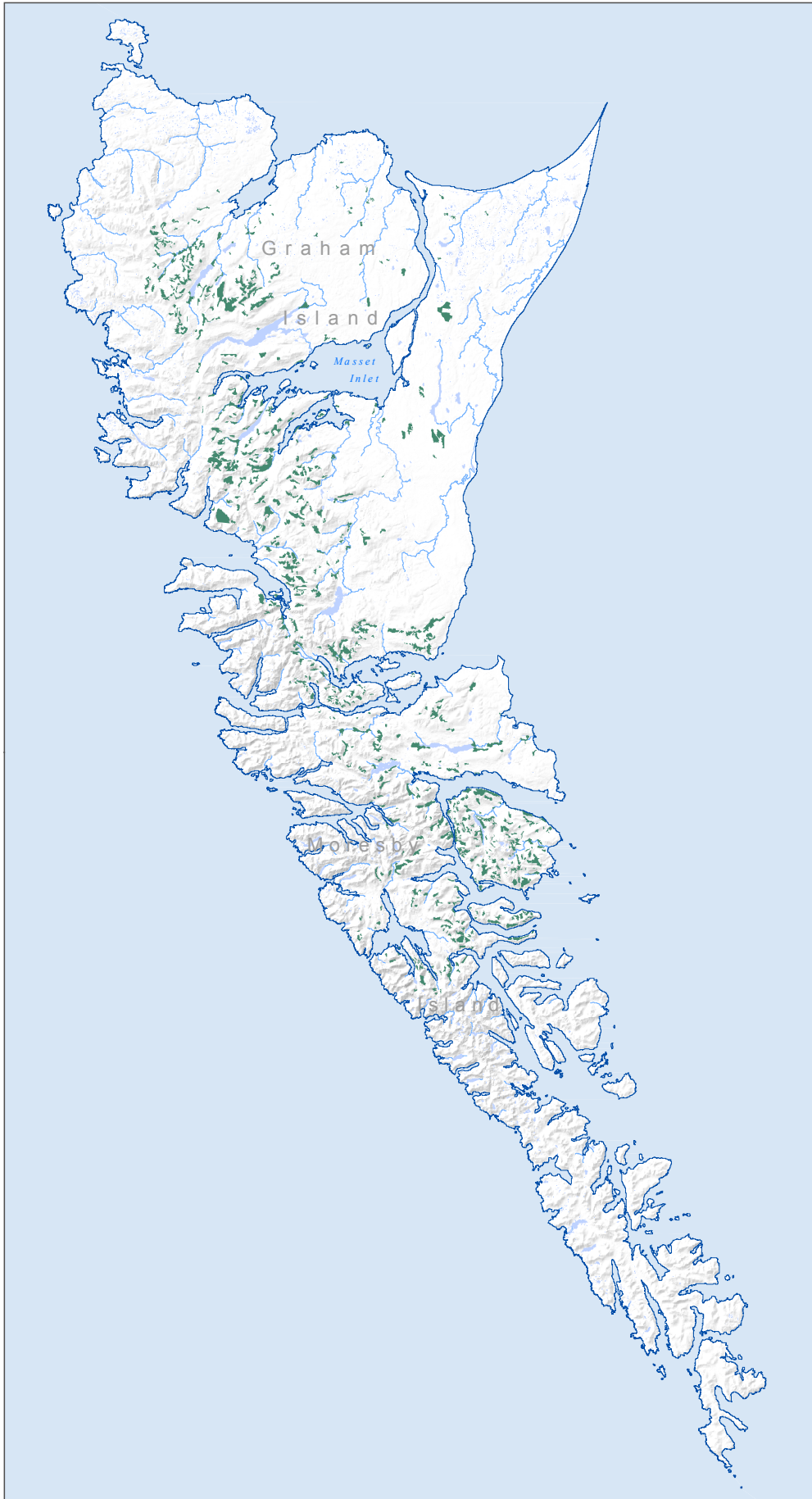
November 25, 2010



Note:
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Schedule 8 Forest Reserves



1 : 1,150,000

0 20 40 km

Albers Equal Area Conic Projection, NAD 83

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West Coast Region

November 25, 2010



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Schedule 9

Marbled Murrelet Nesting Habitat Targets

Landscape Unit	Total Marbled Murrelet Nesting Habitat (ha)	Marbled Murrelet Nesting Habitat Target (ha)
Athlow Bay	8,060	6,045
Beresford	11,794	8,845
Bigsby	529	397
Eden Lake	10,244	7,683
Gowgaia	685	513
Gudal	3,998	2,998
Hibben	8,088	6,066
Honna	4,911	3,683
Ian	1,670	1,253
Jalun	3,346	2,510
Kunghit Island	1,200	900
Louise Island	6,224	4,668
Lower Yakoun	1,513	1,134
Lyell Island Group	4,305	3,229
Masset Inlet	6,508	4,881
Naikoon	2,039	1,529
Otun	2,922	2,191
Rennell	7,037	5,278
Sewell	4,651	3,488
Skidegate Lake	2,917	2,188
Skincuttle	4,076	3,057
Tasu	5,250	3,938
Tlell	4,067	3,050
Yakoun Lake	2,688	2,016

Schedule 10

Ecological Representation Targets by Landscape Unit (LU)

BEC Variant	Site Series	Site Series Name	Section 15/17 Exceptions	Bioregional Target %	Total Area - Bioregion	Target Area - Bioregion	Rarity Class
CWHvh2	1	CwHw - Salal		30%	85,390	25,617	COMMON
CWHvh2	2	PIYc - Rhacomitrium		70%	711	498	RARE
CWHvh2	3	CwYc - Salal		70%	14,178	9,925	RARE
CWHvh2	4	HwSs - Lanky moss		30%	45,770	13,731	COMMON
CWHvh2	5	CwSs - Sword fern	BLUE	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies			
CWHvh2	6	CwSs - Foamflower		70%	25,721	18,005	RARE
CWHvh2	7	CwSs - Devil's club	BLUE	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies			
CWHvh2	8	Ss - Lily-of-the-valley	RED	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies			
CWHvh2	9	Ss - Trisetum	RED	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies			
CWHvh2	10	Dr - Lily-of-the-valley	BLUE	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies			
CWHvh2	11	CwYc - Goldthread		70%	21,426	14,998	RARE
CWHvh2	12	PIYc - Sphagnum		70%	13,860	9,702	RARE
CWHvh2	13	CwSs - Skunk cabbage	Forested Swamp	Section 15 "Objectives for forested swamps" applies			
CWHvh2	14	Ss - Salal		70%	689	483	RARE
CWHvh2	15	Ss - Kindbergia		70%	4,359	3,051	RARE
CWHvh2	16	Ss - Reedgrass	BLUE	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies			
CWHvh2	17	Ss - Sword fern		70%	76	53	RARE
CWHwh1	1	HwSs - Lanky moss		30%	190,900	57,270	COMMON
CWHwh1	2	CwSs - Salal		70%	8,302	5,811	RARE
CWHwh1	3	CwSs - Sword fern	BLUE	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies			
CWHwh1	4	CwHw - Salal		30%	76,830	23,049	COMMON
CWHwh1	5	CwSs - Foamflower		30%	29,957	8,987	COMMON
CWHwh1	6	CwSs - Conocephalum	BLUE	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies			
CWHwh1	7	Ss - Lily-of-the-valley	RED	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies			
CWHwh1	8	Ss - Trisetum	RED	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies			
CWHwh1	9	Dr - Lily-of-the-valley		70%	404	283	RARE
CWHwh1	10	CwYc - Goldthread		30%	80,339	24,102	COMMON
CWHwh1	11	PIYc - Sphagnum		70%	24,036	16,825	RARE
CWHwh1	12	CwSs - Skunk cabbage	Forested Swamp	Section 15 "Objectives for forested swamps" applies			
CWHwh1	13	Ss - Salal		70%	305	213	RARE
CWHwh1	14	Ss - Kindbergia	BLUE	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies			
CWHwh1	15	Ss - Reedgrass	BLUE	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies			
CWHwh1	16	Ss - Sword fern		70%	197	138	RARE
CWHwh1	17	Ss - Slough sedge		70%	35	25	RARE
CWHwh2	1	HwSs - Lanky moss		30%	44,317	13,295	COMMON
CWHwh2	2	CwHw - Salal		70%	5,505	3,854	RARE
CWHwh2	3	CwSs - Foamflower		70%	6,573	4,601	RARE
CWHwh2	4	CwSs - Conocephalum	BLUE	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies			
CWHwh2	5	CwYc - Goldthread		70%	4,089	2,862	RARE
CWHwh2	6	CwSs - Skunk cabbage	Forested Swamp	Section 15 "Objectives for forested swamps" applies			
MHwh	1	HmSs - Blueberry		70%	12,636	8,845	RARE
MHwh	2	HmYc - Mountain-heather		70%	3,867	2,707	RARE
MHwh	3	SsHm - Reedgrass	BLUE	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies			
MHwh	4	HmYc - Goldthread		70%	3,194	2,236	RARE
MHwh	5	YcHm - Twistedstalk	BLUE	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies			
MHwh	6	HmYc - Deer-cabbage		70%	597	418	RARE
MHwh	7	YcHm - Hellebore		70%	186	130	RARE
MHwh	8	HmYc - Sphagnum		70%	382	267	RARE
MHwh	9	YcHm - Skunk cabbage		70%	95	66	RARE

Landscape units entirely within protected areas are not shown on this schedule

Targets less than 10 hectares are disregarded

Schedule 10

Ecological Representation Targets by Landscape Unit (LU)

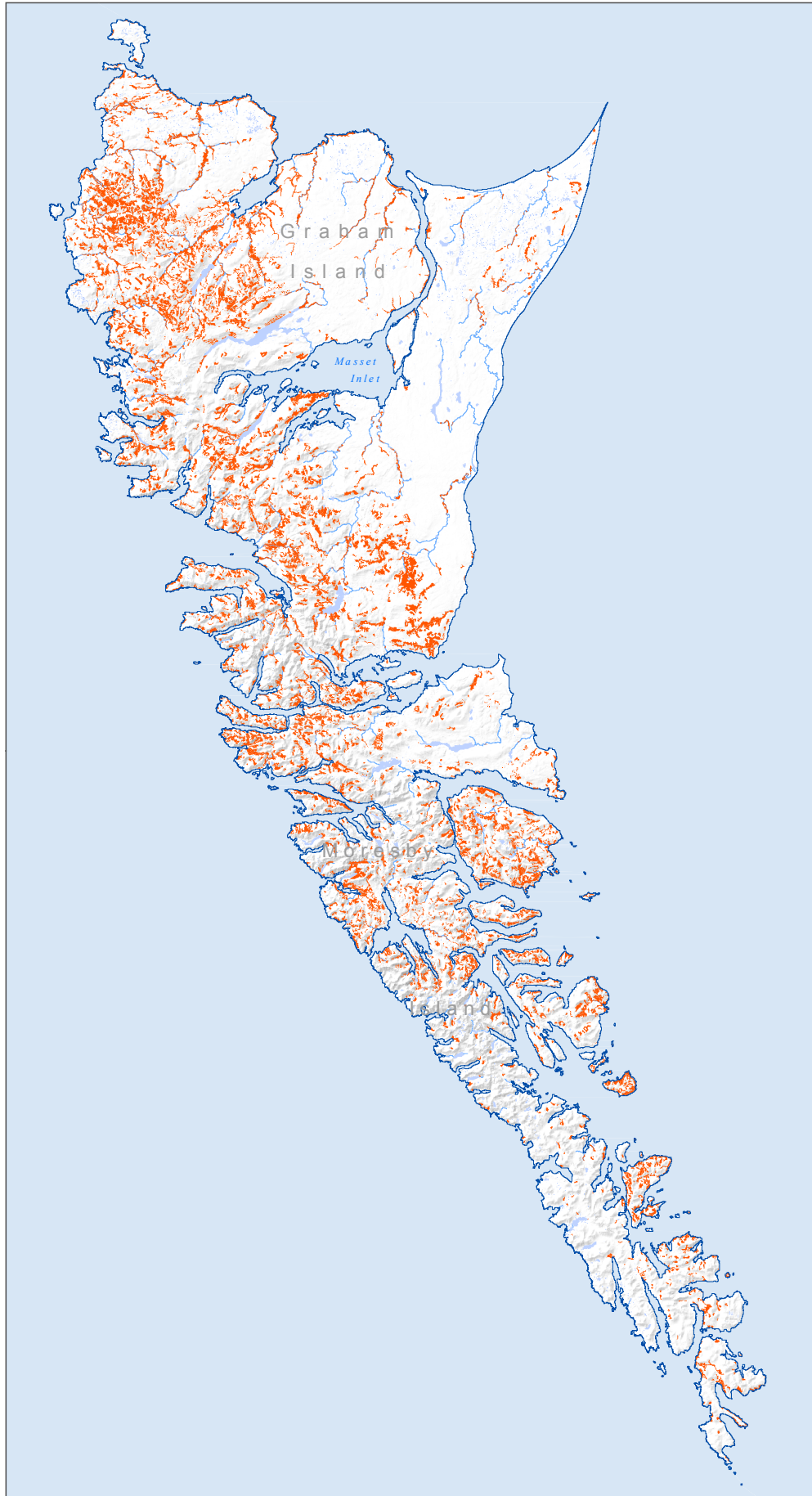
BEC Variant	Site Series	Site Series Name	Landscape Unit target areas (hectares)													
			Eden Lake	Honna	Ian	Louise Island	Lower Yakoun	Masset Inlet	Naikoon	Orun	Rennell	Sewell	Skidegate Lake	Tasu	Tlell	Yakoun Lake
CWHvh2	1	CwHw - Salal	Target met in protected areas													
CWHvh2	2	PIYc - Rhacomitrium					10									
CWHvh2	3	CwYc - Salal	Target met in protected areas													
CWHvh2	4	HwSs - Lanky moss	Target met in protected areas													
CWHvh2	5	CwSs - Sword fern	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies													
CWHvh2	6	CwSs - Foamflower									2,156	25		751		
CWHvh2	7	CwSs - Devil's club	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies													
CWHvh2	8	Ss - Lily-of-the-valley	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies													
CWHvh2	9	Ss - Trisetum	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies													
CWHvh2	10	Dr - Lily-of-the-valley	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies													
CWHvh2	11	CwYc - Goldthread	Target met in protected areas													
CWHvh2	12	PIYc - Sphagnum	Target met in protected areas													
CWHvh2	13	CwSs - Skunk cabbage	Section 15 "Objectives for forested swamps" applies													
CWHvh2	14	Ss - Salal												16		
CWHvh2	15	Ss - Kindbergia	Target met in protected areas													
CWHvh2	16	Ss - Reedgrass	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies													
CWHvh2	17	Ss - Sword fern	Target met in protected areas													
CWHwh1	1	HwSs - Lanky moss	1,910	572	778	878	975	2,245	1,164	1,160	19	1,793	3,147		1,084	614
CWHwh1	2	CwSs - Salal	10	15	627	1,030	190	2,181		10		486	396		257	382
CWHwh1	3	CwSs - Sword fern	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies													
CWHwh1	4	CwHw - Salal	149	516	1,986	390	3,090	1,063	6,090	2,434	10	328	1,564		3,354	409
CWHwh1	5	CwSs - Foamflower	398	497	20	103	15	44	267	57		262	101		34	18
CWHwh1	6	CwSs - Conocephalum	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies													
CWHwh1	7	Ss - Lily-of-the-valley	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies													
CWHwh1	8	Ss - Trisetum	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies													
CWHwh1	9	Dr - Lily-of-the-valley				128	51					16				48
CWHwh1	10	CwYc - Goldthread	1,035	218	793	263	796	272	7,665	5,350		25	100		1,530	129
CWHwh1	11	PIYc - Sphagnum	938	76	478	41	478	65	5,634	5,690	61	49	258		861	95
CWHwh1	12	CwSs - Skunk cabbage	Section 15 "Objectives for forested swamps" applies													
CWHwh1	13	Ss - Salal										108	42			31
CWHwh1	14	Ss - Kindbergia	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies													
CWHwh1	15	Ss - Reedgrass	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies													
CWHwh1	16	Ss - Sword fern		39									21		25	
CWHwh1	17	Ss - Slough sedge	Target met in protected areas													
CWHwh2	1	HwSs - Lanky moss	880	510	723	750	204	1,591			368	1,204	1,090	12	255	594
CWHwh2	2	CwHw - Salal	25	10	608	165	123	1,868			72	81	124		454	244
CWHwh2	3	CwSs - Foamflower	2,042	1,008	20	36		76			13	231	259			148
CWHwh2	4	CwSs - Conocephalum	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies													
CWHwh2	5	CwYc - Goldthread	656	586	178	62	41	173			6	315	76		210	161
CWHwh2	6	CwSs - Skunk cabbage	Section 15 "Objectives for forested swamps" applies													
MHwh	1	HmSs - Blueberry	816	259	309	424	32	779			566	438	219	269		275
MHwh	2	HmYc - Mountain-heather		84	31	183	31	423			54	184	9	3		154
MHwh	3	SsHm - Reedgrass	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies													
MHwh	4	HmYc - Goldthread	73	158							191	33		77		24
MHwh	5	YcHm - Twistedstalk	Schedule 13 "Red-Listed and Blue-listed Ecological Communities" applies													
MHwh	6	HmYc - Deer-cabbage									56			12		
MHwh	7	YcHm - Hellebore	Target met in protected areas													
MHwh	8	HmYc - Sphagnum	10	75							63			21		
MHwh	9	YcHm - Skunk cabbage									13					

Landscape units entirely within protected areas are not shown on this schedule

Targets less than 10 hectares are disregarded

Schedule 11

Marbled Murrelet Nesting Habitat



 Class 1 and Class 2
Marbled Murrelet Nesting Habitat

1 : 1,150,000

0 20 40 km

Albers Equal Area Conic Projection, NAD 83

**Ministry of Natural
Resource Operations**

West Coast Region

November 25, 2010



Note:

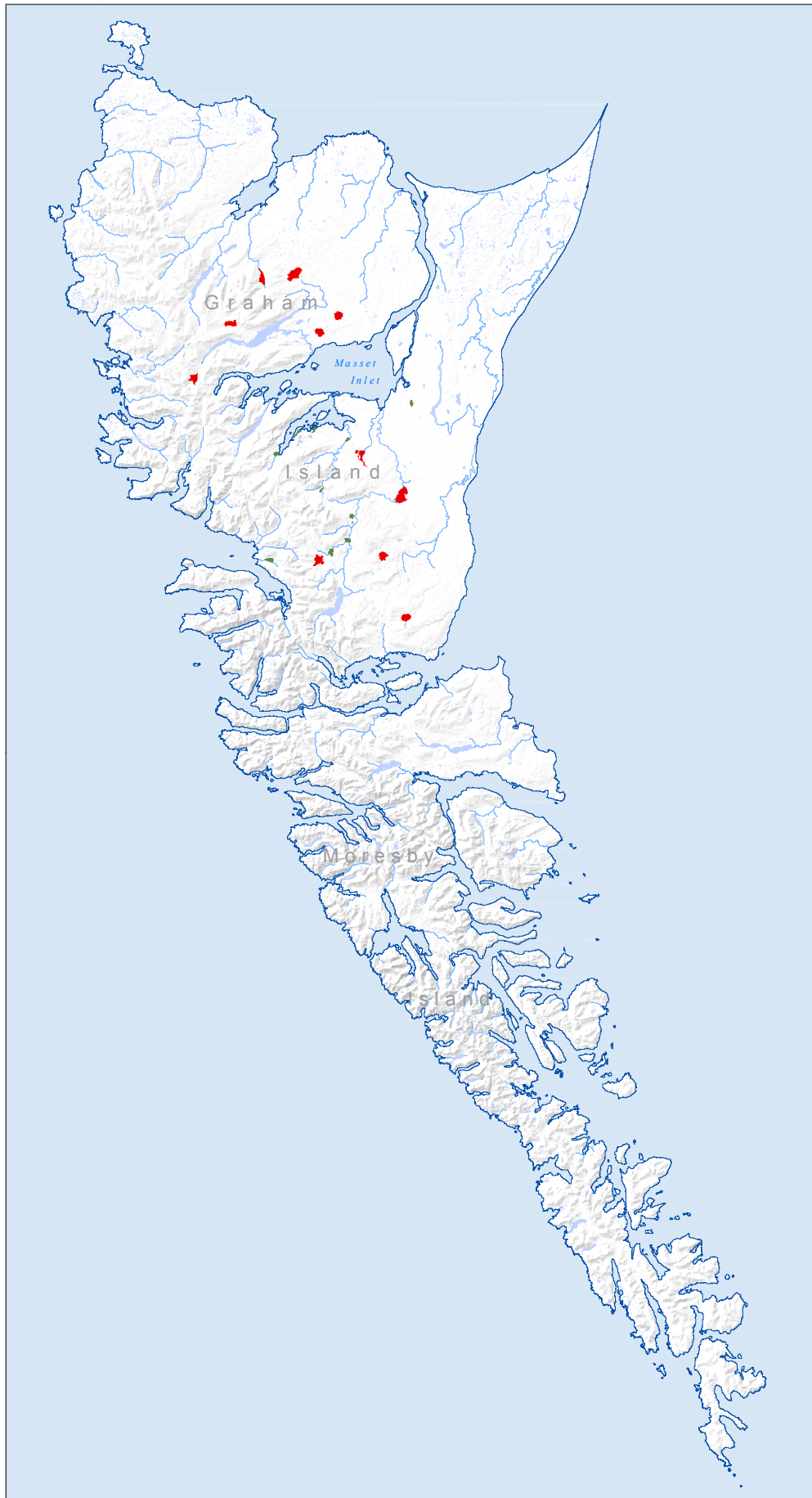
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Schedule 12

Northern Goshawk and Northern Saw-whet Owl Reserves



-  Northern Goshawk Reserve
-  Northern Saw-whet Owl Reserve

1 : 1,150,000

0 20 40 km

Albers Equal Area Conic Projection, NAD 83

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Resource Operations**

West Coast Region

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Schedule 13

Red-Listed and Blue-Listed Ecological Communities

Red-Listed Ecological Communities

Scientific Name	English Name	Biogeoclimatic Units
<i>Calamagrostis purpurascens</i> Herbaceous Vegetation	purple reedgrass Herbaceous Vegetation	CMA
<i>Carex macrocephala</i> Herbaceous Vegetation	large-headed sedge Herbaceous Vegetation	CWHwh1
<i>Carex sitchensis</i> / <i>Sphagnum</i> spp.	Sitka sedge / peat-mosses	CWHvh2/Wf51; CWHwh1/Wf51
<i>Myrica gale</i> / <i>Carex sitchensis</i>	sweet gale / Sitka sedge	CWHvh2/Wf52
<i>Picea sitchensis</i> / <i>Maianthemum dilatatum</i> Wet Hypermaritime 1	Sitka spruce / false lily-of-the-valley Wet Hypermaritime 1	CWHvh2/08; CWHwh1/07
<i>Picea sitchensis</i> / <i>Trisetum canescens</i>	Sitka spruce / tall trisetum	CWHvh2/09; CWHwh1/08
<i>Poa macrantha</i> Herbaceous Vegetation	dune bluegrass Herbaceous Vegetation	CWHwh1
<i>Ruppia maritima</i> Herbaceous Vegetation	beaked ditch-grass Herbaceous Vegetation	CWH/Em01

Blue-Listed Ecological Communities

Scientific Name	English Name	Biogeoclimatic Units
<i>Alnus rubra</i> / <i>Rubus spectabilis</i> / <i>Equisetum arvense</i>	red Alder / salmonberry / common horsetail	CWHvh/FI51; CWHvh2/10
<i>Carex lyngbyei</i> Herbaceous Vegetation	Lyngbye's sedge Herbaceous vegetation	CWH/Em05
<i>Carex sitchensis</i> - <i>Oenanthe sarmentosa</i>	Sitka sedge - Pacific water-parsley	CWHvh2/Wm50
<i>Chamaecyparis nootkatensis</i> - <i>Tsuga mertensiana</i> / <i>Streptopus lanceolatus</i>	yellow-cedar - mountain hemlock / rosy twistedstalk	MHwh1/05; MHwh2/05
<i>Deschampsia cespitosa</i> ssp. <i>beringensis</i> - <i>Aster subspicatus</i>	tufted hairgrass - Douglas' aster	CWH/Ed02
<i>Deschampsia cespitosa</i> ssp. <i>beringensis</i> - <i>Hordeum brachyantherum</i>	tufted hairgrass - meadow barley	CWH/Ed01
<i>Glyceria borealis</i> Fen	northern mannagrass Fen	CWHvh2
<i>Picea sitchensis</i> / <i>Calamagrostis nutkaensis</i>	Sitka spruce / Pacific reedgrass	CWHvh2/16; CWHwh1/15
<i>Picea sitchensis</i> / <i>Carex obnupta</i>	Sitka spruce / slough sedge	CWHvh2/18; CWHwh1/17
<i>Picea sitchensis</i> / <i>Eurhynchium oreganum</i>	Sitka spruce / Oregon beaked-moss	CWHvh2/15; CWHwh1/14
<i>Picea sitchensis</i> / <i>Malus fusca</i>	Sitka spruce / Pacific crab apple	CWHvh2/19; CWHwh1/18
<i>Picea sitchensis</i> / <i>Polystichum munitum</i>	Sitka spruce / sword fern	CWHvh2/17
<i>Picea sitchensis</i> - <i>Tsuga mertensiana</i> / <i>Calamagrostis nutkaensis</i>	Sitka spruce - mountain hemlock / Pacific reedgrass	MHwh1/03; MHwh2/03
<i>Thuja plicata</i> - <i>Picea sitchensis</i> / <i>Conocephalum conicum</i>	western redcedar - Sitka spruce / snake liverwort	CWHwh1/06; CWHwh2/04
<i>Thuja plicata</i> - <i>Picea sitchensis</i> / <i>Oplopanax horridus</i> Very Wet Hypermaritime 2	western redcedar - Sitka spruce / devil's club Very Wet Hypermaritime 2	CWHvh2/07
<i>Thuja plicata</i> - <i>Picea sitchensis</i> / <i>Polystichum munitum</i>	western redcedar - Sitka spruce / sword fern	CWHvh2/05; CWHwh1/03

Appendix F: Health and Vigour Criteria for Overstorey Crop Trees

Appendix 1: Health and Vigour Criteria for Overstory Crop trees

BASED ON SUSPECT INDICATORS (PROVINCIAL CRUISING MANUAL – JUNE 2007)

CONKS, Heartrot conks on roots, live branches or trunks, as considered below:

Conks are the fruiting bodies (sporophores) of decay fungi and are definite and reliable indicators of decay. Conks occur anywhere on the main stem, branches and exposed roots of the tree but appear most frequently around knots and on the underside of both dead branch stubs and live branches. Only specific root, butt and heart rot conks are suspect indicators. Slash conks are not suspect indicators.

It is necessary to be able to recognize the conks of the major heart rotting fungi found on living conifers and hardwoods. On conifers, the main conks to recognize are, *Echinodontium tinctorium*, *Phellinus (Fomes) pini*, *Phaeolus (Polyporous) schweinitzii* and *Fomitopsis (Fomes) pinicolii*. On hardwoods, the main conks are *Phellinus igniarius* and *Phellinus tremulae*. See the following host list for major and some minor heartwood decay species.

Conks vary in size and shape and therefore are hard to spot, particularly when they are just developing or occur on the upper trunk. Conks of *E. tinctorium* and *Phellinus pini*, frequently appear as a small hoof-like or shelf-like structure on the underside of dead branch stubs on the middle and/or lower trunk of an infected tree. Moss-covered branch stubs and burls often resemble conks, particularly when viewed from directly below; it is important therefore to view the tree from the side before making a decision.

P. schweinitzii

P. schweinitzii is the cause of brown cubical root and butt rot of most conifers but Douglas-fir and spruce are the most susceptible. The fruiting bodies may occur:

- on the base of a tree,
- on the ground up to 2 m from the tree where no exposed roots are evident, or
- on the exposed roots.

If a *P. schweinitzii* conk is mid-way between:

- Two living susceptible trees only one tree is considered to be infected.
- A highly susceptible species (e.g., Douglas-fir) and a less susceptible species (e.g., red cedar), the most susceptible species is considered to be infected.
- A living tree and a stump showing brown cubical rot, and it is not on a root of the live tree, it is assumed to be associated with the stump.

Blind Conks

Blind conks are pronounced swellings or depressions around knots caused mainly by *P. pini* on conifers and *P. tremulae* on aspen and if identified correctly, are definite indicators of decay (see Figure A.4). The swelling or depression results from the tree attempting to heal over an abortive conk; a newly developing conk; or a point from which an old conk has dropped. Non-typical forms may appear as small branch holes or branch stubs at the base of trees. This form is often found in over-mature Douglas-fir and balsam species in the coast-interior transition zone (e.g., Boston Bar). Therefore over-mature trees with basal branch stubs should be examined for blind conk.

Poor trees should have only those indicators which have a high chance of being blind conk such as large swollen knots and large caved-in knots. Do not call small knots and knot indicators on any species.

WOUNDS/ SCARS

A tree will be considered a non crop tree with a wound or scar on the main stem (or secondary leader) that is not recent in origin. This is interpreted as the injury having not occurred within approximately the past five years. These may be open or closed wounds and generally have the following characteristics:

- Aging - the scar or cat-face should show greyed or weathered wood and enough decay, when combined with other factors, indicates little or no value.

(PROVINCIAL CRUISING MANUAL – JUNE 2007)

- Severe Recent Wound²⁵ Wounding as described in the Wounding and Decay Guidebook (BC MoF 1997) identifies different damage types that may lead to decay and possibly death. The guidebook breaks out damage criteria by management regime and by species groups.

Species susceptibility to decay, ranked from greatest to least

Broadleaf

B, H, Lw, Ss and Cw under 60 years

Yc, Sx and Cw over 60 years

Fd, Pw

Pl, Py

Based on the species group use the following to help identify trees susceptible to mortality:

- | | |
|------------------------|---|
| Fd, Pl, Py and Pw: | <ul style="list-style-type: none">• A wound that girdles more than half the stem circumference. |
| ALL OTHER CONIFERS: | <ul style="list-style-type: none">• A wound girdles more than a third of stem circumference.• A wound on a supporting root within 1 m of the stem.• A gouge (splintered wood) any size. |
| All Broadleaf species: | <ul style="list-style-type: none">• A wound girdles more than a third of stem circumference.• A wound exceeding 400 cm² on the stem.• A wound on a supporting root within 1 m of the stem.• One gouge (splintered wood) any size. |

²⁵ Based on the 1997 BC Tree Wounding and Decay Guidebook recommendations for short term retention (20 years). The assumption is that these trees are at significant risk of mortality over the rotation.

The presence of the following should be used to make the designation of non-crop – may wish to review in the field, these indicators could be used as a separate category – risker.

FORK OR PRONOUNCED CROOK

Any tree with a fork or pronounced crook as described below:

A fork or crook is the result of damage to the main leader of the tree where one or more lateral limbs take over as the main stem. Fork or crook is called if severe enough to indicate that the original injury exposed the wood and provided an entrance point for decay fungi. Forks or crooks are to be called between the root collar and the minimum top diameter specified in the cutting authority document.

Forks are used to indicate a poor tree for any of the following conditions:

- The main stem is markedly forked to indicate that 2 or more leaders have resulted from serious damage to the original leader.
- The diameter of the main stem changes excessively from its normal taper to indicate that a serious injury has occurred. For cruising purposes, the diameter change must be at least 10 percent.
- Where there is not evidence of a broken top in the stem at the fork/crook position and neither of the leaders are merchantable, record fork/crook.

Crooks are used to indicate a poor tree if:

- There is at least a 10 percent diameter change in the bole above and below the crook.
- The offset is severe enough to indicate that damage occurred to the main stem. For cruising purposes, the offset must be at least 50 percent of the diameter of the tree at the crook.
- There is a high likelihood that the stem could be snapped or broken by winds or snow-loading during the rotation.

Some forks and crooks are not used as “RISKER” indicators. Forks and crooks may be a growth characteristic of the tree species (for example deciduous species) or may have developed from malformation of the terminal leader due to insect or mistletoe attack. In addition, a fork may be confused with a branch. Forks or crooks which are not used as indicators of poor trees are as follows:

- Crooks with a minor offset (for cruising purposes, an offset less than 50 percent of the diameter of the tree at the crook).
- Small sharply angled branches or spikes (for cruising purposes, less than a 10 percent change in the diameter of the main stem).
- Natural forking in deciduous tree species.
- If the damage is less than 5 years old and/or occurs above the minimum timber merchantability specifications specified in the Timber Utilization Policy (Coast or Interior).
- Flattening of the top of the tree caused by wind or natural outgrowth.

Live Crown criteria;

A minimum of 30 % live crown unless otherwise described.

MISTLETOE TRUNK INFECTIONS

Only trees with a Hawsworth index ²⁶ ≤ 3 without severe branch or stem swelling can contribute as a crop tree

Characteristics and impacts are described below:

Trunk infections of mistletoe are indicated either by abnormal swelling or malformations of the trunk at the point of infection, or by clusters of dead and broken branches on the trunk or on hypertrophied branches immediately adjacent to the trunk.

Wood-rotting fungi gain entrance to the trunk through the dead hypertrophied branches or branch stubs where the swelling is on, or adjacent to the trunk. This can often put the tree at a high risk of breakage from wind or snow.

Do not include mistletoe on living limbs or limbs that are swollen only at some distance from the trunk. Include only those branch infections in which the swelling has clearly extended to trunk.

Vigour criteria specific to Western Red cedar:

Consider a crop tree if live and sound with greater than 2/3rd of the stem producing ≥50 % merchantable timber product. Trees with spiral grain are not considered as crop trees.

²⁶ Hawsworth six-class dwarf mistletoe rating system as identified at the following link:
<http://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/dwarf/fig5.htm>

Appendix G: Advanced Regeneration Acceptability Criteria for the SEDRS Stocking Standard

Appendix 2: Free Growing Multi-story Acceptability Criteria

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Location of damage	Type of damage	Tree being assessed is UNACCEPTABLE if:	Host species	Possible damage agents & damage agent codes	Comments
Stem	WOUND (including sunscald and girdling)	Refer to table X for layers 1-4.	All	squirrel AS, beaver AZ, vole A AV, porcupine AP, hare AH, Warrens root collar weevil IWW, fire NB, windthrow NW, sunscald NZ, logging TL, mechanical TT.	A wound is defined as an injury in which the cambium is dead (e.g., sunscald) or completely removed from the tree exposing the sapwood. Measure the wound across the widest point of the exposed sapwood (or dead cambium when the tree is damaged by sunscald). Healed over wounds (=scars) are acceptable.
Stem	DECAY	Any pathological indicator(s) are present. This may include conk, blind conk, frost crack, or rotten branches .	All	various decay fungi DD.	
Stem	DEFORMATION (including crook, fork, and dead or broken top)	<ul style="list-style-type: none"> These criteria apply to layer 1 & 2 trees only. For layers 3 & 4 use the even-aged damage criteria. A crook displaces the portion of the stem above the defect by >50% from the line of growth formed by the stem below the point of defect in the bottom 2/3rds of the stem only. A fork occurs above stump height in the bottom 2/3rds of the stem only. A dead or broken top extends more than 20% of the stem length or the live crown is removed. 	All	defoliators ID, white pine (spruce) weevil IWS, lodgepole pine terminal weevil IWP, cattle AC, deer AD, elk AE, moose AM, frost NG, hail NH, snow NY, drought ND, logging TL, mechanical TT, Dwarf mistletoes (see below).	
Stem	INFECTION (including cankers, and galls)	Any infection occurs on the stem.	All	comandra blister rust DSC, stalactiform blister rust DSS, white pine blister rust DSB, western gall rust DSG, atropellis canker DSA, exploding canker DTNT, Dwarf mistletoes (see below).	Note: Wounds caused by rodent feeding around rust cankers should have stem rust recorded as the causal agent.
Branch	INFECTION (cankers)	These criteria apply to layer 2, 3 & 4 trees only. An infection occurs on a live branch less than 60 cm from the stem.	Pw, Pl, Py	white pine blister rust DSB, comandra blister rust DSC, stalactiform blister rust DSS.	Branch infections on layer 1 trees can be ignored.
Branch	GALLS	These criteria apply to layer 2, 3 & 4 trees only. A gall rust infection occurs on a live branch less than 5 cm from the stem.	Pl, Py	western gall rust DSG.	Branch infections on layer 1 trees can be ignored.

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26. Free growing damage criteria for multi-layered conifer stands (pg. 1)

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Location of damage	Type of damage	Tree being assessed is UNACCEPTABLE if:	Host species	Possible damage agents & damage agent codes	Comments
Foliage	DEFOLIATION	<ul style="list-style-type: none"> For defoliating insects: > 80% of foliage has been removed, lost or damaged due to foliage disease. For foliar diseases: > 50% of foliage has been removed, lost or damaged 	All	defoliators ID, foliage diseases DF.	
Stem or Branch	ADELGID GOUTING	Any adelgid gouting occurs on a stem or branch.	Ba, Bg, Bl	balsam woolly adelgid IAB.	Gouting is defined as excessive swelling on a branch or shoot caused by balsam woolly adelgid and is often accompanied by misshapen needles and buds. It is most common on branch tips and at nodes near the ends of branches. Consult a recent distribution map to identify the geographic extent of this pest.
Stem or Branch	DWARF MISTLETOE INFECTION	<ul style="list-style-type: none"> These criteria apply to layer 2, 3 & 4 trees: Any infection occurs on the stem or a live branch, or A susceptible tree is located within 10 m of a higher layer tree that is infected with dwarf mistletoe. These criteria apply to layer 1 trees: Hawksworth rating >3, or severe stem infections (major swelling or deformity) present. 	Hw, Pl, Lw, Fd	hemlock dwarf mistletoe DMH, lodgepole pine dwarf mistletoe DMP, larch dwarf mistletoe DML, Douglas-fir dwarf mistletoe DMF.	Note: To confirm infection, the surveyor must observe mistletoe aerial shoots or basal cups on regeneration or on live or dead fallen brooms. The Hawksworth rating system is described in the FPC Dwarf Mistletoe Management Guidebook.

TABLE X. Tree wounding criteria for layers 1-4. Trees are unacceptable if any ONE criterion is met.

TREE SPECIES	SHORT TERM RETENTION ² (Layers 1 & 2)	LONG-TERM RETENTION ³ (Layers 1 & 2)	UNEVEN-AGED ⁴ (Layers 1 & 2)	LAYERS 3 & 4
B, H, Lw, Ss and Cw <60 years	W>33%C., or MRW 1m, or G.	W>33%C., or MRW 1m, or G. 1 W>400cm ²	W>33%C., or MRW 1m, or G. 1 W>400cm ²	See table 21
Cy, Sx and Cw >60 years	W>33%C., or MRW 1m, or G.	W>33%C., or MRW 1m, or G. 1 W>400cm ²	W>33%C., or MRW 1m, or G. 1 W>400cm ²	
Fd, Pw	W>50% C.	W>33%C., or MRW 1m, or G.	W>33%C., or MRW 1m, or G. 1 W>400cm ²	
Pl, Py	W>50% C.	W>50% C.	W>33%C., or MRW 1m, or G.	

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¹ The stand management objective should be specified in the site plan. Where it is not, the criteria for uneven-aged management should be applied.

² Where tree will be removed within 20 years.

³ Where tree will be removed in more than 20 years.

⁴ Where stand is managed in a true uneven state.

⁵ A gouge involves a wound where penetration is into the sapwood or deeper.

W. = Wound C. = Circumference G. = Gouge⁵
MRW = Major Root Wound within 1 m of the stem.

26. Free growing damage criteria for multi-layered conifer stands (pg. 2)

Single Entry Dispersed Retention System

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Location of damage	Type of damage	Tree being assessed is UNACCEPTABLE if:	Host species	Possible damage agents & damage agent codes	Comments
Roots	ROOT DISEASE	<ul style="list-style-type: none"> Sign(s) or definitive combinations of symptoms of root disease are observed. 	All	armillaria root disease DRA, laminated root rot DRL, tomentosus root rot DRT, annosus root disease DRN, blackstain root disease DRB.	Signs are direct evidence of the pathogenic fungus including fruiting bodies, distinctive mycelium or rhizomorphs. Symptoms include foliar thinning or chlorosis, pronounced resin flow near the root collar, reduced recent leader growth, a distress cone crop, and wood decay or stain. Symptoms alone are not usually sufficient to identify root disease. Both signs and symptoms may be detected from old stumps, root balls, or other post-harvest remains.
Layer 1 Layer 2 Layer 3 Layer 4	Layer 1 Layer 2 Layer 3 Layer 4	Infected conifer found in plot. See Table Y for well-spaced tree net down calculation by layer.	All	armillaria root disease DRA.	Note: All conifer species are considered susceptible. Broadleaf species are considered not susceptible for survey purposes only. Example: How to apply net down for root disease. If root disease-infected trees are found in the plot: 1. Determine the number of healthy, well-spaced trees in each layer using the prescribed minimum inter-tree distance (MITD) (e. g., 3 layer 1, 3 layer 3 and 4 layer 4 = 10 healthy, well-spaced) ignoring the M-value; 2. Count the number of infected trees (e. g., 1 layer 1 tree and 1 layer 3 tree); 3. Working from the uppermost layer down, apply the multiplier in Table Y to each lower layer. Subtract the resultant from each layer in turn, for susceptible species only (e. g., if all trees are susceptible, 1 infected layer 1 tree removes 1 healthy, well-spaced layer 1 tree plus 3 layer 3 trees plus 4 layer 4 trees). Note the effects are cumulative, not exclusive and lower layers do not effect higher layers; 4. Calculate the remaining healthy, well-spaced trees once all removals due to infected trees are completed (e. g. 10 - 8 = 2). The result is the maximum number of free growing trees tallied for the plot.
		Infected conifer found in plot. See Table Y for well-spaced tree net down calculation.	Fd, Sx, Se Lw, Ba, Bg	laminated root rot DRL.	Note: Bl, Cw, Pl, Pw, Py and broadleaf species are considered not susceptible for survey purposes only.
		Infected conifer or stump found in plot. See Table Y for well-spaced tree net down calculation.	Se, Sx, Pl	tomentosus root rot DRT.	Note: Ba, Bl, Cw, Fd, Pw, Py and broadleaf species are considered not susceptible for survey purposes only.
		Infected conifer found in plot. See Table Y for well-spaced tree net down calculation.	Ba, Hw, Ss	annosus root rot DRN.	Note: Bg, Bl, Cw, Cy, Fd, Hm, Pl, Pw, Py, Sx and broadleaf species are considered not susceptible for survey purposes only.

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26. Free growing damage criteria for multi-layered conifer stands (pg. 3)

Taken from Sections 21 and 26 FS 660

http://www.for.gov.bc.ca/hfp/silviculture/Silviculture_Surveys.html,
<http://www.for.gov.bc.ca/isb/forms/lib/FS660.PDF>