

**2016 Great Bear Rainforest Land Use  
Objectives Order:  
Background and Intent**

May, 2016

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## **1.0 About this Document**

### **1.1 Introduction and Purpose**

This document provides the background and intent for the Great Bear Rainforest (GBR) Land Use Objectives Order (the Order). The Order was established January 28th, 2016. As outlined in the Preamble, the Order is one important tool for enabling the implementation of Ecosystem-Based Management (EBM) on forested lands in the GBR. It establishes legal objectives pursuant to section 93.4 of the *Land Act*, for the purpose of directing forest practices implemented under the *Forest and Range Practices Act (FRPA)*.

The purpose of this document is to provide supplemental information regarding the intent of the legal objectives in the Order, and context for understanding and implementing the objectives. The overall goal is to facilitate a clear understanding of the Order.

It is important to note that the information provided in this document should not be construed as a legal interpretation or legal advice for implementation. It is also not intended to provide prescriptive measures or to limit the accountability and flexibility of professionals and delegated decision makers responsible for developing, approving and implementing forest practices pursuant to the Order.

Section 1 of this document describes the purpose of the Order, examines how it relates to other key enactments and outlines the overarching legal and policy context in which the Order exists. Section 2 describes key concepts and definitions that are commonly referred to throughout the document.

The core of this document is found within Section 3. For each legal objective found within the Order, context and a statement of intent are provided, followed by suggestions for implementation. The numbering of the sections in section 3 correlates to the Order, for example Objective 5 in Part 3 (South Central Coast) is covered in section 3.3.5.

## **1.2 Background and Context for the Orders**

### **1.2.1 First Nations Agreements and Information**

Strategic land use planning agreements between the Province of British Columbia and First Nations contained agreed upon management objectives which formed the basis of the original Central and North Coast and South Central Coast Orders. Consolidation and amendment of the two Orders to create the GBR Order is based on further implementation of the agreements, Government to Government (G2G) negotiations and First Nation Detailed Strategic Plans.

Concurrent with the stakeholder discussions phase of the Central Coast and North Coast Land and Resource Management Plans (CCLRMP and NCLRMP), some participating First Nations produced land use plans for their traditional territories. Many of these land use plans were provided to the CCLRMP and NCLRMP tables for consideration in the development of table recommendations. The information in those plans and their updated versions provides additional background information regarding implementation of EBM in specific First Nation territories. Applicable First Nations can be contacted directly to obtain and share information related to First Nation land use plans.

During 2005-06, recommendations from the CCLRMP and NCLRMP tables informed subsequent G2G discussions between participating First Nations and the Province. In March 2006 several First Nations in the GBR area and the Province entered into Strategic Land Use Planning Agreements (SLUPAs)<sup>1</sup>, a Coastal First Nations-BC Land and Resource Protocol (LRPA)<sup>2</sup> and a Nanwakolas-BC Land Use Planning Agreement in Principle (AIP)<sup>3</sup> wherein they agreed to implement Ecosystem-Based Management (EBM) in the Central and North Coast area (“the Great Bear Rainforest”). The following agreements provide background information regarding implementation of EBM in the GBR area and in specific First Nation territories:

- [Coastal First Nations Protocol](#)
- [Homalco Land and Resource Protocol](#)
- [KNT Agreement in Principle](#)
- [Gitxaala Strategic Land Use Planning Agreement](#)
- [Haisla Strategic Land Use Planning Agreement](#)
- [Heiltsuk Strategic Land Use Planning Agreement](#)
- [Homalco Strategic Land Use Planning Agreement](#)
- [Kitasoo/Xaixais Strategic Land Use Planning Agreement](#)
- [Kitselas Strategic Land Use Planning Agreement](#)
- [Kitsumkalum Strategic Land Use Planning Agreement](#)
- [Metlakatla Strategic Land Use Planning Agreement](#)
- [Wuikinuxv Strategic Land Use Planning Agreement](#)

In 2007, steps were taken on a G2G basis to implement EBM including translation of the management direction in the land use agreements into a first suite of land use objectives. Concurrently, several First Nations and the Province collaborated to prepare more detailed information regarding the specific interests of the participating First Nations. As with the earlier land use plans, Detailed Strategic Plans (DSPs) provided additional information regarding implementation of EBM in specific First Nation territories. The following Applicable First Nations can be contacted directly to obtain and share information related to Detailed Strategic Plans:

- Da'naxda'xw/Awaetlala
- Gwa'sala-'Nakwaxda'xw
- Komoks
- Kwiakah
- Mamalilikulla Qwe'Qwa Sot'Em
- Gitga'at
- Heiltsuk
- Kitasoo
- Metlakatla

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<sup>1</sup> Strategic Land Use Planning Agreements have been signed by the following First Nations: Wuikinuxv, Nuxalk, Heiltsuk, Kitasoo-Xai'xais, Haisla, Gitga'at, Metlakatla, Gitxaala, Kitselas, Kitsumkalum, and Homalco.

<sup>2</sup> The LRPA was signed by First Nations involved in the Coastal First Nations

<sup>3</sup> The AIP was signed by First Nations involved in the Nanwakolas Council

## 1.2.2 Key Background Documents and Reference Material

Several documents were developed during stakeholder discussions at the CCLRMP and NCLRMP processes that provided guidance for the development of the EBM framework and EBM management direction. Additional contributions were made during the Coast Land Use Decision Implementation phase that followed in 2006-2009, primarily by the Ecosystem Based Management Working Group (EBM WG); a multi-stakeholder technical committee established to oversee research and data management related to EBM implementation. A few key documents are briefly described below.

**The CCLRMP Consensus Recommendations Report** (2003) outlines the consensus recommendations of the multi-stakeholder planning table:

[http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/land-use-plans-and-objectives/land-use-plans/coast-area/westcoast-region/centralcoast-lrmp/consolidated\\_central\\_coast\\_lrmp\\_completion\\_table\\_recommendations\\_may\\_2004.pdf](http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/land-use-plans-and-objectives/land-use-plans/coast-area/westcoast-region/centralcoast-lrmp/consolidated_central_coast_lrmp_completion_table_recommendations_may_2004.pdf)

**The North Coast Land Resource Management Plan: Final Recommendations (January 2005)** outlines the consensus recommendations of the multi-stakeholder planning table: [https://www.for.gov.bc.ca/tasb/slrp/lrmp/nanaimo/ncoast/docs/NCLRMP\\_Final\\_Recommendations\\_feb\\_2\\_2005.pdf](https://www.for.gov.bc.ca/tasb/slrp/lrmp/nanaimo/ncoast/docs/NCLRMP_Final_Recommendations_feb_2_2005.pdf)

LRMP table recommendations were informed by a range of technical reports and analyses completed by the Coast Information Team (CIT) see:

<https://www.for.gov.bc.ca/tasb/slrp/citbc/abo.html>

**The Coast Information Team (CIT) Ecosystem-Based Management Planning Team Handbook (March 2004)** reflects the recommendations of a working group of the CIT for implementing EBM across multiple scales, consistent with the CIT definition for EBM.

**The CIT Scientific Basis of Ecosystem-Based Management (March 2004)** provides the rationale and scientific background to the EBM Handbook.

**The CIT Hydroriparian Planning Guide (January 2004)** provides a description of hydroriparian concepts and methods, for the purpose of facilitating the design of forest management plans likely to maintain hydroriparian functions at a watershed scale.

**EBM Working Group projects:** See “Decision Support Reports” section at <https://www.for.gov.bc.ca/tasb/SLRP/plan17.html>

See the “Decision Support Reports” section at the following site for other information (e.g. Focal species reports): <https://www.for.gov.bc.ca/tasb/SLRP/plan17.html>

## 1.3 Legislative Context for the GBR Order

### 1.3.1 Requirements for establishing legal objectives under the Land Use Objectives Regulation

In order to establish legal objectives under the Land Use Objectives Regulation (LUOR), the Minister responsible for the *Land Act* must be satisfied that the land use objectives will provide for management and use of forest or range resources in a manner that has not

otherwise been provided for under the LUOR or another enactment. In addition, the land use objectives must provide an appropriate balance of social, economic and environmental benefits.

Accordingly, one of the steps undertaken in the decision process to establish the Order was a systematic review of existing legal direction provided under various enactments (e.g. the *Forest and Range Practices Act*, Forest Planning and Practices Regulation and Government Actions Regulation, the Land Use Objectives Regulation, *Heritage Conservation Act* and *Wildlife Act*, to name a few) to identify whether the proposed objectives are a duplicate of legal direction provided elsewhere. The final legal objectives established in the Order should therefore be considered complementary and supplemental to legal direction provided by other enactments, unless otherwise specified.

### **1.3.2 Relationship to the *Forest and Range Practices Act* (FRPA)**

The *Forest and Range Practices Act* framework relies on the establishment of objectives to provide the overarching direction for forest management in BC. There are three types of objectives that may be established or enabled under FRPA:

- 1) Land Use Objectives established under section 93.4 of the *Land Act* (such as the Order) or grandfathered under section 181 of FRPA for objectives that were previously established under sections 3-5 of the *Forest Practices Code*;
- 2) Objectives set by government pursuant to section 149(1) of FRPA (e.g. Forest Planning and Practices Regulation section 5-10), and;
- 3) Objectives enabled by regulation pursuant to section 149(1) of FRPA and sections 2 to 4 of the Government Actions Regulation.

Forest licensees are required to identify strategies and/or results in a Forest Stewardship Plan that are consistent with all of the objectives in effect for any given area. Tenures that are not required to have an FSP are not subject to the objectives in the Order. Woodlots, specified community forest licences and specified non-replaceable forest licences are exempted in the Order.

### **1.3.3 Relationship to the Non-Spatial Old Growth Order**

The Provincial Non-Spatial Old Growth Order legally establishes old growth objectives for landscape units across the Province that do not have old growth objectives formally established. As noted in section B of the Non-Spatial Old Growth Order:

*"When a new order of the Minister of Sustainable Resource Management or delegate establishes old forest objectives, this Order will, on the effective date of the new order, cease to have effect for the area or areas affected by old forest established in the new order. Where a new order of the Minister of Sustainable Resource Management or delegate establishes old forest objectives for a portion of a landscape unit that is established under this Order, this Order remains in effect for the portion of the landscape unit for which the new order does not establish old forest objectives."*

The original South Central Coast (SCC) and Central North Coast (CNC) Orders included objectives for landscape level biodiversity and old forest. Therefore, the Non-Spatial Old



Growth Order ceased to have effect for the area covered by the Orders as of August 2, 2007 and January 3, 2008, respectively, when the Orders came into effect. The Order replaces the CNC and SCC Orders for the plan area and also includes objectives for landscape level biodiversity and old forest. The Non-Spatial Old Growth Order is not in effect for the area covered by the GBR.

### **1.3.4 Relationship to the *Heritage Conservation Act***

The BC *Heritage Conservation Act* (HCA) provides for the protection of archaeological resources, covering sites containing evidence of use or habitation predating 1846, burial sites and aboriginal rock art. The *Heritage Conservation Act* prohibits the destruction, excavation or alteration of archaeological sites without a permit.

Section 6 of the *Heritage Conservation Act* specifically states that if there is a conflict between the *Heritage Conservation Act* and another enactment, the *Heritage Conservation Act* prevails over the conflicting legislation, as noted below:

*"If, with respect to any matter affecting the conservation of a heritage site or heritage object referred to in section 13 (2), there is a conflict between this Act and any other Act, this Act prevails."*

The Order provides direction for the management of aboriginal heritage features and resources that is intended to complement direction provided by the *Heritage Conservation Act*. The Order includes management direction that is specific to First Nations cultural heritage values in the area, and includes a requirement to manage for aboriginal heritage resources dated before and after 1846.

The HCA trumps all other Acts in the Province in terms of protection for heritage objects and sites as they are defined in the HCA. For example, if something is protected under HCA, it cannot be changed through the *Mines Act* etc. Supremacy needs to be read in terms of the HCA protection and conservation objectives.

However, procurement of a site alteration permit under the HCA does not override the provisions and requirements of the objectives for aboriginal forest resources and aboriginal heritage features as defined in the Order. This means that alteration of a feature, site or area that is covered by the HCA and the Order requires both a site alteration permit and consistency with the objectives.

## **1.4 Future Amendments to the GBR Order and Background and Intent Document**

The preamble to the Order states that "the implementation of ecosystem-based management will be monitored and, if monitoring results determine that ecosystem integrity is not being maintained or human well-being improved, this order may be reviewed and amended."

Changes to the Order from periodic reviews (March 31, 2021, March 31, 2026, and subsequently every 10 years) and ad hoc reviews may result in an update of this document. Results of ongoing work within strategic and operational committees, G2G tables, and Adaptive Management or other planning processes to further define detailed direction for the implementation of EBM may

also result in amendment to the Order and updates to this document.

## **2.0 General Terms and Concepts**

This section provides interpretation of terms and concepts that are used in the Order.

### **2.1 First Nations Information Sharing and Engagement**

Recent court decisions have clarified that consultation on aboriginal interests is a legal obligation that rests with the Crown. However, the courts also determined that the Crown can delegate procedural aspects of First Nations consultation to third parties such as licensees. The practical implications of these decisions are explored in FRPA Bulletin #1 Forest Stewardship Planning, First Nations Information Sharing ([http://www.for.gov.bc.ca/hth/timten/FRPA\\_implementation/Bulletins.htm](http://www.for.gov.bc.ca/hth/timten/FRPA_implementation/Bulletins.htm)). The bulletin provides legal references and suggested steps or approaches for information sharing.

The Order includes an overarching objective for engagement with First Nations. This objective establishes a requirement for FSP holders and forest licensees to develop results and strategies that specify in detail how the FSP holder will share information and engage with Applicable First Nations in respect of implementing and achieving the intent of all the objectives in the Order. This is outlined in the letter from the Minister of Forests, Lands and Natural Resource Operations to Resource District Managers (January 29, 2016).

In addition to the overarching objective for First Nation Engagement, a number of objectives in the Order contain provisions for First Nation Engagement that apply in specific circumstances (e.g. Parts 2 and 3, objective 6 (4) (b)). Such provisions are intended to establish a requirement that detailed and thorough First Nation Engagement must be carried out with Applicable First Nations in respect of the subject matter of that objective (e.g. a proposed modification of a Reserve Zone surrounding a Type 1 Aboriginal Heritage Feature). Such specific provisions are intended to provide supplemental direction to the overarching First Nation engagement objective, not replace it.

Additional information for the management of First Nations values at a territorial level will be acquired during the Landscape Reserve Design (LRD) process. LRDs, when complete, may provide more detailed and locally specific direction for the management of aboriginal heritage features, aboriginal forest resources, culturally modified trees, monumental cedar and other values of interest to each Nation. Sharing information and engaging with Applicable First Nations during development of LRDs will be important to implementation of EBM at the landscape level. For more information on LRDs refer to section [3.1.5](#) of this document.

### **2.2 General Concepts for Aquatic/Fish Habitat Objectives in Parts 2 & 3**

The intent of the aquatic habitat division in Parts 2 and 3 of the Order is to ensure adequate protection and maintenance of hydroriparian ecosystems, including fish habitat. These ecosystems include distinct landscape and watershed features widely recognized as being important for the conservation of biodiversity and provision of other ecological values. They can be naturally rich in structure and habitats and dynamic in process. The general intent is to maintain the key processes and functions of each feature. These will be discussed in detail in the following sections.

For each aquatic objective in parts 2 and 3, default approaches are provided, often along with an option or variance that allows more flexibility. The risk associated with the greater flexibility is balanced by a more detailed and rigorous assessment requirement if that option is chosen.

## 2.2.1 Functional riparian forest

The term functional riparian forest is used in several objectives related to aquatic habitat. It refers to forest that can provide all key hydrological and ecological riparian functions. Important functions include:

- maintaining hydrological regime
- maintaining stream morphology
- maintaining bank and channel stability
- providing a source of large woody debris
- serving as a corridor
- maintaining habitats and coarse-filter biodiversity
- maintaining rare ecosystems, and
- maintaining characteristic ecosystem productivity

The specific riparian structures and processes that constitute "functional" riparian forest will vary by the type of aquatic habitat under consideration (i.e., whether it is a forested swamp or an upland stream).

Substantial recovery of the hydrological function of riparian and other forests is expected to occur when the stand has achieved "hydrologically effective greenup", a state which is defined in the Order as the height, stocking density and crown closure at which the hydrologic conditions of a harvested site are restored to near pre-harvest conditions with the re-growth of new forest at the site. An estimate of these conditions is provided by the [Coastal Watershed Assessment Procedures Guidebook](#) (Forest Practices Code Version 2.1 April 1999) in Table 1 shown below.

**Table 1.** Hydrological recovery for fully stocked stands that reach a maximum crown closure of 50%–70%.

Average height of the main canopy (m)	% Recovery
0 – <3	0
3 – <5	25
5 – <7	50
7 – <9	75
9 +	90

This means that hydrological recovery to near pre harvest levels may be restored at ages less than the original age of the harvested forest.

For those objectives that specify maintenance of "functional riparian forest", some forest could be removed from the existing pre-harvest forest and still meet the definition of functional riparian forest (i.e., a fully stocked stand that is at hydrologically effective

green up and contains some large trees adjacent to the stream to provide for large organic debris). This distinction is important as some objectives require retention of a percentage of the functional riparian forest in a given area and others require retention of a percentage of the forest in a given area.

For those objectives that specify maintenance of forest in reserve and management zones, the oldest or most “functional” existing riparian ecosystems have the highest priority for retention. The intent is to meet retention targets with ecosystems and stands that have or will quickly recover both the hydrological and ecological riparian functions that are important for the feature.

### **2.2.2 Fen and Marsh interpretations**

Fen is defined as: A nutrient-medium peatland ecosystem dominated by sedges and brown mosses, where mineral-bearing groundwater is within the rooting zone and minerotrophic plant species are common.

Marsh (should be interpreted as follows): A permanently to seasonally flooded non-tidal mineral wetland dominated by emergent grass-like vegetation.

For more detail on site characteristics and vegetation communities pertinent to coastal situations, refer to Wetlands of British Columbia by MacKenzie and Moran (2004): <https://www.for.gov.bc.ca/hfd/pubs/docs/lmh/lmh52.htm> .

### **2.2.3 Active Fluvial Units**

Active fluvial units, including floodplains and alluvial fans, are dynamic ecosystems comprised of a diversity of both aquatic and terrestrial habitats and structures. Ecosystems within active fluvial units are created and maintained by disturbance regimes. These units are sensitive to harvesting, as the riparian vegetation, especially large trees, are important for limiting erosion, stabilizing banks and reducing sedimentation rates. If functional riparian forest is removed, significant channel widening and loss of channel complexity and associated habitat can occur within a few years with normal peak flows. Stream position can change within an active floodplain, triggered by disturbance or by an extreme flood event. For these reasons, management must assume that such streams have the potential to move anywhere within the active or wet floodplain. Over longer time periods, streams have the potential to move across the entire valley bottom.

In large streams, channel instability resulting from the harvest of functional riparian forest can take many decades to recover. For similarly dynamic active alluvial fans removal of the functional riparian forest can destabilize channels and remove barriers to the spread of sediments and debris, again taking decades to recover. Therefore, active fluvial units are a priority for protection as a hydriparian ecosystem.

### **2.2.4 Upland Streams**

Upland streams are small, relatively steep and usually non-alluvial streams. These streams are extremely numerous across the landscape of the GBR, and are often too small to identify

at scales above the site level. For these reasons management of these streams is approached by maintaining a proportion of forest cover in the watershed, much like equivalent clear cut area, rather than by requiring establishment of individual reserves along stream reaches. For Part 2 of the Order (Central and North Coast) this is defined as maintaining 70% of the portion of the watershed occupied by upland streams in a state of functional riparian forest and that requirement is applied to all watershed planning units. A watershed planning unit is defined in Part 2 of the Order as a watershed or watershed sub-unit that is used as a unit of analysis for calculating Functional Riparian Forest retention in Upland Stream areas. In Part 3 of the Order (Central South Coast) this 70% retention of functional riparian forest is applied only to the important fisheries watersheds shown in [Schedule E](#).

### **2.2.5 Riparian Reserve Zones and Management Zones**

The objectives for aquatic habitat in Part 2 and the objectives for fish habitat in Part 3 utilize the concepts of hydroriparian reserve zones and management zones. The concept of reserve zones and management zones is also used for other features and values in the Order. Riparian ecosystems are distinct landscape and watershed features widely recognized as being important for the conservation of biodiversity and provision of other ecological values. They can be naturally rich in structure and habitats and dynamic in process. The general intent is to maintain the key processes and functions of each feature. Reserve zones and management zones are intended to protect the adjacent hydroriparian feature, while also protecting a portion of the terrestrial riparian habitat for biodiversity.

The use of ‘tree length’ for setting the width of a reserve zone or management zone is used in conservation science and allows for some variation based on site conditions and productivity. It is important to note that the definition of tree length is different in the Central and North Coast area (Part 2) than in the South Central Coast area (Part 3). In general, tree length for the Central and North Coast is defined as the height of the dominant trees at old forest condition, whereas in the South Central Coast tree length is defined as the height of the dominant trees on or adjacent to the site at the time of harvest. This will mean in some cases a greater tree length (and therefore greater zone width) for the Central and North Coast objectives than for the South Central Coast if the trees on the site at the time of harvest are younger than old.

The width of protective reserve zone or management zone required for each hydroriparian feature depends on the function and key attributes of that feature, as well as the nature of the vegetation, site, and terrain around that feature. The objectives allow flexibility to vary reserve and management zone widths (within limits) by increasing or decreasing them to account for different site and stand conditions. The objectives apply the principle of no net loss of riparian reserve or management zone area within a development area, requiring reductions in the zone width at one point to be balanced off by increases elsewhere along the length of the riparian feature to maintain the same total reserve zone area.

For each aquatic/fish habitat objective in both Parts, default approaches are provided along with options that allow some flexibility. The risk associated with the greater flexibility is balanced by a more detailed and rigorous assessment requirement if the

option is chosen.

### 2.2.6 General Guidance for Aquatic/Fish Habitats

The range of hydroriparian ecosystems and their relationship with one another should be carefully considered when results and strategies are being developed for aquatic objectives:

- Occasionally several features will overlap on the same area (e.g. Active Fluvial Unit and Type 1 Aquatic Habitat). In such cases, measures for the feature with the greatest requirement for protection will be applied to meet the objectives and requirements for both.
- Some features will merge into others (e.g. estuaries into an active fluvial unit, estuaries into a marsh and a fen, a fen into a forested swamp). In these cases the reserve/management zone placement will need to carefully consider the needs of each feature and consider cumulative or downstream effects.

## 3.0 Great Bear Rainforest Objectives Intent and Implementation Guidance

### 3.1. Part 1 Biodiversity objectives for the entire GBR

#### 3.1.1 Definitions

The definitions in this part apply to terms found in the objectives in Part 1, covering the entire GBR area.

#### 3.1.2 General Context

The intent of Part 1 (Biodiversity) is to represent the full range of habitats, structures and ecosystems across the land base to conserve biological diversity and to the extent practicable simultaneously contribute to the protection and stewardship of aboriginal heritage features, aboriginal forest resources, and aboriginal tree use. This is implemented through the creation of Landscape Reserve Designs that in aggregate encompass sufficient hectares of old forest in each site series group to meet the objectives for ecosystem representation.

Detailed implementation direction on LRDs is contained in the 2016 LRD Methodology (see <https://www.for.gov.bc.ca/tasb/SLRP/plan17.html>).

The concepts of Natural Forest and Managed Forest are central to biodiversity management in this Order and are defined as follows:

**"managed forest"** means the area of productive forest that is or will be available for timber harvest;

**"natural forest"** means the area of productive forest that is not Managed Forest;

The objectives specify that an area of 3,108,876 hectares of Natural Forest and 550,032 hectares of Managed Forest be identified and maintained in the order area.

The objectives for Restoration Zones and Restoration Landscape Units are for management of representation specific to landscape units in the GBR where more than 30% of the landscape unit area is within site series groups containing less than 30% old forest.

The Order provides direction to preserve habitats over a range of scales, from stand level to landscape level. Also, structural variability is promoted to best address the full range of species by spreading risk and uncertainty across spatial and temporal scales and providing managers with flexibility to address a range of goals including timber.

### **3.1.3 Objective for First Nations Information Sharing and Engagement**

#### **Context:**

In the previous orders there was a requirement for ‘information sharing and consultation’ included in each objective. The Order still includes a requirement for First Nation Engagement in many objectives, and as an outcome of G2G discussions, adds a new over-arching objective for First Nations information sharing and engagement.

#### **Intent:**

This objective clarifies and reinforces the requirement that forest licensees are required to share information and engage with Applicable First Nations in implementing all objectives in the Order. Per the Ministerial Direction letter, forest stewardship plans must “specify intended results and strategies that describe in detail how the license holder’s operations will be consistent with the objectives for First Nation Information Sharing and Engagement in the GBR LUO”.

#### **Implementation Guidance:**

Approaches for achieving the intent of this objective could include any the following:

- Reviewing and considering applicable land use plans and agreements, ethnographic studies, outcomes of previous consultation in the area etc. to identify potential First Nation values and interests that may be affected by proposed forestry activities.
- Meeting with Applicable First Nations to discuss approaches for the sharing of information relating to implementation of the objectives in the Order. Some values may be considered by First Nations to be too sensitive to permit sharing of specific information.
- Providing relevant information to the Applicable First Nation found during operational planning and activities that could be used for the assessment and consideration of potential impacts on their aboriginal interests.
- Adjusting planned harvesting, road building and forest management activities to protect and maintain aboriginal values and resources.
- Providing to Provincial decision makers and First Nation representatives a record of efforts made to meet and develop processes for engagement, to share relevant information, to identify and discuss issues, and the efforts made to resolve those issues and address potential impacts on aboriginal interests.

Working with Applicable First Nations to develop information sharing agreements and protocols that establish mutually acceptable arrangements for the parties to develop and share confidential and non-confidential information is an important part of any of the above.

### 3.1.4 Objectives for Ecological Representation

#### Context:

In the Order, old forest is defined as: 1) a stand of trees 250 years of age or older 2) an old, structurally complex stand comprised mainly of climax species where older seral remnants may still be present in the upper canopy and typically have a) standing snags b) rotting logs on the ground and c) patchy understories; or 3) a stand of trees that has reached the climax state for the ecosystem that it is found in where trees naturally cycle at an age less than 250 years. The goal is to maintain a proportion of old forest for each site series group (SSG), which is a unique combination of growing conditions (climate and geography) and plant assemblages based on the historical level of natural disturbance. To achieve this requires detailed information on the location of the various site series and the historical disturbance frequency.

The Order sets [old forest targets by site series group for the entire GBR](#). Achievement of the SSG targets will be measured based on the TEM/PEM inventory data sets. There are two targets for each SSG at the plan area level. The minimum old forest retention level (MOFRL) must be met immediately and the old forest representation target (OFRT) must be achieved by 2264. There is flexibility available to achieve the long term old forest representation target because the gap between the minimum old forest retention levels and the old forest representation target can be filled by old and non-old stands. This allows greater consideration of interior forest, connectivity, wildlife habitat and human well-being values in the design of landscape reserves to spatially identify the minimum and long term old forest representation targets.

The targets are given specific context on the land base overall by the objective for Managed Forest and Natural Forest which specifies explicit targets for these two categories, representing the overall balance between conservation goals and economic goals in the GBR. In general most ecosystems will have targets at or above 70% of the Range of Natural Variability (RONV) which is the range of dynamic change in natural systems over historic time periods. For a limited number of ecosystems within the plan area the target has been set at less than 70% RONV (primarily the CWHxm, CWHdm and CWHmm) the total area in which the OFRTs fall below 70% RONV is less than 1% of the plan area. For ease of use by licensees the old forest targets for all SSGs in the order have been converted from a percentage of RONV to a percentage of the total forest.

Long term OFRTs for the Order area must be met by 2264. MOFRLs must be met at the Order level immediately. In circumstances where there is insufficient old forest to meet a target, recruit forest to meet the target by 2264 for both the long and short term targets.

Examples of OFRTs and MOFRLs:
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Objective for ecological representation:



- (1) *Maintain landscape level biodiversity as follows:*
  - (a) *For each Site Series Group in the order area, maintain a distribution of forest stand ages that will achieve the Old Forest Representation Targets listed in Column "A" in Schedule G by no later than 2264;*
  - (b) *For each Site Series Group in the order area, retain an amount of Old Forest equal to or greater than the order area Minimum Old Forest Retention Levels listed in Column "B" in Schedule G and*
  - (c) *For the purposes of subsections (1)(a) and (1)(b), for each Site Series Group in a Landscape Unit, retain a minimum of 30% of the total forest area of the Site Series Group as Old Forest.*

1(a) Total forest area in a SSG = 10, 000 hectares of old and non-old forest

1(b) Minimum Old Forest Retention Level (30%) = 3,000 hectares of old forest

1(c) LU A has 100 hectares total forest in the SSG. Required retention is 30 hectares of old forest. Exceptions to 1(c):

- (2) *Despite subsection (1)(c), harvesting of Old Forest in a Site Series Group in a Landscape Unit may occur where less than 30% of the total forest area of the Site Series Group in the Landscape Unit is Old Forest, provided that:*
  - (a) *within the Landscape Unit area:*
    - (i) *alteration or harvesting is required for road access, other infrastructure, or to address a safety concern, where there is no practicable alternative; or*
    - (ii) *the lesser of 20% of the total forest area or the Minimum Old Forest Retention Level specified in Schedule F is maintained as Old Forest; and*
  - (b) *The aggregate area of Old Forest in the order area harvested under subsection (2)(a) following the date of establishment of this order does not exceed 18,650 hectares.*

A total of 18,650 hectares (as specified in the Order) have been allocated across the LUs and SSGs which are at less than 30% in the non-legal target tables used as the starting point for Landscape Reserve Design targets.

Any re-allocation of the draw down utilizing subsection (2) counts against the 18,650 hectares total that can be draw down for the plan area.

The Minimum Old Forest Retention Level for the SSG at the plan area is a static value. Therefore, if the 18,650 hectare drawdown is reallocated differently the plan area minimum still needs to be met and the 18,650 allocation cannot be exceeded. This will mean that any additional drawdown required for a SSG below 30% in one LU would have to be made up by adding area to the same SSG below 30% in another LU. Therefore a different LU will have additional old forest hectares to make up for the short fall in the first LU.

- (3) *For each Site Series Group listed in Schedule L, in the Landscape Units listed in Schedule K, up to 5% of the area required to meet the minimum Old Forest requirements specified in subsection (1)(c) or (2)(a)(ii) can be met in forest that is*

*not Old Forest where this results in an improved ecological outcome.*

For the limited number of LU/SSG combinations listed in [Schedule L](#), 5% of the area required for LU level minimum old forest can be non-old forest where this results in an improved ecological outcome.

For example, if the requirement for minimum old was 30 hectares then 28.5 hectares of the 30 hectares of old forest required would be old and 1.5 hectares could be non-old forest.

Flexibility to use old forest in a higher level SSG to meet minimums:

- (4) Despite subsections (1)(c) and (2)(a)(ii), for each Site Series Group listed in Schedule L, up to 5% of the area required to meet the minimum Old Forest requirements specified in subsections (1)(c) or (2)(a)(ii) may be met in Old Forest in a higher level Site Series Group in the same variant.*

An additional exception for the SSGs listed in Schedule L is to utilize old forest in a higher level SSG to contribute up to 5% toward the MOFRL for a lower level SSG in the same variant. This variance could overlap with the variance in subsection (3) as both subsections reference the SSGs listed in Schedule L. For example an SSG listed in Schedule L and within Landscape Units listed in Schedule K, could apply subsections (2), (3) and (5). If the initial old forest requirement under 1(c) was 30 hectares (30% of 100 ha) this could be reduced to 20 hectares (20%) under subsection (2)(a)(ii). The 20 hectares could include 1 hectare of non-old forest under subsection (3) (if this results in an improved ecological outcome) and 1 hectare of old forest from a higher level SSG in the same variant.

Flexibility to use old forest in an equal or higher level SSG in other LUs to meet minimums

- (6) Despite subsections (1)(c), (2)(a)(ii), and (5), for each Site Series Group listed in Schedule M, and despite subsection (1)(a) for each Site Series Group in the CWHxm2, CWHdm and CWHmm1 biogeoclimatic variants, up to 5% of the combined area of each Site Series Group in the Thurlow, Fulmore, Gray and Estero Landscape Units required under subsections (1)(c) and (2) to meet the target for that Site Series Group may be met in an equal or higher level Site Series Group listed in Schedule M in any of the four Landscape Units*

There are two exceptions built into subsection (6):

For the subset of SSGs listed in [Schedule M](#) up to 5% of the combined area of the SSG in the 4 listed Landscape Units may be met in an equal or higher level site series group. The Old Forest Representation Target and Minimum Old Forest Retention Level at the plan area for the SSG must still be met.

For the SSGs listed in Schedule M in the CWHxm2, CWHdm and CWHmm1 variants up to 5% of the combined area of the SSG in the Thurlow, Fulmore, Gray and Estero LUs may be met in an equal or higher level site series group in any of those LUs and the Old Forest Representation Target in 1(a) for those SSGs need not be met. This is the only exception in the Order to the plan area targets.

**Intent:**

The intent of this objective is to maintain landscape level biodiversity in a condition that is

close to the natural range of variation through establishment of targets for old forest representation by SSG. These targets are to be met in the short and long term.

The targets allow for operational flexibility in the following ways: substitution of specified amounts of SSGs with equal or higher level matrix SSGs; use of younger forest to contribute to meeting the MOFRLs for specified LUs; including more productive forest to contribute to MOFRLs; and allowing adjustments to address access and safety requirements. The purpose of this flexibility is to enable optimization of the landscape reserve designs to achieve the overarching goals of ecological integrity by achievement of the representation targets and human well-being which includes the consideration of economic factors such as access to managed forest.

### **Implementation Guidance:**

Detailed guidance on implementation of these targets is contained in the LRD methodology document dated May 2016 referenced in the Minister's letter to District Managers on adjudication of FSPs in the GBR. This methodology document is available at <https://www.for.gov.bc.ca/tasb/SLRP/plan17.html>. Guidance on management of the targets across license areas is also contained in the LRD Methodology.

### **3.1.5 Objectives for Landscape Reserve Designs**

#### **Context:**

Landscape Reserve Designs (LRDs) are a legal requirement to allocate reserves in a spatial design for each landscape unit. Flexibility has been built into the LRD objective to allow for incorporation of new information related to species at risk habitat, rare sites, forest inventory, cultural features and values etc. Some flexibility has also been built into the objective to allow a temporary drawdown below 30% old in limited circumstances and for use of younger forest, more productive forest and to accommodate access and safety requirements. This enables improvement of the LRD over time in response to new or more detailed and accurate information.

The goal of the LRD objective is to provide for the preparation and implementation of landscape reserve designs that identify how the biodiversity, First Nation, wildlife and managed forest objectives of the GBR LUO can be addressed on the ground in each landscape unit and across the GBR Plan Area.

LRDs are an intermediate level planning product that provide a bridge between strategic and site level planning over time. They are prepared in the context of broader strategic land use designations (e.g., Parks, Conservancies, BMTAs, ecological reserves, etc.) and in advance of more detailed resource development and site level planning. They are intended to inform and provide guidance to, and create a more transparent and stable planning environment for, commercial forestry development and operational planning and management activities.

This objective allows a percentage of the Old Forest Representation Targets specified in the order equivalent to the Average Operational Landbase Netdown (AOLN) for that Site Series Group, to not be spatially delineated until 2264. This allows up to the specified percentage amount calculated as the AOLN, to not be spatially defined initially. This aspatial amount is

intended to account for the non-contributing hectares in the THLB that are not spatially identifiable at the strategic planning scale but are anticipated to be located during operational planning and harvesting. The target will be spatialized in the LRD for the portion that is outside the AOLN allowance.

The AOLN is an area-weighted average percentage of the spatial THLB netdown percentages for a SSG in a LU. The netdown is expressed as a percentage from 0% to 100% or as a decimal from .00 to 1.0. The netdown for a given THLB polygon is derived from a THLB inclusion factor, also expressed as a percentage or decimal, that represents the proportion of a THLB polygon that contributes to timber supply. The THLB netdown is calculated as 1 minus the inclusion factor decimal value (or 100% minus the inclusion factor percentage).

#### An example of the AOLN

The hectares that can be left non-spatial are equal to the sum total of all THLB polygon areas for a SSG in a LU multiplied by 75% of the calculated THLB netdown described above. The sum of these calculations represents the target area that can be left non-spatial until 2264. For example:

Total THLB in the SSG in the LU is 50 hectares

30 ha of THLB at 70% operability (inclusion factor) equals 9 hectares ( $30 \text{ ha} * (1-0.70)$ )

10 ha of THLB at 80% operability equals 2 hectares ( $10 \text{ ha} * (1-0.8)$ )

10 ha of THLB at 90% operability equals 1 hectares ( $10 \text{ ha} * (1-0.9)$ )

Multiply the sum of those 3 calculations by 75% to calculate the AOLN in hectares:

Total  $(9+2+1) = 12$  hectares, multiplied by 75% equals 9 hectares which would be the total hectares for the SSG not necessary to spatially define until 2264. These hectares represent the small pockets of non-contributing landbase expected to be located in the THLB in the course of harvesting that are not spatially identifiable at the scale of the forest inventory.

#### **Intent:**

The intent of this objective is to spatialize the Minimum Old Forest Retention Levels and the Old Forest Representation Targets for each SSG at the plan area level by the creation of landscape reserve designs at the LU level. This must occur within 5 years of establishment of the order for those landscape units that are already active or planned for activity in the next 5 years.

For those landscape units with no activity planned in the next 5 years, LRDs must be completed prior to declaration of cutblocks and roads. Flexibility is provided in the objective to allow continuous improvement of the designs as new and more accurate information comes forth that will impact on the designs.

Numerous other values other than old forest are intended to also be captured by the reserves such as: aboriginal heritage features, aboriginal forest resources, and aboriginal tree use, red-listed and blue-listed plant communities, habitats important for species at risk, ungulate winter range, and habitats for regionally important wildlife, including, but not limited to

mountain goats, grizzly bears, northern goshawks, tailed frogs, and marbled murrelets.

The increased flexibility provided by the objectives for use of non-old forest or higher level SSGs as part of the design will allow better overlap of the design polygons with these other values.

### **Implementation Guidance**

Guidance on creating landscape reserve designs is contained in the 2016 LRD methodology document dated May 2016 and referenced in the Minister's letter to Resource District Managers on adjudication of FSPs in the GBR (see <https://www.for.gov.bc.ca/tasb/SLRP/plan17.html>).

### **3.1.6 Objectives for managed and natural forest**

#### **Context:**

The targets for Managed and Natural Forest represent agreement on the total area of forested land in the plan area that is sufficient to support a viable commercial forest sector and support maintenance of ecological integrity.

#### **Intent:**

The intent of this objective is to apply a set of overall targets for identification and maintenance of Natural Forest and Managed Forest in the GBR. They provide a context within which other objectives can be achieved. These targets also provide certainty for the forest sector and for the amount of forest that is to be maintained or restored to a natural forest condition within LRDs.

#### **Implementation Guidance:**

The Operational Planning and Implementation Committee (OPiC) will track trading and the totals for the Natural Forest and Managed Forest. This will form the baseline for measurement against the objective. This objective also has non-legal long term LU level targets for representation and THLB; these targets guide the creation of the LRDs. The LRDs along with the AOLN, other landscape reserves and protected areas will define the Natural Forest and provide an initial estimate of Managed Forest. Harvesting over time will spatially define the entire Managed Forest. The Natural Forest plan area target in the objective is slightly larger than the sum of the targets so there will be some Natural Forest that contributes to the objective target that is not in an LRD or in the AOLN portion of the targets (Natural Forest surplus). Refer to the 2016 LRD Methodology for more information (see <https://www.for.gov.bc.ca/tasb/SLRP/plan17.html>).

### **3.1.7 Objectives for restoration zones and restoration landscape units**

#### **Context:**

Some SSGs in some areas of the GBR, due to a long harvest history and high operability, are below the desired LU minimum old forest retention level of 30%. In these [units](#), restoration

and recruitment for old forest are required to meet the desired minimum old forest targets. These areas have specific requirements for designation of restoration zones. There is less flexibility in restoration zones as the intent of these zones is to restore the forested area to old forest condition to meet the minimum old forest representation targets as soon as possible.

**Intent:**

The intent of this objective is to put an emphasis on restoration and recruitment of old forest in those landscape units where the current level of old forest is below 30%.

**Implementation Guidance:**

Restoration zones are a subset of LRDs and hence guidance on creating these designs is contained in the 2016 LRD methodology document referenced in the Minister's letter to Resource District Managers on adjudication of FSPs in the GBR.

## **3.2 Part 2 Central and North Coast Area**

### **3.2.1 Definitions for Part 2**

The definitions apply to terms used in Part 2.

### **3.2.2 General Context for Part 2**

The objectives in Part 2 only apply to the Central and North Coast area of the Order area (shown in Schedule 2). Part 3 includes similar but sometimes different objectives for the South Central Coast area (shown in Schedule 3). Although many objectives have the same or similar wording in both Part 2 (Central and North Coast) and Part 3 (South Central Coast), they have been kept separate to facilitate potentially different future approaches and amendments to the objectives for the two areas.

### **3.2.3 Objective for First Nations Information Sharing and Engagement**

See section [3.1.3](#); identical wording is used for First Nation Information Sharing and Engagement in all 3 parts.

### **3.2.4 Objective for identification of Aboriginal Forest Resources (AFRs) and Aboriginal Heritage Features (AHFs)**

#### **Context:**

This objective and the supporting definitions provide more detail for cultural heritage resources than the provisions of the Cultural Heritage Resources referred to in section 10 of the Forest Planning and Practices Regulation (FPPR). The objective and the definitions used in the order do not replace the requirements of the *Heritage Conservation Act*. Rather, they complement and extend beyond the scope of the *Heritage Conservation Act* to consider AFRs and AHFs dated before and after 1846.

#### **Intent:**

The intent of this objective is to establish a requirement for the identification of AFRs, AHFs, culturally modified trees, monumental cedar and cultural cedar stands within areas proposed for forest development activities. This can be achieved through a combination of First Nation Information Sharing and Engagement, review of available documents and reports, and field reconnaissance activities and field assessments.

#### **Implementation Guidance:**

To the extent possible, licensees will identify and map AFRs and AHFs early in their operational planning process. Approaches for achieving the intent of this objective could include the following:

- Obtaining information about AFRs, AHFs, historical and contemporary CMTs, and cultural cedar stands in proposed development areas through information sharing and engagement with Applicable First Nations;

- Undertaking other research to identify and obtain local knowledge and information about AFRs, AHFs, historical and contemporary CMTs, and cultural cedar stands;
- Performing field inventories and assessments of AFRs, AHFs, historical and contemporary CMTs, and cultural cedar stands; and
- Collaborating with Applicable First Nations to perform field inventories and assessments of AFRs, AHFs, historical and contemporary CMTs, and cultural cedar stands.

### **3.2.5 Objective for Aboriginal Forest Resources (AFRs)**

#### **Context:**

A large number of trees and plants are important to First Nations. The list in Schedule J identifies many of the common tree and plant resources used by First Nations. Additional species may be identified through First Nations information sharing and Engagement. Management can vary from retention of forested areas to active management strategies to promote specific plants; e.g., removal of forest cover fully or partially to promote shade intolerant species growth. The following report provides information on the historical uses of many of the plants utilized by First Nations in the GBR area: “Where our women used to get the food”: Cumulative effects and loss of ethnobotanical knowledge and practice; case study from coastal British Columbia. Nancy J. Turner and Katherine L. Turner, School of Environmental Studies, University of Victoria:

<http://www.nrcresearchpress.com/doi/abs/10.1139/B07-020>

#### **Intent:**

The intent of this objective is to provide for the maintenance and stewardship of the AFRs listed in Schedule J, or other AFRs identified through First Nations Information Sharing and Engagement, in sufficient quantities and in locations that support the present and future use of those AFRs by Applicable First Nations. Information Sharing and Engagement with First Nations can help to inform strategies for protection and stewardship of AFRs.

#### **Implementation Guidance:**

Approaches for achieving the intent of this objective could include the following:

- Reviewing First Nations land use plans, supporting documents and scientific literature containing information and management strategies regarding traditional resources.
- Sharing information and engaging with the applicable First Nation regarding the known or potential location of AFRs and any applicable indigenous laws or customs regarding their protection and stewardship.
- Collaborating with Applicable First Nations to perform field inventories and assessments of AFRs.
- Conducting field inventories and assessments of AFRs within proposed development areas, roads and cutblocks.



- Adjusting planned harvesting, road building and forest management activities to provide for maintenance and stewardship of AFRs.

### **3.2.6 Objective for Aboriginal Heritage Features (AHFs)**

#### **Context:**

This objective is the outcome of G2G discussions regarding the identification, protection and stewardship of AHFs.

#### **Intent:**

The intent of this objective is to provide protection for AHFs. In addition to the AHFs listed in [Schedule I](#) of the Order, other AHFs that are of importance to an Applicable First Nation may be discovered through First Nation Information Sharing and Engagement. For certain types of AHFs (e.g. oral history sites and spiritual sites), First Nation Information Sharing and Engagement may be the only way to identify location and spatial boundaries. Operational flexibility is provided by allowing alteration of AHFs and their reserve or management zones in specific circumstances.

#### **Implementation Guidance:**

Approaches for achieving the intent of this objective could include the following:

- Reviewing First Nations land use plans, supporting documents and scientific literature containing information and management strategies regarding AHFs;
- Information Sharing and Engagement with designated First Nation representatives regarding the known or potential locations of AHFs and any applicable indigenous laws or customs regarding their protection and stewardship;
- Performing field inventories and assessments of AHFs.
- Collaborating with Applicable First Nations to perform field inventories and assessments of AHFs.
- Adjusting planned harvesting, road building and forest management activities to provide for protection of AHFs.

### **3.2.7 Objectives for Historical Culturally modified Trees**

#### **Context:**

This objective is the outcome of G2G discussions regarding the identification and protection of historical culturally modified trees (HCMTs). For culturally modified trees created prior to 1846 an alteration permit is still required under the *Heritage Conservation Act* in addition to the requirements of the Order.

### **Intent:**

The intent of this objective is to provide for the identification and protection of HCMTs. This objective, along with the overarching objective for First Nations Information Sharing and Engagement, directs licensees to share information and work with First Nations to protect HCMTs within areas proposed to be altered or harvested. Where alteration or removal of a HCMT may be considered the following criteria must be met:

- The HCMT and the Management Zone may be modified with the support of, or lack of objection from, the Applicable First Nation.
- The HCMT and the adjacent Management Zone may be altered or harvested if there has been First Nation Engagement with Applicable First Nations; and
  - (a) alteration or harvesting is required for road access, other infrastructure, or to address a safety concern, and there is no practicable alternative; or
  - (b) protection of all of the Historical Culturally Modified Trees in the cutting permit area or timber sale licence area would make harvesting economically unviable.

The term 'practicable' is defined in FRPA general bulletin number 3 ([http://www.for.gov.bc.ca/hth/timten/FRPA\\_implementation/Bulletins.htm](http://www.for.gov.bc.ca/hth/timten/FRPA_implementation/Bulletins.htm).) It provides two definitions, one for planning and a second for a practice requirement. For a practice requirement, practicable takes into account the balance of social, economic and environmental interests. For this objective, 'practicable' applies where alterations are proposed for reasons of road access, other infrastructure or safety. It should be demonstrated that these requirements are unavoidable, and that there are no other practicable alternatives.

### **Implementation Guidance:**

Approaches for achieving the intent of this objective could include the following:

- Meeting with applicable First Nations to gather information on HCMTs. First Nations may have culturally modified tree policy documents and there may be procedures in place between First Nations and licensees that are sufficient to meet this objective;
- Establishment of management zones of sufficient design and size to protect the HCMT from windthrow and other site specific risks;
- Completion of HCMT inventories by reconnaissance or detailed survey, as appropriate, within areas of proposed road layouts and cutblocks;
- Communication and information sharing between licensees and First Nations regarding site plans for harvesting and road building, as well as associated strategies to maintain HCMTs.

The publication “The Significance and Management of Culturally Modified Trees” (1997) provides an overview of culturally modified tree significance:

[https://www.for.gov.bc.ca/ftp/archaeology/external/!publish/web/culturally\\_modified\\_trees\\_significance\\_management.pdf](https://www.for.gov.bc.ca/ftp/archaeology/external/!publish/web/culturally_modified_trees_significance_management.pdf)

### 3.2.8 Objectives for Aboriginal Tree Use

#### **Context:**

This objective covers the use of cedar and other tree species to fulfill the domestic needs of the Applicable First Nation for such things as shelter, transportation, tools, fuel, and art, but does not include the use of Monumental Cedar, other cedar or other tree species for purposes of commercial production or sale.

#### **Intent**

The intent of this objective is to ensure sufficient quantities of western red cedar, yellow cedar and other tree species are maintained to support present and future aboriginal tree use by Applicable First Nations.

#### **Implementation Guidance:**

Approaches for achieving the intent of this objective could include the following:

- A meeting between Forest Licensees and applicable First Nations to gather information on present and future aboriginal tree use;
- Collaboration between First Nations and Licensees to develop and implement a Cedar Strategy for each territory. Such strategies may include:
  - Expectations and standards identified by the First Nation;
  - A protocol for establishing reserves for monumental cedar use;
  - A protocol to work collaboratively as part of operational planning to identify monumental cedar;
  - Dialogue between the Forest Licensees and First Nations on what constitutes a monumental cedar (e.g. tree defect tolerances, size, amount of clear wood, etc.).

The amount of monumental cedar required by First Nations will vary and therefore First Nation engagement is required. There are examples of Cedar Strategies where uses and grade profiles required by First Nations have been completed. For example, see the Guidelines for Managing Cedar for Cultural Purposes by the Coast Forest Region (January 2005) at: [\(http://www.for.gov.bc.ca/ftp/DNI/external!/publish/FRPA%20Objectives%20Matrix/Documents%20to%20Support%20Objectives%20Matrix/TSA%20Cedar%20Analyses/final%20Cedar%20Strategy%20document/\)](http://www.for.gov.bc.ca/ftp/DNI/external!/publish/FRPA%20Objectives%20Matrix/Documents%20to%20Support%20Objectives%20Matrix/TSA%20Cedar%20Analyses/final%20Cedar%20Strategy%20document/)

Where Cedar Strategies have identified specific locations that will provide a sufficient amount of monumental cedar over time, individual block assessments may not be required. However, if monumental cedars are located during reconnaissance, engagement regarding their locations and potential retention or use may occur depending upon agreements with the First Nation.

When a monumental Cedar is harvested under subsection (4) of the objective, or for the purpose of providing monumental Cedar to an applicable First Nation, the associated

windfirm buffer can also be harvested.

A cultural cedar stand is defined in the Order as three or more Monumental Cedars or Contemporary Culturally Modified Trees (CCMTs) where each tree is within 30 metres of another Monumental Cedar or CCMT. The 30 metre distance is measured from bark to bark to determine if the trees constitute a cultural cedar stand. As new CCMTs are added to the landscape, the boundaries of cultural cedar stands will be altered and new stands may be created.

### **3.2.9 Objective for retention of western yew**

#### **Context:**

Western yew trees are important for aboriginal traditional use.

#### **Intent**

The intent of this objective is to conserve a portion of western yew trees for traditional use and to have the species be accessible for use by documenting locations within development areas. The objective specifies retention of western yew trees, generally (a tree is considered to be > 2m tall). There are two specific exceptions to retention of western yew trees in a cutblock. These include situations when:

- Alteration or harvesting is required to accommodate operational requirements for road and bridge construction and there is no practicable alternative; or
- The retention of all western yew trees in a cutblock would make harvesting economically unviable and measures are implemented to provide for use of the altered or harvested western yew trees by Applicable First Nations.

The intent is not to conserve all western yew trees but to create an inventory in cutblocks that can be accessed for use by First Nations. There is also a reporting requirement that all retained western yew trees are documented and this information is submitted as digital spatial data at the end of each calendar year to the Applicable First Nation and the Province of British Columbia.

#### **Implementation Guidance:**

Approaches for achieving the intent of this objective could include the following:

- Incorporating areas of western yew into Wildlife Tree Retention (WTR) patches, riparian reserves, cultural reserves or landscape reserves.

### **3.2.10 Objectives for important fisheries watersheds**

#### **Context:**

Equivalent Clearcut Area (ECA) is a measurement of the amount of forested landbase in a watershed that has been harvested and has not recovered to a state of hydrologically effective green-up. The objective establishes a default ECA which can be exceeded if a detailed watershed assessment is completed.

Hydrologically Effective Green-up is defined in the Order in terms of hydrological recovery. Hydrological recovery is further discussed using actual measures on page 32 of the [1999 Coastal Watershed Assessment Procedure Guidebook](#). Hydrological recovery occurs proportionally as a stand develops toward hydrologically effective green-up. This proportional recovery is explained in Table A2.2 of the 1999 Coastal Watershed Assessment Procedure Guidebook replicated as Table 1 on page 12.

**Intent:**

The intent of this objective is to ensure forest development activities do not have a material adverse impact on hydriparian processes and habitats in important fisheries watersheds. The key focus for management is to maintain key habitats and structures, as well as to sustain natural hydrological and fluvial processes, such that water quality and quantity is maintained within the range of natural variation to help sustain habitat quality and attributes over time. Flexibility is provided by allowing precautionary levels of harvesting before watershed assessment and more detailed planning and monitoring are required (i.e. <20% ECA). Further flexibility is provided by allowing more extensive harvesting to occur in accordance with the information derived from completed watershed assessments and through First Nation Information Sharing and Engagement.

**Implementation Guidance:**

The coastal watershed assessment procedure or similar assessment is used here as a baseline to develop management strategies. These strategies must be monitored for effectiveness which, through adaptive management, will lead to refinement of the management strategies to ensure the intent of the objective is being met.

### **3.2.11 Objectives for Type 1 Aquatic Habitat**

**Context:**

Type 1 Aquatic Habitat is defined more broadly than fish habitat in that it also encompasses habitat for marine invertebrates. The measures for protection of Type 1 aquatic habitat also consider terrestrial habitat needs and linkages between habitats. The definition of Type 1 aquatic habitat includes herring spawn areas, kelp beds and other highly productive nearshore habitat used by marine invertebrates for reproduction and rearing. This is intended to cover marine invertebrates of commercial value and those traditionally used by First Nations<sup>4</sup>.

**Intent:**

The intent of this objective is to protect hydriparian ecosystems which contain Type 1 Aquatic Habitat and to maintain and/or accelerate the natural ecological progression towards late seral structure of forests adjacent to Type 1 Aquatic Habitat. Riparian forests adjacent to Type 1 Aquatic Habitat are reserved to protect functions and habitat values by considering risks to those reserves from agents such as windthrow. Where such forests were damaged or

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<sup>4</sup> <https://www2.viu.ca/csr/publicinterest/MarineInvertebrates.asp>

removed in past disturbances, recruitment or creation of functional riparian forest is required to the extent practicable by subsection (5). Flexibility is provided by allowing the width of the riparian forest reserves to be adjusted on a site-specific basis and over a development area, using the no net loss principle for retention of the reserve zones.

### **Implementation Guidance:**

Determining the location of Type 1 Aquatic Habitats will require development area and stand level assessments to identify the elements listed in the definition. There are two levels of flexibility provided in the objective in the management of the reserve zones for Type 1 Aquatic Habitat.

- 1) The width of the reserve zone can be varied by up to 0.5 tree lengths along any given length of Type 1 Aquatic Habitat within a development area, provided that the total area of reserve is equal to the area that would be provided using a width of 1.5 tree lengths. This concept of no net loss allows adjustment for site specific variance of the reserve zone as long as a minimum width of 1.0 tree length is maintained.
- 2) To utilize a reserve zone less than 1.0 tree length in width in the riparian reserve requires an assessment to be completed as per subsection (3). The intent is that extra rigour is required to reduce the reserve zone to less than 1.0 tree length for a portion of the stream. The requirement of no net loss of reserve zone over the development area is maintained in order to utilize this increased flexibility.

Subsection (4) provides a set reserve width with limited variance allowances for the lower portion of the Kimsquit River and its tributaries. Schedule P in the order shows a visual representation of the reserve, the source data and field location should be used in implementing these reserves.

For subsection (5), the recruitment of functional riparian forest may involve reserving younger forest from harvesting or actively applying silvicultural treatments in an effort to speed the recruitment of desired riparian forest attributes (i.e., restoration).

### **3.2.12 Objectives for Type 2 Aquatic Habitat**

#### **Context:**

The definition of Type 2 Aquatic Habitat and the various features included in it are critical to the application of this objective. The interpretations for Fen and Marsh are the same as for Type 1 Aquatic Habitat and are covered in section [2.2.2](#) of this document.

#### **Intent:**

The intent of this objective is to maintain the natural ecological function of Type 2 Aquatic Habitat. The focus is to sustain hydrological processes and ecological structure and function in these ecosystems. Where forests adjacent to Type 2 Aquatic Habitat were damaged or removed in past disturbances, recruitment or creation of functional riparian forest is required to the extent practicable by subsection (4). Flexibility is provided by allowing the width of

the riparian forest management zone to be adjusted on a site-specific basis.

### **Implementation Guidance:**

Determining the location of Type 2 Aquatic Habitats will require development area and stand level assessments to identify the elements listed in the definition.

There are two levels of flexibility provided for management zones:

- a) The width of the management zone can be varied by up to 0.5 tree lengths along any given length of Type 2 Aquatic Habitat within a development area provided that the total area of management zone is equal to the area that would be provided by a set width of 1.5 tree lengths of management zone. This concept of no net loss allows adjustment for site specific variance of the management zone but is limited to a minimum width of 1.0 tree length.
- b) To utilize a management zone less than 1.0 tree length in width at any given point in the riparian management zone area and to have less than 90% retention in the management zone requires an assessment to be completed as per subsection (3). The intent is that extra rigour is required to reduce the reserve zone to less than 1.0 tree length for a portion of the stream. The requirement of no net loss of management zone over the development area is maintained in order to utilize this increased flexibility.

For subsection (4), the recruitment of functional riparian forest may involve reserving younger forest from harvesting or actively applying silvicultural treatments in an effort to speed the recruitment of desired riparian forest attributes (i.e. restoration).

### **3.2.13 Objectives for Forested Swamps**

#### **Context:**

Forested swamps are important hydroriparian features with structures and functions that should be protected. They are more common in the CNC portion of the GBR as there are more wet variants in this part of the plan area.

Forested swamps may be found occasionally throughout the wetter portions of the South Central Coast (e.g., CWHvh and CWHvm), but are much less common than bog-associated ecosystems. In drier portions of the South Central Coast (e.g., CWHxm and CWHdm), forested swamps are more scattered and sporadic, usually associated with strongly fluctuating water tables. Forested swamps and their associated riparian forest may be diverse in vegetative cover and/or structures and can provide important habitat for a variety of species. This function is particularly important in the drier, relatively rare CWHxm and CWHdm.

Forested swamps often represent a transition between upland forest and other types of wetlands. This transition area can provide valuable structure and cover for amphibians, birds and other wildlife that utilize both habitats. Forested swamps and their associated riparian forest also provide diversity in the forested landscape and can be areas of concentrated feeding by bears, as well as off-channel and backchannel fish habitat. A

challenge for identification of forested swamps is to differentiate them from poorly drained upland forests. Forested swamps provide a diverse range of ecological niches. While they are generally marginal for timber production, harvesting is risky since water tables will rise post-harvest, micro-topography is easily destroyed, and brush competition may be high. Most trees in forested swamps are perched on raised microsites and may need wind protection provided by adjacent timbered edges to protect them from endemic winds.

### **Intent:**

The intent of this objective is to maintain the natural ecological function of forested swamps. The objective directs licensees to manage riparian forests adjacent to those ecosystems in a manner that sustains hydrological processes and the ecological composition, structure and function of those forests. Flexibility is provided by allowing licensees to vary the width of the management zone on a site-specific basis, and to harvest additional volume from management zones, subject to certain conditions.

### **Implementation Guidance:**

- To specifically identify ecosystems as forested swamps, they should first meet the criteria provided in the "definitions" sections of the Order. In addition, they should have >35% cover of trees > 10 m in height to be considered "forested".
- Forested swamps are not "bogs" and so should have few plant indicators for bogs and bog-associations. A bog can be defined as a nutrient-poor Sphagnum- dominated peatland ecosystem in which the rooting zone is isolated from mineral- enriched ground water. The soils are acidic and few minerotrophic plant species occur.
- Forested swamps do not include poorly drained areas transitional to uplands where Folisolic growing substrate (i.e. folic material derived from the litter of trees and lesser vegetation of upland sites) occupies 50% or more of the site. These folisolic growing substrates will appear as raised microsites that have freely draining organic materials, supporting "zonal vegetation" such as blueberries, salal, bunchberry, step moss and lanky moss.
- Forested swamps include hydromorphic organic matter (organic material accumulated under saturated conditions) and wetland species; hydrophytes occupy more than 50% of the site area. These sites have saturated mineral and/or organic soils with hydrophytic plants that are able to transport oxygen down into roots, such as skunk cabbage, sphagnum and others.
- To meet the requirement of retaining "the amount of functional riparian forest sufficient to maintain the integrity of the forested swamp" the following should be considered:
  - Forested swamps are a form of wetland and, as such, are sensitive to changes in the water table. Therefore, harvesting activities, especially road-building activities, have the potential to have significant negative impacts through water table alteration. Maintenance of the hydrology of the forested swamp is important for successful management of these areas.



- Even though they can be natural "sediment sinks", forested swamps can be sensitive to sedimentation if the added sediment alters the aquatic or riparian habitats. Therefore, harvesting operations, especially road-building, need to address sediment management in order to effectively protect the swamps.
- Forested reserves should be designed such that they are functional over the long-term (rotation length or longer), making windthrow management a key element in the design of the reserve.

The following information may also be of interest:

1. A 2007 literature review by T. Lewis, Forested Swamps of central and north coast of British Columbia at:  
[https://www.for.gov.bc.ca/tasb/slrp/lrmp/nanaimo/central\\_north\\_coast/docs/Forested\\_Swamps-Lewis2007.pdf](https://www.for.gov.bc.ca/tasb/slrp/lrmp/nanaimo/central_north_coast/docs/Forested_Swamps-Lewis2007.pdf)
2. Wetlands of BC: <https://www.for.gov.bc.ca/hfd/pubs/docs/lmh/lmh52.htm>

### 3.2.14 Objectives for Upland Stream areas

#### **Context:**

The role that Upland Streams play in the watershed over and above provision of flow to lower order streams is as follows. First, they provide downed wood to the hydroriparian system episodically through debris torrents. This function is particularly important in watersheds dominated by second growth. Second, small streams transport sediment to downstream reaches. Both of these functions have a characteristic rate and amount.

Upland streams also provide some specialized habitats for biodiversity, particularly where gradients are not excessive and/or several streams merge to maximize the effect of water on the upland ecosystems. Very steep streams can also have unique microclimates and provide habitat for specialized species (e.g., cascades through narrow channels). Management of these streams is of particular concern in watersheds with combinations of a large amount of sensitive terrain, a large proportion of previous harvesting or other disturbance, and important fish populations.

#### **Intent:**

The intent of this objective is to maintain the natural ecological function of upland streams and to provide for the maintenance of hydrological and ecological processes within specified watersheds. The objective does not require management for every small upland stream, but instead directs licensees to maintain an amount and distribution of functional riparian forest across the upland portion of the watershed that is sufficient to maintain functions and processes within their natural range.

Flexibility is provided by allowing harvest of additional area (i.e., less than 70% of the forest may be maintained as Functional Riparian Forest) in the upland portion of the watershed subject to the conditions listed in the objective.

### **Implementation Guidance:**

This objective applies to all watersheds in Part 2. The actual height of land on the ground will determine the boundary of these watersheds; maps depict only a generalized location. For the intent of this section, the contribution toward the 70% functional riparian forest should be ideally determined using the stands within the upland watershed area that meet the intent of the definition of Functional Riparian Forest.

Since it is really the "upland" slopes that are being managed rather than specific streams, the upland area to which these requirements will apply is intended to be those forested portions of a watershed with > 5% slope. Streams in such areas are likely non- alluvial (i.e., in a confined channel without a floodplain), although some reaches may have alluvial portions and riffle-pool morphology, meeting the intent for this section.

The objective directs preferential allocation of the 70% as follows:

1. Upland Streams that flow into Type 1 Aquatic Habitat and Type 2 Aquatic Habitat and that pose a moderate to high risk of sediment transport;
2. Upland Stream reaches with unique microclimate or other rare ecological or sensitive geomorphological characteristics;
3. Upland Stream reaches with known tailed frog habitat;
4. Other Upland Streams that flow into Type 1 Aquatic Habitat and Type 2 Aquatic Habitat.

As already indicated, the forested stands that contribute to the 70% functional riparian forest in upland areas do not have to be associated with specific streams. Stand level retention associated with cutblocks harvested under the order also contribute to the 70% upland forest requirement. Examples of watershed planning for upland streams in category 2 above are areas with terrain stability concerns and active fluvial units. Also, at the stand level the following priorities for reserves or retention may be considered (based on a June 2007 Watershed Assessment Procedure Presentation by Glynnis Horel):

- a) Sensitive gullies with high potential for sediment transport (based on gully assessments);
- b) S4 (small streams with fish), and steep small streams with unique microclimates; (as they are uncommon in upland areas)
- c) Seasonal/perennial semi-alluvial S5 streams;
- d) Seasonal/perennial semi-alluvial S6 streams;
- e) Seasonal/perennial non-alluvial S5 streams;
- f) Ephemeral S5 with other specific ecological values;
- g) Ephemeral S6 with other specific ecological values.

### **3.2.15 Objectives for Active Fluvial Units**

#### **Context:**

These units are sensitive to harvesting, as the riparian vegetation, especially large trees, is important for limiting erosion, stabilizing banks and reducing sedimentation rates. If functional riparian forest is removed, significant channel widening and loss of channel complexity and associated habitat can occur.

**Intent:**

The intent of this objective is to maintain the existing integrity and natural ecological function of active fluvial units by retaining forest in the management zone. The objective directs licensees to retain all of the forest located on Active Fluvial Units except where harvest is required for road access or a safety concern. Additional protection is provided by the requirement for a management zone for the Active Fluvial Unit.

**Implementation Guidance:**

Active Fluvial Units, particularly alluvial streams, often overlap with other aquatic habitat features (for example: active fluvial units and high value fish habitat). In such cases, the feature with the greatest requirements for protection should prevail, which ultimately may satisfy requirements for multiple features.

Because alluvial streams within Active Fluvial Units are often associated with Type 1 and Type 2 aquatic habitat, alluvial stream reaches that are fish bearing should be assumed to be Type 1 or Type 2 aquatic habitat unless an assessment by a qualified professional has confirmed otherwise.

In many cases, it may be necessary to maintain the entire Active Fluvial Unit as well as a reserve that will function to adequately protect it from destabilization. Alluvial fans (as an Active Fluvial Unit) have specific requirements under FRPA to prevent destabilization. Useful references on Active Fluvial Units include:

**Defining Active Fluvial Units:**

<http://www.coastforestconservationinitiative.com/EBM/documents/DefiningActiveFluvialUnits-April2006.pdf>

**Forest Management on Fans - Hydrogeomorphic Hazards and General Prescriptions:**

<http://www.for.gov.bc.ca/hfd/pubs/Docs/Lmh/Lmh57.pdf>

### 3.2.16 Objectives for Red-Listed and Blue-Listed Plant Communities

**Context:**

Red or Blue-Listed Plant Communities can be either ecologically rare, or rare due to past disturbance pressure reducing their overall abundance. In the Order area, plant communities in Schedules N and O were identified based on perceived ecological risk relative to implementation of the Order, and do not necessarily align with the Conservation Data Centre (CDC) listed plant communities.

For clarity, a site series is a climatically and edaphically classified site unit, regardless of present vegetation, that has similar environmental properties and potential vegetation. A plant community is an assemblage of plants that relates to a specific successional stage and reflects the climate and soils of a site series. Most plant lists provided in the [Ecological Field Guide](#) represents the 'potential vegetation' for the climax or near-climax condition. Therefore, they can be used to help identify the plant communities that are included in Schedules N and O in the order.

**Intent:**

The intent of this objective is to protect and maintain the abundance and distribution of existing rare, threatened and endangered plant communities. All sufficiently established occurrences of Red-Listed Plant Communities are to be protected, while at least 70% of the sufficiently established occurrences of Blue-Listed Plant Communities are to be protected. Schedules in the Order define the plant communities in each category.

Flexibility is provided by allowing very limited harvesting of Red-Listed Plant Communities, only when necessary for road access or safety and there is no practicable alternative, and by allowing harvesting of a proportion of the Blue-Listed Plant Communities.

**Implementation Guidance:**

For the order, preservation of Red and Blue-Listed Plant Communities refers to those sites that are:

1.
  - a. sufficiently established;
  - b. have a minimum area of:
    - i. 0.25 hectares for a discrete occurrence; or
    - ii. 2.0 hectares for a complex occurrence where the blue-listed plant community is the dominant community; and
  - c. associated with forests 200 years of age or older; or
2. associated with forests less than 200 years of age and;
  - a. a floodplain ecosystem;
  - b. have a veteran overstory tree layer<sup>5</sup> remaining; or,
  - c. have a structural stage of either 6 or 7.

Identification of Red and Blue Listed ecosystems will be contained in a still to be developed Field Guide. Refer also to the Conservation Data Centre Ecosystem Explorer linking plant communities to site series <http://a100.gov.bc.ca/pub/eswp/search.do>.

**3.2.17 Objectives for Stand Retention**

**Context:**

Areas designated for stand retention should consist of a mix of species and stand characteristics representative of the pre-harvest stand. In general, no single retention strategy is appropriate for all sites. Factors, such as stand type and condition, tree species and windthrow hazard, create a unique set of conditions for each stand. A strategy that

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<sup>5</sup> “Veteran overstory tree layer” means trees that are considerably older than the rest of the stand and are remnants of a much older stand. Veteran trees will have a much larger diameter or height than the main stand. The size or age of the trees, along with the density of veteran trees required to constitute a layer will be dependent on the characteristics of the rest of the stand as well as the overstory trees

incorporates a diversity of approaches to stand retention is the most effective. The minimum 15% retention specified in the objective is more than double the default amount specified in the Forest Planning and Practices Regulation (7%).

**Intent:**

The intent of this objective is to retain structural and habitat elements at a stand level that enhance landscape level connectivity and provide specific habitat niches within the harvest area. The objective requires a minimum retention level of 15% for all cutblocks, and in certain circumstances further requires a minimum of 50% of this retention to be located within the cutblock (for harvest areas that are greater than 20 hectares). Larger retention patches can also contribute to landscape level biodiversity by inclusion in Landscape Reserve Designs (LRDs).

Refer to the 2016 LRD Methodology (section 3.5.1 “The elements of Good Design” bullet 7 - Stand level features) for detail on size requirements for a stand retention patch to be part of LRD (see <https://www.for.gov.bc.ca/tasb/SLRP/plan17.html>).

**Implementation Guidance:**

Stand level retention is intended to be left long-term (for at least an entire rotation). A minimum of 15% of the total area under prescription must be retained as long-term reserves.

When retention is located contiguous to a cutblock, it should be mapped in order to ensure that it is retained through time.

It should be noted that some windthrow is expected. Windthrow risk should be assessed and blocks designed to minimize it. The potential impacts on the quality and distribution of stand level retention patches for biological diversity should be carefully considered and minimized where possible.

For blocks within the Net Area to be Reforested (NAR) of 20 ha or greater, a minimum of 50% of 15% (7.5%) of the Gross Block area is intended to be internal to the block. To be considered "internal", it is suggested that retention have harvesting disturbance on a minimum of two opposing sides. Accordingly, this retention may be attached to the block edge, running through the block as a riparian strip, or protruding into the block as a peninsula of retention. The intent is for the retention to be well-distributed. To promote good distribution, roughly 200 metres may be used as a rough target for maximum distance between groups.

Stand level retention requirements in the Order replace the objective set by government through FRPA for wildlife and biodiversity at the stand level.

For blocks with NAR less than 20 ha, the retention need not be internal. A minimum of 15% of the Gross Block Area is required to be associated with the opening. It needs to be contiguous with the block (no satellites). For these smaller blocks, retention can be internal if good anchors are present and it is safe to do so.

### 3.2.18 Objectives for Grizzly bear habitat

#### **Context:**

Grizzly bears are a focal species in the GBR and both Parts 2 and 3 of the Order have protection for Class 1 Grizzly habitat. Part 2 (Central and North Coast) has additional protection for Class 2 Grizzly habitats and Grizzly and Black bear dens.

#### **Intent:**

Grizzly bears are a highly important regional species in the GBR. To support the long term viability of this species, Part 2 of the order spatially identifies sensitive (Class 2) and critical grizzly bear habitat (Class 1). The objective requires that Class 1 habitat be maintained as functional habitat and that 50% of the Class 2 habitat be retained.

Flexibility is provided to allow for harvesting or alteration of Class 1 and 2 habitats if a qualified professional confirms that the proposed disturbance will maintain or enhance the conditions and structures necessary to ensure the area remains suitable for use by grizzly bears.

#### **Implementation Guidance:**

Current Class 1 and Class 2 grizzly habitat mapping and associated data files for the Order area are available on the following websites:

GBR webpage: <https://www.for.gov.bc.ca/tasb/SLRP/plan17.html>

Schedule D Grizzly Bear Habitat:

[https://www.for.gov.bc.ca/tasb/SLRP/lrmp/nanaimo/CLUDI/GBR/Schedules/GBR\\_2016/GBRSchD\\_GB\\_20160104.pdf](https://www.for.gov.bc.ca/tasb/SLRP/lrmp/nanaimo/CLUDI/GBR/Schedules/GBR_2016/GBRSchD_GB_20160104.pdf)

Some Class 2 habitats are more important for bear survival than others. When planning for retention of Class 2 habitat polygons, consider the following:

- It is more important to protect the less common, lower elevation Class 2 habitat types. Class 2 early and late spring habitats are the least common of any of the seasonal habitats, and provide bears with nutrient-rich forage post-denning;
- Class 2 habitats found along streams used for fall fishing;
- Class 2 habitats found in the CWHvh subzone (i.e., where bears are known to occur in landscapes containing this subzone);
- Where possible, maintain connectivity at the landscape scale between foraging habitats. This allows for bears to move between feeding locations, providing security and thermal cover. Connectivity can be achieved through forested hydro-riparian corridors and other forest areas that have been located for other values (e.g., ecosystem representation, habitat for other focal species).

### 3.2.19 Objectives for Grizzly and Black bear dens

#### **Context:**

Coastal black bears rely on old-growth structures for winter denning so retention of existing den trees, in combination with the overall old forest retention required in Part 1 of the Order, will contribute significantly to conservation of denning habitat for black bears. Black bear dens are usually found in western red cedar (Cw), yellow cedar (Cy), or western hemlock (Hw). They occur from lower elevation to higher elevation (CWHvm2).

Grizzly bears dig dens at higher elevations in old forests and non/sparsely treed areas with good drainage, as well as denning in caves. As the Grizzly bear is a focal species for the area, a reserve zone is required for grizzly bear dens. Denning bears are susceptible to disturbance, resulting in physiological stress within 1000 m of the den site. These effects are particularly acute when disturbance occurs less than 200m from the den (Linnell et al. 2000). Therefore, it is important that we understand where bears den and the ecological and management concerns that are associated with these vital habitat features. The definition of a bear den in the order is: “a den identified by a Qualified Professional that is suitable for winter hibernation and maternity”. The order requires protection of bear dens but identification in the field is left to the qualified professional.

#### **Intent:**

The intent of this objective is to conserve bear dens at the stand level during operations as this is the most common manner in which they are encountered.

#### **Implementation Guidance:**

Den trees can be incorporated into stand retention or other reserves to minimize impact to timber and, in the case of black bear dens, provide additional protection beyond reservation of the tree itself.

For the purpose of black bear conservation it is important to protect dens used for hibernation and maternity, including dens that have a high likelihood of being used during more than one season. Criteria used by a qualified professional may include:

- 1) Entrance to the den is large enough to allow pregnant females to enter prior to hibernation, yet small enough to prevent males from gaining entrance; i.e., 30-40 centimeter diameter;
- 2) Cavity entrances are off the ground such that bears won't be on potentially wet or frozen ground;
- 3) Cavity entrances are sheltered from rain;
- 4) The internal cavity provides dry shelter and enough room for a female to be “arms length” from the entrance;
- 5) The den has evidence of use such as introduced bedding, scratches around the entrance and bear hair around the entrance.

### 3.2.20 Objectives for Kermode habitat

#### **Context:**

Kermode Bears or Spirit Bears have cultural and economic significance to First Nations and are an iconic species that contributed to the naming of the area as the Great Bear Rainforest. As an outcome of G2G discussions with the Gitga'at First Nation, additional protection is provided for this black bear subspecies by the designation of Kermode stewardship areas.

For the GBR area, early-seral forest is considered to be forest less than 40 years of age and mid-seral forest is considered to be 41-79 years of age. This is based on the age ranges for Natural Disturbance Types (NDT) 1 and 2, which make up the disturbance regime types for the plan area.

Dens are the highest priority, but several of the seasonal feeding habitats (e.g., estuaries, beaches, avalanche chutes, swamps, wetlands, fall salmon fishing areas, etc.) and even "escape" trees (retention) are also important elements of black bear habitat. Large deciduous trees, such as cottonwoods, are also used by black bears for dens along with large conifers. There is a reasonably high degree of overlap in critical habitat with grizzly bears. The highest quality forested black bear habitats provide structural diversity (horizontal and vertical) with a diversity of age classes, species and canopy openings. Good black bear habitat is composed of big trees in open forest with canopy gaps that allow for understory forage to develop and is in close proximity to salmon-bearing streams.

#### **Intent:**

Kermode Bears are a unique subspecies of black bear. Approximately 10% of black bears have the recessive gene trait that gives them white-coloured fur. They are a highly important regional subspecies in the Central and North coast portion of the GBR. To support the long term viability of this subspecies, Part 2 of the Order identifies the Kermode Stewardship Area, as shown in Schedule T, and requires maintenance of early and mid-seral forest, crown closure management and maintenance of critical black bear habitat. Flexibility is provided by allowing a small amount of harvesting of critical black bear habitat where such harvesting is required for road access or safety.

#### **Implementation Guidance:**

Approaches for achieving the intent of this objective could include the following:

- A meeting between Forest Licensees and Gitga'at First Nation will enable information sharing regarding Kermode abundance, distribution and travel routes.
- Collaboration between Forest Licensees and Gitga'at First Nation to develop and implement a Kermode habitat stewardship and disturbance mitigation strategy and a Kermode wildlife viewing strategy could help with implementation of this objective
- Kermode den trees can be incorporated into stand retention or other reserves to minimize impact to timber and, in the case of black bear dens, provide additional protection beyond reservation of the tree itself.



### **3.3 Part 3 South Central Coast Area**

#### **3.3.1 Definitions for Part 3**

These definitions apply to all of Part 3.

#### **3.3.2 General Context for Part 3**

The objectives in Part 3 only apply to the South Central Coast portion of the GBR area. Although many objectives have the same wording in Part 2 (Central and North Coast) and Part 3 (Central and South Coast) they have been separated to allow different approaches to the objectives for the two areas.

#### **3.3.3 Objective for First Nations Information Sharing and Engagement**

For the purpose of implementing and achieving the intent of the objectives in the Order conduct First Nation Engagement with Applicable First Nations. The wording of this objective is identical to the objective in Part 2, see [3.2.3](#) for context, intent and implementation guidance.

#### **3.3.4 Objective for identification of Aboriginal Forest Resources and Aboriginal Heritage Features**

The wording of this objective is identical to the objective in Part 2. For context, intent and implementation guidance see section [3.2.4](#).

#### **3.3.5 Objective for Aboriginal Forest Resources**

The wording of this objective is identical to the objective in Part 2. For context, intent and implementation guidance see section [3.2.5](#).

#### **3.3.6 Objective for Aboriginal Heritage Features**

The wording of this objective is identical to the objective in Part 2. For context, intent and implementation guidance see section [3.2.6](#).

#### **3.3.7 Objectives for Historical Culturally modified Trees**

The wording of this objective is identical to the objective for Historical Culturally modified Trees in Part 2. For context, intent and implementation guidance see section [3.2.7](#)

#### **3.3.8 Objectives for Aboriginal Tree Use**

The wording of this objective is identical to the objective for Aboriginal Tree Use in Part 2. For context, intent and implementation guidance see section [3.2.8](#).

#### **3.3.9 Objective for retention of western yew**

The wording of this objective is identical to the objective in Part 2. For context, intent and

implementation guidance see section [3.2.9](#).

### **3.3.10 Objectives for Important Fisheries Watersheds**

The wording of this objective is identical to the objective in Part 2. For context, intent and implementation guidance see section [3.2.10](#).

### **3.3.11 Objectives for High Value Fish Habitat**

#### **Context:**

The definition of high value fish habitat and the various features included in it are critical to the application of this section. Subsection (4) identifies specific rivers which require a reserve, from the natural boundary, to be maintained.

#### **Intent:**

The intent of this objective is to maintain and/or accelerate the natural ecological progression towards late seral structure of forests adjacent to high value fish habitat and to protect hydroriparian ecosystems which contain high value fish habitat. Riparian forests adjacent to high value fish habitat are reserved sufficiently to protect functions and habitat values considering risks to those reserves from agents such as windthrow. Where such forests were damaged or removed in past disturbances, recruitment or creation of functional riparian forest is required to the extent practicable by subsection (5). Flexibility is provided by allowing the width of the riparian forest reserves to be adjusted on a site-specific basis and over a development area using the no net loss principle for retention of the reserve zones.

#### **Implementation Guidance:**

Determining the location of high value fish habitats will require development area and stand level assessments to identify the elements listed in the definition.

There are two levels of flexibility provided in the objective in the management of the reserve zones for high value fish habitats.

1. The width of the reserve zone can be varied by up to 0.5 tree lengths along any given length of high value fish habitat within a development area provided that the total area of reserve is equal to the area that would be provided by a set width of 1.5 tree lengths of reserve zone. This concept of no net loss allows adjustment for site specific variance of the reserve zone but is limited to a minimum width of 1.0 tree length.
2. To utilize a reserve zone less than 1.0 tree length in width at any given point in the riparian reserve requires an assessment to be completed as per subsection (3). The intent is that extra rigour is required to reduce the reserve zone to less than 1.0 tree length for a portion of the stream. The requirement of no net loss is maintained for utilization of this increased flexibility.

For subsection (5), the recruitment of functional riparian forest may involve reserving younger forest from harvesting or actively applying silvicultural treatments in an effort to speed the recruitment of desired riparian forest attributes (i.e. restoration).

Subsection (4) provides a set reserve width with limited variance allowances for the lower portion of the Klinaklini River and its tributaries and for the lower portion of Viner Creek. Maps attached as schedules to the order and the associated data specify the extent of these specific reserves.

### **3.3.12 Objectives for aquatic habitat that is not High Value Fish Habitat**

#### **Context:**

This objective provides two options for preparation of results and strategies in an FSP. Option one is to prepare results or strategies that are consistent with subsections 1, 2 and 3 and option two is to prepare results and strategies consistent with the provisions for the management of riparian management areas in accordance with the *Forest and Range Practices Act* and the regulations made thereunder, including Part 4, Division 3 of the Forest Planning and Practices Regulation, as of December 31, 2014, for S1 to S3 streams and for lakes, and marsh and fen wetlands greater than 0.25 hectares.

#### **Intent:**

The intent of this objective is to maintain the natural ecological function of aquatic habitat that is not high value fish habitat. The focus is to sustain hydrological processes and ecological structure and function in these ecosystems. Where the forests adjacent to the aquatic habitat that is not high value fish habitat were damaged or removed in past disturbances, recruitment or creation of functional riparian forest is required to the extent practicable by subsection (7). Flexibility is provided by allowing the width of the riparian forest management zone to be adjusted on a site-specific basis and by allowing Licensees to manage in accordance with the *Forest and Range Practices Act* and regulations subject to the conditions listed in subsection (6).

### **3.3.13 Objectives for Forested Swamps**

The objective for forested swamps is the same between the two parts of the order. For context, intent and implementation guidance on forested swamps see section [3.2.13](#).

### **3.3.14 Objectives for Upland Stream areas**

This objective is limited in application to only those watersheds in Schedule E but the wording is essentially the same as the objective in Part 2. For context, intent and implementation guidance see section [3.2.14](#). For SCC purposes, any references in Part 2 section 3.2.14 to Type 1 or Type 2 Aquatic Habitat should be considered High Value Fish Habitat or Fish Habitat that is not High Value, respectively.

### **3.3.15 Objectives for Active Fluvial Units**

#### **Context:**

These units are sensitive to harvesting, as the riparian vegetation, especially large trees, are important for limiting erosion, stabilizing banks and reducing sedimentation rates. If

functional riparian forest is removed, significant channel widening and loss of channel complexity and associated habitat can occur.

**Intent:**

The intent of this objective is to maintain the integrity and natural ecological function of active fluvial units. The objective directs Licensees to retain at least 90% of the forest located on active fluvial units. In most cases there are provisions for road access or to address a safety concern subject to an assessment.

**Implementation Guidance:**

Active fluvial units, particularly alluvial streams often overlap with other aquatic habitat features (for example: active fluvial units and high value fish habitat). In such cases, the feature with the greatest requirements for protection should prevail, and in doing so could satisfy requirements for both.

Because alluvial streams within active fluvial units are often associated with high value fish habitat, alluvial stream reaches that are fish bearing should be assumed to be high value fish habitat unless an assessment by a qualified professional has confirmed otherwise.

In many cases it may be necessary to maintain the entire active fluvial unit as well as a reserve that will function to adequately protect it from destabilization. Alluvial fans (as an active fluvial unit) have specific requirements under FRPA to prevent destabilization.

Useful references on active fluvial units include:

**Defining Active Fluvial Units:**

<http://www.coastforestconservationinitiative.com/EBM/documents/DefiningActiveFluvialUnits-April2006.pdf>

**Forest Management on Fans - Hydrogeomorphic Hazards and General Prescriptions:**

<http://www.for.gov.bc.ca/hfd/pubs/Docs/Lmh/Lmh57.pdf>

**3.3.16 Objective for Red and Blue Listed Plant Communities**

The wording of this objective is identical to the objective in Part 2. See section [3.2.16](#) for context, intent and implementation guidance.

**3.3.17 Objectives for stand retention**

This objective is identical to the objective in Part 2 for stand retention. See section [3.2.17](#) for context, intent and implementation guidance.

**3.3.18 Objectives for grizzly bear habitat**

**Context:**

Grizzly Bears are a focal species for both parts of the GBR Order which outlines protection for critical Grizzly bear habitat Class 1.

### **Intent:**

Grizzly bears are a highly important regional species in the GBR. To support the long term viability of this species, the SCC part of the Order spatially identifies class 1 grizzly bear habitat (class 1). The objective requires that critical habitat be maintained as functional habitat.

Flexibility is provided to allow for harvesting or alteration of critical grizzly bear habitat, if a qualified professional confirms that the proposed disturbance will not cause a material adverse impact to the suitability by maintaining or enhancing the conditions and structures necessary to ensure the area remains suitable for use by grizzly bears.

### **Implementation Guidance:**

Where possible, maintain connectivity at the landscape scale between habitats. This allows for bears to move between the Class 1 polygons by providing security and thermal cover. Connectivity can be achieved through forested hydro-riparian corridors and other forest areas that have been reserved for other values (e.g., ecosystem representation, habitat for other focal species).

Current mapping and associated data files for critical grizzly habitat in the South part of the Order are available on the following websites:

Map:

[https://www.for.gov.bc.ca/tasb/SLRP/lrmp/nanaimo/CLUDI/GBR/Schedules/GBR\\_2016/GBRSchD\\_GB\\_20160104.pdf](https://www.for.gov.bc.ca/tasb/SLRP/lrmp/nanaimo/CLUDI/GBR/Schedules/GBR_2016/GBRSchD_GB_20160104.pdf)

Spatial data files are posted on this website:

<https://www.for.gov.bc.ca/tasb/SLRP/plan17.html>

### **3.3.19 Objectives for Grizzly and Black Bear Dens**

This section is identical to the section in Part 2 of the order. With the exception that subsection 3(e) in the South part has the additional allowance for alteration during the winter hibernation season if the den is unoccupied. *“3(e) the alteration or removal does not occur during the winter hibernation season if the den is occupied.”* For context, intent and implementation guidance see section [3.2.19](#).

## 4.0 References

### Active Fluvial Units References

**Defining Active Fluvial Units:**

[http://www.coastforestconservationinitiative.com/\\_EBM/documents/DefiningActiveFluvialUnits-April2006.pdf](http://www.coastforestconservationinitiative.com/_EBM/documents/DefiningActiveFluvialUnits-April2006.pdf)

**Forest Management on Fans - Hydrogeomorphic Hazards and General Prescriptions:**

<http://www.for.gov.bc.ca/hfd/pubs/Docs/Lmh/Lmh57.pdf>

### Riparian References

**Coast Information Team (CIT) Hydroriparian Planning Guide** (January 2004):

<https://www.for.gov.bc.ca/tasb/slrp/citbc/c-hpg-final-30Mar04.pdf>

**Wetlands of British Columbia** by MacKenzie and Moran (2004)

<http://www.for.gov.bc.ca/hfd/pubs/Docs/Lmh/Lmh52.htm>

### First Nations Resources References

**Where our women used to get the food: Cumulative effects and loss of ethnobotanical knowledge and practice; case study from coastal British Columbia.** Nancy J. Turner and Katherine L. Turner: <http://www.nrcresearchpress.com/doi/abs/10.1139/B07-020>

**Traditional Marine Resource Use Marine Transportation Technical-** Report for the Trans Mountain Pipeline Ulc Trans Mountain Expansion Project December 2013

<https://www2.viu.ca/csr/publicinterest/MarineInvertebrates.asp>

### Western Yew References

<http://metchosinmarine.ca/metchosin/trees/pacificyew/pacificyew.htm>

**The Tree Book, Learning to Recognize Trees of B. C:**

<http://www.for.gov.bc.ca/hfd/library/documents/treebook/index.htm>

### Grizzly and Black Bears References

Bear den site selection and considerations for forest management in the interior of British Columbia. Dexter P. Hodder, John Prince, Roy V. Rea. November 2005

<http://aleza.unbc.ca/wp-content/documents/technicalreports/ALRF-Seed-Grant-Report-Hodder.pdf>

EBM Working Group Focal Species Project Part 3: Knowledge Base For Focal Species and Their Habitats in Coastal BC:

[https://www.for.gov.bc.ca/tasb/slrp/lrmp/nanaimo/cencoast/ebmwg\\_docs/ei02c\\_report\\_3.pdf](https://www.for.gov.bc.ca/tasb/slrp/lrmp/nanaimo/cencoast/ebmwg_docs/ei02c_report_3.pdf)

**Longevity and Reuse of Black Bear Dens in Managed Forests of Coastal British Columbia.** Helen Davis, Anthony N. Hamilton et al July 2011, The Journal of Wildlife Management

[http://www.artemiswildlife.com/pubs/Davis%20et%20al%20\(2011\)%20B%20bear%20den%20reuse.pdf](http://www.artemiswildlife.com/pubs/Davis%20et%20al%20(2011)%20B%20bear%20den%20reuse.pdf)