

**Background and Intent Document**

**for the**

**SOUTH CENTRAL COAST and  
CENTRAL and NORTH COAST  
Land Use Objectives Orders**

**April 18, 2008**

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# 1 About this Document

## 1.1 Introduction and Purpose

This Document provides background and intent for **South Central Coast (SCC)** and **Central and North Coast (CNC) Land Use Objectives Orders (the Orders)**. The *Central and North Coast Order* was established January 3, 2008 and the *South Central Coast Order* was established August 2, 2007. As outlined in the Preamble, the Orders provide an important tool for enabling the implementation of Ecosystem-Based Management (EBM) on the North and South Central Coast of BC. They establish 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 SCC and CNC legal objectives, and context for understanding and implementing the objectives. The overall goals are to facilitate a clear understanding of the Orders.

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 who will be responsible for developing, approving and implementing forest practices pursuant to the Orders.

Section 1 of this document describes the purpose and relationship to the Orders, and outlines the overarching legal and policy context in which the Orders exist. 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 Orders, a statement of intent is provided, followed by key definitions and implementation suggestions.

## 1.2 Background and Context for the Orders

### 1.2.1 First Nations Agreements

A number of signed agreements between the Province of British Columbia and First Nations provided management goals that helped to form the CNC and SCC legal land use objective Orders.

### 1.2.2 Key Background Documents and Reference Material

There are several documents that were developed during the completion phase (2001 to 2004) of the Central Coast Land and Resource Management Planning (CCLRMP) process that provided a foundation for the development of an EBM framework and EBM management direction for the Central Coast. A few key documents are briefly described below.

- **The North Coast Land Resource Management Plan: Final Recommendations (January 2005)**<sup>1</sup> outlines the consensus recommendations of the multi-stakeholder planning table, including recommendations for EBM thresholds and management targets.

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<sup>1</sup> The CCLRMP Consensus Recommendations Report can be found at:  
[http://ilmbwww.gov.bc.ca/lup/lrmp/coast/ncoast/docs/NCLRMP\\_Final\\_Recommendations\\_feb\\_2\\_2005.pdf](http://ilmbwww.gov.bc.ca/lup/lrmp/coast/ncoast/docs/NCLRMP_Final_Recommendations_feb_2_2005.pdf)

- **The Coast Information Team (CIT) Ecosystem-Based Management Planning Team Handbook (March 2004)**<sup>2</sup> 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)**<sup>3</sup> provides the rationale and scientific background to the EBM Handbook.
- **The CIT Hydroriparian Planning Guide (January 2004)**<sup>4</sup> 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.
- **CIT Peer Review Documents** provide peer reviews of all of the above CIT documents<sup>5</sup>

## **1.3 Legislative Context for the SCC and CNC Orders**

### **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*, 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 *Land Use Objectives Regulation* or another enactment. In addition, the land use objectives must provide for an appropriate balance of social, economic and environmental benefits.

Accordingly, one of the steps undertaken in the decision process to establish the SCC and CNC Orders 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 duplicative of legal direction provided elsewhere. The final legal objectives established in the SCC and CNC Orders should therefore be considered complementary and supplemental to legal direction provided by other enactments, unless otherwise specified.

More specific discussion of the relationship between the SCC and CNC Orders and key related enactments is provided in the following sections.

### **1.3.2 Relationship to the Forest and Range Practices Act**

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 SCC and CNC Orders) or grandfathered under S. 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*.

<sup>2</sup> The CIT EBM Handbook can be found at: <http://www.citbc.org/c-ebm-hdbk-fin-22mar04.pdf>

<sup>3</sup> The CIT Scientific Basis of EBM can be found at: <http://www.citbc.org/c-ebm-scibas-fin-04May04.pdf>

<sup>4</sup> The CIT Hydroriparian Planning Guide can be found at: <http://www.citbc.org/c-hpg-final-30Mar04.pdf>

<sup>5</sup> CIT Peer Review documents can be found at: <http://www.citbc.org/abopeer-comm.html>

Forest licensees are required to identify strategies and/or desired results in a Forest Stewardship Plan that will be consistent with all of the objectives that are in effect for any given area.

In the event of an inconsistency between any of the above types of objectives, section 149(2) of FRPA provides that land use objectives established under the *Land Act* prevail over objectives prescribed under section 149(1) of FRPA. In the case of the SCC and CNC Orders only one conflict has been noted. The Orders note in section 1(2):

In accordance with section 5 of the *Land Use Objective Regulation* (B.C. Reg. 357/2005), the objective made in section 10 of the *Forest Planning and Practices Regulation* (B.C. Reg. 14/2004) under the *Forest and Range Practices Act* is disclosed as being in conflict with this Order, for the landscape units shown on the map attached as Schedule 1.

Section 10 of the FPPR establishes objectives for cultural heritage resources that are of continuing importance to First Nations, and that are not regulated under the *Heritage Conservation Act*. The SCC and CNC Orders also provide objectives for cultural heritage resources that are not regulated under the *Heritage Conservation Act* in greater detail specific to the South Central Coast and Central and North Coast areas and First Nations. Because a conflict has been specified between these two sets of objectives, objectives 3 to 7 in the Orders are deemed to supersede or replace those identified in section 10 of the FPPR.

To date, no other conflicts have been specified within the SCC or CNC Orders. Licensees must prepare results and strategies that are consistent with the SCC and CNC objectives and with FRPA objectives.

### **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 otherwise 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 South Central Coast and Central and North Coast Land Use Objectives Orders include 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 SCC and CNC Orders as of August 2, 2007 and January 3, 2008, respectively, when the Orders came into effect.

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

The BC *Heritage Conservation Act* 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 that 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 SCC and CNC Orders provides direction for the management of First Nations heritage features and resources that is intended to supplement direction provided by the *Heritage Conservation Act*. The SCC and CNC Orders include management directions that are locally specific to First Nations values in the SCC and CNC areas, and include a requirement to manage for heritage resources dated after 1846.

## **1.4 Future Amendments to the SCC and CNC Orders and Background and Intent Document**

The preamble to the SCC and CNC Orders 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"*.

Section 18(5) further outlines that the Orders may be amended to implement adaptive management objectives, including ecosystem based management objectives.

Recommendations for such future amendments to the SCC and CNC Orders and/or the update of this Background and Intent Document may result from work that is ongoing within the Land and Resource Forums, the EBM Working Group, and Detailed Strategic Planning processes to further define detailed direction for the implementation of EBM.

The EBM Working Group is developing recommendations for an adaptive management framework that includes: a system for monitoring and evaluating ecological integrity and human well-being; an independent research, inventory and data management system, and; a decision-support/analysis system. Once this framework is completed and approved by the Land and Resource Forums, it may provide further information for the adaptive management requirements noted in the SCC and CNC Orders.

Further support for the management of First Nations values at a territorial level is under development through Detailed Strategic Planning processes. When complete, these plans may provide more detailed and locally specific direction for the management of traditional heritage features, traditional forest resources, culturally modified trees, monumental cedar and other values of interest to each Nation.

## 2 General Terms and Concepts

This portion of the Background and Intent document provides interpretation for terms and concepts that are used throughout, or in numerous sections of the Orders.

### 2.1 Information sharing or consultation

Recent court decisions have clarified consultation of 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 the Ministry of Forests and Range FRPA Bulletin #1<sup>6</sup>. The bulletin provides legal references as well as suggested steps and/or approaches for information sharing.

Throughout the SCC and CNC Orders several objectives include a component for information sharing or consultation with First Nations<sup>7</sup>. The intent of these provisions is to identify specific subject areas where a higher standard of information sharing or consultation is required. The reference to both terms - information sharing or consultation - reflects the requirement for licensees to engage in information sharing and for government agencies (e.g. BC Timber Sales) to engage in consultation with First Nations.

It is incumbent upon licensees to ensure they have made all reasonable efforts to share relevant information with First Nations regarding activities affecting the specified subject areas. This may include, for example, developing and implementing strategies to undertake and share information related to watershed assessments or reconnaissance inventories of monumental cedar. Or it may involve sharing detailed information that describes how operational plans have been modified to avoid impacts to values and resources identified in the objectives such as traditional heritage features or culturally modified trees.

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<sup>6</sup> (Implementation Bulletin number 1 is found at:  
[http://www.for.gov.bc.ca/hth/timten/FRPA\\_implementation/Bulletins/FRPA%20Admin%20No%201%20FN%20info%20sharing%20June%2009%202005.pdf](http://www.for.gov.bc.ca/hth/timten/FRPA_implementation/Bulletins/FRPA%20Admin%20No%201%20FN%20info%20sharing%20June%2009%202005.pdf)

<sup>7</sup> Note the definition for "information sharing or consultation" differs between the two orders and should be referenced specifically for the area covered by each Order.

# 3 South Central Coast and Central and North Coast Land Use Objectives – Intent and Implementation Guidance

## 3.2 First Nations Values (Part 2)

### 3. Objectives for First Nations' traditional forest resources

**Objective 3 in the SCC Order:**

- (1) Maintain traditional forest resources in a manner that supports First Nations' food, social and ceremonial use of the forest.

**Objective 3 in the CNC Order:**

- (1) Maintain traditional forest resources in a manner that supports First Nations' food, social, treaty and ceremonial use of the forest.

**Definitions:**

*From the SCC Order – “**traditional forest resources**” means monumental cedar and other wild plant foods, botanical medicines and forest resources that are utilized by a First Nation for food, social or ceremonial purposes, and includes wildlife.*

*From the CNC Order – “**traditional forest resources**” means monumental cedar and other wild plant foods, botanical medicines and forest resources that are utilized by a First Nation for food, social, treaty or ceremonial purposes, and includes wildlife.*

**Intent:**

**The intent of this objective is to provide for the maintenance of traditional forest resources thus allowing for continued use by First Nations.**

**The objective directs Licensees to seek information from applicable First Nations and from other sources regarding identification of traditional forest resources, and to develop and implement management practices that maintain those resources for food, social and ceremonial use.**

**Implementation Guidance:**

***This section provides strategies and suggestions for implementation of the land use objectives. The manner in which the objectives are met is incumbent on the Licensee. Strategies may evolve/adapt over time but the focus remains on a results-based system.***

- Approaches for achieving the intent of this objective could include the following:
  - A meeting between Forest Licensees and applicable First Nations to discuss approaches for the sharing of information relating to traditional forest resources. It is recognized however that some resources may be considered by First Nations to be

too sensitive to permit sharing of specific information. Therefore working with the First Nation 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 key.

- In the event applicable First Nations do not provide information on traditional forest resources, undertaking other research to identify potential traditional forest resources.
  - Development of traditional forest resource inventories, by reconnaissance or detailed survey as appropriate, within proposed road layouts and cutblocks.
  - Communication and information sharing between licensees and First Nations regarding site plans for harvesting and road building, and associated strategies and development and implementation of management practices to maintain traditional forest resources.
- While monumental cedar is part of the definition of traditional forest resources, it has unique qualities and management issues. For more detail regarding monumental cedar management see section 6.

#### **4. Objectives for First Nations' traditional heritage features**

**Objective 4 in the SCC Order:**

- (1) Protect traditional heritage features, other than culturally modified trees, and include a management zone of sufficient size to protect the integrity of the traditional heritage feature.
- (2) Despite subsection (1), a traditional heritage feature, other than a culturally modified tree, may be altered or removed after information-sharing or consultation with the applicable First Nation determines whether:
  - (a) the alteration or removal will cause a material adverse impact to the traditional heritage feature that is of continuing importance to the First Nation;
  - (b) the alteration or removal is required for road access, other infrastructure, or to address a safety concern; and
  - (c) there is any practicable alternative to the alteration or removal

**Objective 4 in the CNC Order:**

- (1) Protect traditional heritage features, other than culturally modified trees, and include a management zone of sufficient size to protect the integrity of the traditional heritage feature.
- (2) Despite subsection (1), a traditional heritage feature, other than a culturally modified tree, may be altered or removed after information-sharing or consultation with the applicable First Nation determines that:
  - (a) the traditional heritage feature is not of continuing importance to the First Nation; or
  - (b) the alteration or removal is required for road access, other infrastructure, or to address a safety concern.
  - (c) Where information-sharing or consultation under subsection (2) with the applicable First Nation identifies a material adverse impact to a traditional heritage feature that is of continuing importance to the applicable First Nation and there is no practicable alternative, identify specific measures to address or seek to accommodate the material adverse impact.

**Definitions and Context:**

*From the Orders – “traditional heritage feature” means culturally modified trees and other archaeological and historical artifacts, sites and locations that are important to the cultural practices, knowledge and heritage of a First Nation but not including traditional forest resources.*

*Context: This objective provides a more detailed definition for traditional heritage features than the provisions of the Cultural Heritage Resources referred to in section 10 of the FPPR. The objective and the definition of traditional heritage feature does not replace the requirements of the Heritage Conservation Act, rather it extends beyond the scope of the Heritage Conservation Act to consider heritage features dated after 1846.*

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**Intent:**

**The intent of this objective is to provide for the protection of defined First Nation’s traditional heritage features that are of continuing importance to the First Nation within areas proposed for forest development activities. The objective directs Licensees to share information and work with First Nations to protect traditional heritage features.**

**Flexibility is provided by allowing alteration or removal of traditional heritage features in situations where the traditional heritage feature is not of continuing importance to the First Nation, or where removal or alteration is required for road access, other infrastructure or to address a safety concern, and there is no practicable alternative.**

**In all cases, information-sharing or consultation with First Nations must occur before alteration or removal of the traditional heritage feature, Licensees must document the measures or actions they took to mitigate or accommodate any material adverse impacts.**

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## Implementation Guidance:

***This section provides strategies and suggestions for implementation of the land use objectives. The manner in which the objectives are met is incumbent on the Licensee. Strategies may evolve/adapt over time but the focus remains on a results-based system.***

- Approaches for achieving the intent of this objective could include the following:
  - A meeting between Forest Licensees and applicable First Nations to discuss approaches for the sharing of information relating to traditional heritage features. It is recognized however that some features may be considered by First Nations to be too sensitive to permit sharing of specific information. Therefore working with the First Nation 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 key.
  - In the event applicable First Nations do not provide information on traditional heritage features, undertaking other research to identify potential traditional heritage features.
  - Development of traditional heritage feature inventories, by reconnaissance or detailed survey as appropriate, within areas of proposed road layouts and cutblocks.
  - The main approach for protecting traditional heritage features is through the establishment of reserves of sufficient design and size to protect the integrity of the feature. Therefore it is important to identify the features or feature-rich areas (where features are common and too sensitive to share specifics) early enough in the planning process to allow thoughtful planning.
- Where alteration or removal of a traditional heritage feature may be considered, information sharing or consultation with applicable First Nations is required, and must demonstrate whether:
  - (a) the alteration or removal will cause a material adverse impact to the traditional heritage feature that is of continuing importance to the First Nation;
  - (b) the alteration or removal is required for road access, other infrastructure, or to address a safety concern; and
  - (c) there is any practicable alternative to the alteration or removal;
  - (d) the efforts made to mitigate or accommodate any material adverse impacts to traditional heritage feature.
- The term 'practicable' is defined in FRPA general bulletin number 3<sup>8</sup>. 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' is intended to include First Nations interest in the traditional heritage feature, including its rarity or cultural importance and whether alteration or removal would cause 'material adverse impact'. 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.

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<sup>8</sup> Found at:

[http://www.for.gov.bc.ca/hth/timten/FRPA\\_implementation/Bulletins/FRPA%20No%203%20Defining%20practicable%20under%20FRPA%20June%209%202005.pdf](http://www.for.gov.bc.ca/hth/timten/FRPA_implementation/Bulletins/FRPA%20No%203%20Defining%20practicable%20under%20FRPA%20June%209%202005.pdf)

## 5. Objectives for culturally modified trees

### Objective 5 in the SCC Order:

- (1) Protect culturally modified trees and include a management zone of sufficient size to protect the integrity of the culturally modified tree.
- (2) Despite subsection (1), a culturally modified tree may be altered or harvested after information-sharing or consultation with the applicable First Nation, determines whether:
  - (a) alteration or harvesting will cause a material adverse impact to a culturally modified tree that is of continuing importance to the First Nation;
  - (b) alteration or harvesting is required for road access, other infrastructure, or to address a safety concern;
  - (c) protection of all of the culturally modified trees in the cutblock would make harvesting the cutblock economically unviable; and
  - (d) there is any practicable alternative to the alteration or harvesting.
- (3) Reserve culturally modified tree areas, at the landscape scale and stand level, where practicable, after information-sharing or consultation with the applicable First Nation.

### Objective 5 in the CNC Order:

- (1) In areas proposed for road construction and harvesting, identify and protect culturally modified trees and include a management zone of sufficient size to protect the integrity of the culturally modified tree.
- (2) Despite subsection (1), a culturally modified tree may be altered or harvested after information-sharing or consultation with the applicable First Nation determines that:
  - (a) the culturally modified tree is not of continuing importance to the First Nation; or
  - (b) alteration or harvesting is required for road access, other infrastructure, or to address a safety concern; or
  - (c) protection of the culturally modified trees in the cutblock would make harvesting the cutblock economically unviable.
- (3) Where information-sharing or consultation under subsection (2) with the applicable First Nation identifies a material adverse impact to a culturally modified tree that is of continuing importance to the applicable First Nation and there is no practicable alternative, identify specific measures to address or seek to accommodate the material adverse impact.
- (4) Reserve culturally modified tree areas, at the landscape and stand level, where practicable, after information-sharing or consultation with the applicable First Nation.

### Definitions and Context:

*From the Orders – “culturally modified tree” means a tree that has been modified by First Nations people as part of their cultural use of the tree;*

**Context:** *This definition of culturally modified trees includes both archaeological and historical culturally modified trees – i.e. culturally modified trees dated after 1846. The objective does not replace the requirements of the Heritage Conservation Act; however it extends beyond the scope of the Heritage Conservation Act to require consideration of culturally modified trees dated after 1846.*

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**Intent:**

**The intent of this objective is to provide for the identification and protection of culturally modified trees that are of continuing importance to First Nations. The objective directs Licensees to share information and work with First Nations to identify and protect culturally modified trees within areas proposed to be altered or harvested and to reserve culturally modified tree areas where practicable.**

**Flexibility is provided by allowing alteration or removal of culturally modified trees in situations where:**

- **The culturally modified tree is not of continuing importance to the applicable First Nation, or**
- **Where removal or alteration of the culturally modified tree is required for valid economic, access, infrastructure or safety purposes.**

**In all cases, information-sharing or consultation with First Nations must occur before alteration or removal of the culturally modified tree, Licensees must identify the measures or actions they took to mitigate or accommodate any material adverse impacts to a culturally modified tree.**

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**Implementation Guidance:**

***This section provides strategies and suggestions for implementation of the land use objectives. The manner in which the objectives are met is incumbent on the Licensee. Strategies may evolve/adapt over time but the focus remains on a results-based system.***

- 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 culturally modified trees.
  - Completion of culturally modified tree 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, and associated strategies to maintain culturally modified trees.
- Without added information sharing or consultation with the First Nation, the intent is to protect all culturally modified trees that are identified.
- First Nations may have culturally modified tree policy documents that should be considered if available. There may also be procedures in place between First Nations and licensees that are sufficient to meet this objective.
- In some cases reserving all culturally modified trees may not be practicable from a number of perspectives. Information sharing or consultation is required to find working solutions. Information sharing or consultation can help determine whether the culturally modified tree

is of continuing importance to the affected First Nations and whether alteration may have a material adverse impact on a culturally modified tree. The publication *The Significance and Management of Culturally Modified Trees* (1997)<sup>9</sup> provides an overview of culturally modified tree significance.

**Suggested questions to help determine continuing importance are as follows:**<sup>10</sup>

- Do the culturally modified trees have association with ongoing traditional harvesting in area? For instance, do culturally modified trees continue to be created during the harvest of bark for ceremonial equipment, or for traditional-style roofing for a nearby fish smokehouse?
- Does this particular site have cultural significance, or is it the cultural activities carried out at the site that are significant? Are alternate sites available that would offer the same values necessary to carry on the traditional activities, or is this the only remaining stand of suitable trees in the vicinity?
- Do the culturally modified trees have association with oral traditions about use of area? If ongoing harvesting has not been practiced for a time, are there stories about elder's or ancestor's use of the area? If so, then an argument for aboriginal rights may be weakened, but there is still a strong indication of cultural significance.
- Are the culturally modified trees considered evidence useful for treaty negotiation? If so, will conducting an AIA to locate, map, and possibly date the culturally modified trees be adequate to preserve evidence?
- Are the culturally modified trees useful for educational purposes? Are they currently being used for such purposes? Do schools visit the site to learn about indigenous forestry? Is the site within easy reach of the community, and are there other sites with equivalent culturally modified trees more easily available? In the case of canoe trees, have contemporary carvers expressed an interest in visiting the site to examine traditional methods?
- Do the culturally modified trees represent an economic potential for guided tours?
- Are there ecotourism operators in the community who currently use, or plan to use the site? Do the culturally modified trees have spiritual values, such as in situ testimony to ancestor's presence, or spiritual values attributed to canoe tree itself?
- Information sharing or consultation with the First Nations to identify areas of varying levels of culturally modified tree importance can help with the planning intensity and if desirable provide larger than block level reserves.
- For culturally modified trees created prior to 1846 an alteration permit is still required under the *Heritage Conservation Act* in addition to the information sharing and consultation directed by these Orders.
- The continuing importance of more recent culturally modified trees is a key consideration for management options and one that requires attention.

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<sup>9</sup> [http://www.tsa.gov.bc.ca/archaeology/docs/culturally\\_modified\\_trees\\_significance\\_management.pdf](http://www.tsa.gov.bc.ca/archaeology/docs/culturally_modified_trees_significance_management.pdf)

<sup>10</sup> From *The Significance and Management of Culturally Modified Trees Final Report Prepared for Vancouver Forest Region and culturally modified tree Standards Steering Committee* by Morley Eldridge, Millennia Research Ltd, January 13, 1997  
[http://www.tsa.gov.bc.ca/archaeology/docs/culturally\\_modified\\_trees\\_significance\\_management.pdf](http://www.tsa.gov.bc.ca/archaeology/docs/culturally_modified_trees_significance_management.pdf)

## 6. Objectives for monumental cedar

### Objective 6 in the SCC Order:

- (1) Maintain a sufficient volume and quality of monumental cedar to support the applicable First Nation's present and future cultural use of monumental cedar, following information-sharing or consultation with the applicable First Nation, and to the extent practicable.

### Objective 6 in the CNC Order:

- 1) Maintain a sufficient volume and quality of monumental cedar to support the applicable First Nation's present and future cultural use of monumental cedar, following information-sharing or consultation with the applicable First Nation, and to the extent practicable.
- (2) For the purposes of subsection (1) in areas where road construction and timber harvesting are proposed, identify and reserve monumental cedars where information sharing with the applicable First Nation has indicated the monumental cedar may be suitable for cultural use.
- (3) Despite subsection (1) and (2), a monumental cedar may be harvested, after information-sharing or consultation with the applicable First Nation determines that:
  - (a) the monumental cedar is not suitable or required for a cultural use; or
  - (b) the monumental cedar will be provided to the applicable First Nation; or
  - (c) harvesting the monumental cedar is required for road access, other infrastructure, or to address a safety concern; or
  - (d) reserving the monumental cedar in the cutblock would make harvesting the cutblock economically unviable; or
  - (e) a sufficient volume and quality of monumental cedar for the applicable First Nation, to support the First Nation's cultural use of monumental cedar, has been identified and reserved.
- (4) Where information-sharing or consultation under subsection (3) with the applicable First Nation identifies a material adverse impact to a monumental cedar that is identified as being suitable for cultural use by the applicable First Nation, and there is no practicable alternative, identify specific measures to address or seek to accommodate the material adverse impact.

### Definitions and Context:

*From the SCC Order – “monumental cedar” means western red cedar and yellow cedar that will meet First Nations cultural needs;*

*From the CNC Order – “monumental cedar” means monumental western red cedar and monumental yellow cedar that will meet First Nations cultural needs;*

*Context: Because of different cultural needs and the past and present availability of cedar, each First Nation will have different definitions for ‘monumental cedar’. In general terms monumental cedar are large old cedar trees with limited defects allowing for their use as totems, house logs, or canoes.*

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**Intent:**

The intent of this objective is to provide for the maintenance of monumental cedar for First Nations use. The South Central Coast objective directs Licensees to share information and collaborate with First Nations to maintain a sufficient volume of monumental cedar to support present and future cultural use.

The Central and North Coast objective directs Licensees to share information and work with First Nations to identify and protect monumental cedar within areas proposed to be altered or harvested and to reserve monumental cedar areas where practicable.

Flexibility is provided by allowing alteration or removal of monumental cedar in situations where:

- The culturally modified tree is not suitable for use by the applicable First Nation, or
- Where removal or alteration of the monumental cedar is required for valid economic, access, infrastructure or safety purposes.
- In all cases, information-sharing or consultation with First Nations must occur before alteration or removal of the monumental cedar. Licensees must identify the measures or actions they took to mitigate or accommodate any material adverse impacts to a culturally modified tree.

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**Implementation Guidance:**

*This section provides strategies and suggestions for implementation of the land use objectives. The manner in which the objectives are met is incumbent on the Licensee. Strategies may evolve/adapt over time but the focus remains on a results-based system.*

- Approaches for achieving the intent of this objective could include the following:
  - Dialogue between the Forest Licensees and First Nations on what constitutes a monumental cedar.
- Collaboration between First Nations and Licensees to develop and implement a Cedar Strategy for each territory could help with this objective. 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.
- The amount of monumental cedar required by First Nations will vary. There are examples of Cedar Strategies where uses and grade profiles required by First Nations have been completed<sup>11</sup>.

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<sup>11</sup> Coast Cedar Strategy Guidelines – see link below for a suggested approach.  
<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/Final%20Cedar%20Guidelines%20Final%20Dec%202004.doc>

- Where Cedar Strategies have identified specific locations that will provide sufficient amounts of monumental cedar over time, individual block assessments may not be required. However if monumental cedar were located during reconnaissance there is the ability for information sharing or consultation on their location and potential retention or use, depending upon agreement with the First Nation.

## 7. Objectives for stand level retention of Western red and Yellow Cedar

### Objective 7 in the SCC and CNC Orders:

- (1) Maintain a sufficient volume and quality of Western red cedar and Yellow cedar to support the applicable First Nation's cultural use of Western red cedar and Yellow cedar, to the extent practicable.
- (2) Within a cutblock where a partial cut silviculture system is used, design dispersed stand retention so that the first 15% of the total retained basal area maintains mature and old Western red cedar and Yellow cedar representative of the pre-harvest stand.

### Definitions:

*There are no definitions specified in the Orders for this objective.*

### Intent

**The intent of this objective is to ensure sufficient Western red and Yellow cedar is maintained to support First Nations present and future cultural and social uses. Objective 7 (1) relates to maintenance of cedar at all scales, while Objective 7 (2) is meant to ensure retention of cedar in mixed stands.**

### Implementation Guidance:

***This section provides strategies and suggestions for implementation of the land use objectives. The manner in which the objectives are met is incumbent on the Licensee. Strategies may evolve/adapt over time but the focus remains on a results-based system.***

- Where a dispersed pattern of retention is used, emphasize retention of mature and old red and yellow cedar suitable for traditional use.

### 3.3 Aquatic Habitats (Part 3)

#### General Description of Part 3:

The main focus of this section is to ensure adequate protection of hydroriparian ecosystems<sup>12</sup>, including high value fish habitat. These 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. These will be outlined in the following sections.

For each objective that follows, default approaches are provided, along with an option that allows more flexibility. The risk associated with the greater flexibility is balanced by a more detailed and rigorous planning requirement if the option is chosen<sup>13</sup>.

#### General Concepts and Context for Part 3:

##### Functional Riparian Forest Definitions and Context:

*From the Orders – “functional riparian forest” means forest that has reached hydrologically effective green-up and that also contains some large trees adjacent to streams to provide for large organic debris;*

*“hydrologically effective green-up” means the stage in the process of hydrologic recovery of a disturbed area at which a regenerating stand of trees has sufficient height, stocking density and canopy closure to prevent the hydrologic response of the disturbed area from causing material, adverse changes in hillslope hydrology, stream channel condition or stream flows.*

*Context: 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 large woody debris, maintaining coarse-filter biodiversity, maintaining rare ecosystems, serving as a corridor and maintaining characteristic ecosystem productivity. Specific key riparian structures and processes to consider that make a forest “functional” will vary by feature (for example: forested swamp, high value fish habitat, upland forest).*

*Where forest has been previously disturbed within riparian management zones prescribed under these Orders, the intent is that the oldest existing riparian ecosystems have the highest priority for retention. A previously-disturbed ecosystem can be used to meet retention targets within buffers when there is no other choice for recruitment, or where the ecosystem has substantially recovered both the hydrological and ecological riparian functions that are important for the feature.*

##### Riparian Reserve and Management Zones:

The various sections that follow base hydroriparian reserve recommendations on a default “management zone” (reserve zone for high value fish habitat)<sup>14</sup> of 1.5 tree lengths for each

<sup>12</sup> The CIT Hydroriparian Planning Guide (January 2004) <http://www.citbc.org/c-hpg-final-30Mar04.pdf> 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.

<sup>13</sup> CIT Peer Review documents can be found at: <http://www.citbc.org/abopeer-comm.html>

hydriparian feature. This measure is intended to protect the adjacent hydriparian feature, while protecting a portion of the terrestrial riparian habitat for biodiversity.

The use of a tree length is common in conservation science, allowing for some variation based on site conditions. The term "management zone" or "reserve zone" is not defined or applied in exactly the same manner as in FRPA, the FPPR, or the previous Forest Practices Code.

The amount of protective reserve required for each hydriparian 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. There is flexibility to vary the reserve or management zone on a feature by increasing or decreasing it somewhat to account for changing site and stand conditions.

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### **Guidance for Aquatic Habitats;**

***This section provides strategies and suggestions for implementation of the land use objectives. The manner in which the objectives are met is incumbent on the Licensee. Strategies may evolve/adapt over time but the focus remains on a results-based system.***

To facilitate consistency in application and monitoring for compliance, the follow suggestions are provided:

- Once the management zone is described and or mapped, the portion of the management zone that is intended to be reserved under the Orders is determined based on the requirements for the feature, site and stand characteristics and other considerations. The intent is for the function of the hydriparian feature to be protected first and foremost.
- Where the +/- 0.5 dominant tree length flexibility is used to design the management zone, the Orders intend the average zone width around the perimeter of the entire feature to be maintained at 1.5 tree lengths. This suggests that while there is flexibility to narrow the zone to 1.0 tree length in some portions of the perimeter, it is intended to be balanced by a similar expansion in other portions.
  - NOTE: Because the 0.5 dominant tree length flexibility is used as an upper as well as a lower limit, in situations where there is a large undisturbed forest on a portion of the perimeter, it is intended to be factored into the average width as only 2.0 dominant tree lengths.
- If flexibility in reserve design is used for the features described in this section, information sharing or consultation with First Nations, as interpreted in this document, will be required.
- Hydriparian features may extend well beyond the boundaries of a proposed cutblock. To optimize the protection of hydriparian functions, reserve and management zones should be ideally designed for the entire feature, as part of a broader watershed level plan or feature level design.

### **Overlap of Aquatic Habitat Features and Objectives:**

The range of hydriparian ecosystems and their relationship with one another should be carefully considered as follows:

- Occasionally several features will overlap on the same area (example: active fluvial unit and high value fish habitat). In such cases, the feature with the greatest requirements for protection should prevail, and in doing may satisfy the objectives and requirements for both.

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<sup>14</sup> The management zone becomes a reserve zone for high value fish habitat since the objective specifies 100% reservation of the management zone.

- Some features will grade into others (for example: estuaries into an active fluvial unit, estuaries into a marsh and a fen, a fen into a forested swamp). In these cases the protective requirements will need to be carefully considered to meet the requirements and intent for each feature and consider cumulative or downstream effects.
- Where small polygons of a riparian feature are found within a mosaic with similar small polygons of another feature (e.g., fen, active fluvial unit, forested swamp) and all of the polygons are less than 0.25 ha, the complex should be considered.

## 8. Objectives for important fisheries watersheds

### Objective 8 in the SCC and CNC Orders:

- (1) Maintain an equivalent clearcut area of less than 20% in important fisheries watersheds.
- (2) Despite subsection (1), an equivalent clearcut area of more than 20 % may be maintained after:
  - (a) information-sharing or consultation with the applicable First Nation;
  - (b) a coastal watershed assessment or similar assessment of watershed sensitivity to forest development disturbance is completed to relevant professional standards;
  - (c) maintaining an amount, type and distribution of forest cover that is sufficient to sustain natural hydrological and fluvial processes, based on the assessment in subsection (2)(b); and
  - (d) to the extent practicable, an adaptive management plan is developed and implemented to monitor environmental impacts during any primary forest activity.

### Definitions and Context:

*From the Orders – “important fisheries watersheds” means watershed areas identified on Schedule 2 for the SCC Order and Schedule 3 for the CNC Order, except watersheds composed of S5 and S6 streams flowing directly to the ocean.*

*“equivalent clearcut area” means an indicator that quantifies the equivalent percentage of the forested portion of a watershed where the hydrologic response resulting from alteration of the forest by harvesting, fires, insects and disease is equivalent to the hydrologic response of a clearcut.*

*“hydrologically effective green-up” means the stage in the process of hydrologic recovery of a disturbed area at which a regenerating stand of trees has sufficient height, stocking density and canopy closure to prevent the hydrologic response of the disturbed area from causing material, adverse changes in hillslope hydrology, stream channel condition or stream flows.*

*Equivalent Clearcut Area – as a limit on rate of cut should not be confused with equivalent clearcut area as it is used in a coastal watershed assessment procedure. Under this section of the Orders, if the default equivalent clearcut area requirement is used, it is in the context of a proportion of the forested portion of the watershed, not the watershed as a whole.*

*A default equivalent clearcut area target is offered as an alternative to the more detailed assessment and planning process. In this way, equivalent clearcut area is used as a precautionary limit on rate-of-cut to encourage a detailed watershed assessment once a certain level of harvest has been reached. The key focus for this section is to sustain natural hydrological and fluvial processes such that habitats and processes are not impaired.*

*Hydrologically Effective Green-up – is conceptually defined in the definitions of the Orders and referenced in terms of hydrological recovery. Hydrological recovery is further discussed using actual measures on page 32 of the 1999 Watershed Assessment Procedure Guidebook (<http://www.for.gov.bc.ca/tasb/legsregs/fpc/FPCGUIDE/wap/WAPGdbk-Web.pdf> ). Hydrologic recovery occurs proportionally as a stand develops toward hydrologically effective green-up. This proportional recovery is also explained in Table A2.2 of the 1999 Watershed Assessment Procedure Guidebook.*

*Relevant Professional Standards – refers to a person doing work with professional qualifications sufficient to do a coastal watershed assessment or similar assessment. These qualifications and resulting product(s) will be recognized by other similar professionals as being acceptable.*

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**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 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 to occur before watersheds assessment and more detailed planning and monitoring are required (i.e. <20% equivalent clearcut area). Further flexibility is provided by allowing more extensive harvesting to occur in accordance with the information derived from completed watershed assessments and information sharing with First Nations, and in conjunction with an adaptive management and monitoring plan to the extent practicable.**

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**Implementation Guidance:**

***This section provides strategies and suggestions for implementation of the land use objectives. The manner in which the objectives are met is incumbent on the Licensee. Strategies may evolve/adapt over time but the focus remains on a results-based system.***

- The coastal watershed assessment procedure is used here as a baseline for more detailed planning procedures. By allowing for equivalent procedures, the Orders allow for innovation and the natural evolution of such planning expertise and knowledge, while maintaining the focus on the intent of this objective.

## 9. Objectives for high value fish habitat

### Objective 9 in the SCC and CNC Orders:

- (1) Adjacent to high value fish habitat, maintain a reserve zone with a width, on average, of 1.5 times the height of the dominant trees, and do not alter or harvest the forest in the reserve zones unless there is no practicable alternative.
- (2) For the purposes of subsection (1), the width of the reserve zone in any one location may be increased or decreased by up 0.5 tree heights to address site specific values, including reserving critical habitat for species at risk.
- (3) Where some or all of the forest within the reserve zone required under subsection (1) has been previously altered or harvested, recruit functional riparian forest in that reserve zone, to the extent practicable.

### Definitions and Context:

*From the Orders – “high value fish habitat” means critical spawning and rearing areas for anadromous and nonanadromous fish including:*

- (a) *estuaries (including eel grass beds, and salmonid and eulachon rearing areas)*
- (b) *wet floodplains (including main channel salmonid and eulachon spawning habitats, and off-channel habitat used for rearing and spawning) and;*
- (c) *marine interface areas (including shallow intertidal areas, kelp beds, herring spawn areas, and other nearshore habitats used by marine invertebrates for reproduction and rearing);*

*Context: The definition of high value fish habitat and the various features included in it are critical to the application of this section.*

*A wet floodplain – is an alluvial stream reach and its active floodplain (the portion of the floodplain that floods frequently, typically within 5 years). Wet floodplains commonly exhibit wetland vegetation and include old, filled channels and low floodplain surfaces.*

*Functional riparian forest – as defined in the Orders for the purposes of subsection 9(3) is intended to go beyond hydrologically effective green-up, to include functional structure. For example, functional riparian forest for a stream would include conifers of a suitable size and root structure to provide bank stability as well as and large woody debris for in-stream structure. The nature of this forest will vary according to the nature of the hydroriparian feature*

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### 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 of functional riparian forest will be a priority, using the seral stands currently available.**

**Flexibility is provided by allowing the width of the riparian forest reserves to be adjusted on a site-specific basis.**

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**Implementation Guidance:**

***This section provides strategies and suggestions for implementation of the land use objectives. The manner in which the objectives are met is incumbent on the Licensee. Strategies may evolve/adapt over time but the focus remains on a results-based system.***

- A wet floodplain or only a portion thereof, may meet the requirements of high value fish habitat if it is determined by a qualified professional that fish and high value habitat are present. Conversely if such a professional determines that high value habitat is not present, the requirements under Objective 13 will apply. Alluvial stream reaches that have not had such an assessment by a qualified professional should be assumed to be high value fish habitat until the absence of high value fish habitat can be confirmed.
- Determining locations of high value fish habitat in stream systems will need watershed-level assessments to identify critical spawning and rearing habitat as per the Orders. At the site level, an assessment from a qualified professional can identify whether or not the stream habitat could be high value fish habitat. High value fish habitat is often associated with alluvial streams in active fluvial units. If neither watershed-level inventories nor site-level biological assessments have been done, as a default, fish-bearing alluvial reaches within active fluvial units should be considered to be high value fish habitat for site-level planning.
- Other hydroriparian ecosystems are high value fish habitat if they provide critical spawning and rearing areas.
- For subsection 9(3), the recruitment of functional riparian forest may involve simply 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).

## 10. Objectives for aquatic habitat that is not high value fish habitat

### Objective 10 in the SCC Order:

- (1) Adjacent to the following aquatic habitat: (a) S1 to S3 streams; (b) lakes greater than 0.25 hectares; and (c) marsh and fen wetlands greater than 0.25 hectares retain 90% of the functional riparian forest in a management zone with a width on average, of 1.5 times the height of the dominant trees.
- (2) The width of the management zone in subsection (1) may be increased or decreased by 0.5 tree heights, in any one location, to address site specific values, including reserving critical habitat for species at risk.
- (3) Despite subsection (1) and (2), a forest stewardship plan may comply 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 section 8 of the *Forest Planning and Practices Regulation*, for S1 to S3 streams and for lakes, and marsh and fen wetlands greater than 0.25 hectares.
- (4) Before altering or harvesting the forest described in subsection (3):
  - (a) ascertain and retain the amount of functional riparian forest sufficient to maintain stream bank stability and stream channel integrity;
  - (b) to the extent practicable, develop and implement an adaptive management plan and monitor environmental impacts during any primary forest activity; and
  - (c) engage in information-sharing or consultation with the applicable First Nation.
- (5) Where some or all of the forest required in subsection (1) or in subsection (3) has been previously altered or harvested, to the extent practicable, recruit functional riparian forest in that management zone or area.

### Objective 10 in the CNC Order:

- (1) Adjacent to the following aquatic habitat:
  - (a) S1 to S3 streams;
  - (b) lakes greater than 1.0 hectares; and
  - (c) marsh and fen wetlands greater than 1.0 hectares in size,retain 90% of the functional riparian forest in a management zone with a width on average, of 1.5 times the height of the dominant trees.
- (2) Adjacent to lakes and marsh and fen wetlands that are between 0.25 and 1.0 hectares in size, retain 90% of the functional riparian forest in management zones with a width, on average, of 1.0 times the height of the dominant trees.
- (3) The width of the management zone in subsection (1) and (2) may be increased or decreased by 0.5 tree heights, in any one location, to address site specific values, including reserving critical habitat for species at risk.
- (3) Despite subsection (1) and (2), the amount of functional riparian forest retained in the management zones for S1 and S3 streams, lakes and march and fen wetlands may be reduced to 70% after:

- (a) ascertaining and retaining the amount of functional riparian forest sufficient to maintain stream bank stability and stream channel integrity;
  - (b) to the extent practicable, developing and implementing an adaptive management plan and monitoring environmental impacts during any primary forest activity; and
  - (c) engaging in information-sharing or consultation with the applicable First Nation.
- (5) Where some or all of the forest required in subsections (1), (2) and (3) has been previously altered or harvested, to the extent practicable, recruit functional riparian forest in that management zone.

**Definitions and Context:**

*From the Orders – “functional riparian forest” means forest that has reached hydrologically effective green-up and that also contains some large trees adjacent to streams to provide for large organic debris.*

*Functional Riparian Forest – Where previously disturbed, functional riparian forest is intended to be forest that has substantially recovered both the hydrological and ecological riparian function(s) that are important for the feature(s).*

*Fen (should be interpreted as follows) – 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. For more detail on site characteristics and vegetation communities pertinent to coastal situations, refer to *Wetlands of British Columbia by MacKenzie and Moran (2004)*<sup>15</sup>.*

*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)*<sup>15</sup>.*

**Intent:**

**The intent of this objective is to maintain the natural ecological function of streams (Classes 1 –3), lakes and wetlands that are not considered high value fish habitat. The focus is to sustain hydrological processes and ecological structure and function in these ecosystems.**

**SCC**

**Flexibility is provided by allowing Licensees to vary the width of the management zone on a site specific basis or by allowing for management in accordance with the Forest and Range Practices Act and regulations subject to certain conditions. If the FRPA-based option is chosen, Licensees must undertake more detailed planning, collaborate with key agencies or groups to implement appropriate adaptive management and monitoring, and share operational planning information with First Nations.**

<sup>15</sup> MacKenzie, W.H. and J.R. Moran 2004. Wetlands of British Columbia: A guide to identification. BC Ministry of Forests, Forest Science Program. Land Management Handbook 52. <http://www.for.gov.bc.ca/hfd/pubs/Docs/Lmh/Lmh52.pdf>

## CNC

Flexibility is provided by allowing Licensees to reduce the total buffer to 70% of the 1.5 tree height maximum. If flexibility is pursued, Licensees must maintain stream bank stability and stream channel integrity; to the extent practicable, develop and implement an adaptive management plan and monitoring environmental impacts during any primary forest activity. They must also engage in information-sharing or consultation with the applicable First Nation.

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### Implementation Guidance:

***This section provides strategies and suggestions for implementation of the land use objectives. The manner in which the objectives are met is incumbent on the Licensee. Strategies may evolve/adapt over time but the focus remains on a results-based system.***

- For S1-S3 streams to fall under this section, they will not have characteristics that meet the definition of either high value fish habitat or an active fluvial unit (an active alluvial stream or active fan). The requirements for these other features are covered under Objectives 9 and 13 respectively.
- For subsection 10(5), the recruitment of functional riparian forest may involve simply 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).

## CNC

Flexibility is provided by allowing Licensees to reduce the total buffer to 70% of the 1.5 tree height maximum. If flexibility is pursued, Licensees must maintain stream bank stability and stream channel integrity; to the extent practicable, develop and implement an adaptive management plan and monitoring environmental impacts during any primary forest activity. They must also engage in information-sharing or consultation with the applicable First Nation.

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### Implementation Guidance:

*This section provides strategies and suggestions for implementation of the land use objectives. The manner in which the objectives are met is incumbent on the Licensee. Strategies may evolve/adapt over time but the focus remains on a results-based system.*

- For S1-S3 streams to fall under this section, they will not have characteristics that meet the definition of either high value fish habitat or an active fluvial unit (an active alluvial stream or active fan). The requirements for these other features are covered under Objectives 9 and 13 respectively.
- For subsection 10(5), the recruitment of functional riparian forest may involve simply 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).

## 11. Objectives for forested swamps

### Objective 11 in the SCC and CNC Orders:

- (1) Adjacent to forested swamps greater than 0.25 hectares, retain 70% of the functional riparian forest in a management zone with a width, on average, equal to 1.5 times the height of the dominant trees.
- (2) For the purposes of subsection (1), the width of the management zone in any one location may be increased or decreased by up 0.5 tree heights to address site specific values, including reserving critical habitat for species at risk.
- (3) Despite subsection (1), an additional 10% of the forest in the management zone adjacent to the forested swamp may be altered or harvested where:
  - (a) alteration or removal is required for road access, other infrastructure, or to address a safety concern; or
  - (b) where 70% retention would make harvesting the cutblocks economically unviable.
- (4) Before altering or harvesting the functional riparian forest pursuant to subsection (3):
  - (a) ascertain and retain the amount of functional riparian forest sufficient to maintain the integrity of the forested swamp;
  - (b) to the extent practicable, develop and implement an adaptive management plan and monitor environmental impacts during any primary forest activity; and
  - (c) engage in information-sharing or consultation with the applicable First Nation.
- (5) Where some or all of the forest within the management zone required in subsection (1) has been previously altered or harvested, to the extent practicable, recruit functional riparian forest in that management zone.

### Definitions and Context:

*From the Orders – “forested swamp” means a forested mineral wetland or a forested peatland with standing or gently flowing nutrient rich water in pools or channels and the water table is usually at or near the surface of the wetland or peatland. It does 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 or hydromorphic organic matter (organic material accumulated under saturated conditions) and wetland species hydrophytes occupy less than 50% of the site area;*

*Context: Forested swamps are important hydroriparian features with structures and functions that should be protected. 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 on landscapes where they are relatively rare, as in the drier CWHxm and CWHdm.*

*Forested swamps often represent a transition between upland forest and 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 are often 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, microtopography 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 that protect them from endemic winds.*

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**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.**

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**Implementation Guidance:**

***This section provides strategies and suggestions for implementation of the land use objectives. The manner in which the objectives are met is incumbent on the Licensee. Strategies may evolve/adapt over time but the focus remains on a results-based system.***

- To specifically identify ecosystems as forested swamps, they should first meet the criteria provided in the “definitions” of this document and then consider the following specific interpretations<sup>16</sup>:
  - 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.
  - As per the “definitions” in these Orders – *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)*

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<sup>16</sup> Based on a literature review by Lewis, T. 2007. Forested Swamps of central and north coast of British Columbia. Unpublished review for the Coast Conservation Initiative.

[http://www.coastforestconservationinitiative.com/ebm\\_new/documents/ForestedSwamps-Lewis2007.pdf](http://www.coastforestconservationinitiative.com/ebm_new/documents/ForestedSwamps-Lewis2007.pdf) and

MacKenzie, W.H. and J.R. Moran 2004. Wetlands of British Columbia: A guide to identification. BC Ministry of Forests, Forest Science Program. Land Management Handbook 52.

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

occupies 50% or more of the site. These folisolic growing substrates will appear as raised microsities that have freely draining organic materials, supporting "zonal vegetation" such as blueberries, salal, bunchberry, step moss and lanky moss.

- As per the "definitions" in these Orders – *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 needs 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.

## 12. Objectives for upland streams

### Objective 12 in the SCC Order:

- (1) **For the watersheds in Schedule 2**, maintain 70% or more of the forest, in the portion of the watershed occupied by upland streams, as functional riparian forest.
- (2) For the purposes of subsection (1), allocate retention to include upland stream reaches with unique microclimate or other rare ecological or geomorphological characteristics.
- (3) Despite subsection (1), less than 70 % of the forest in the portion of the watershed occupied by upland streams may be maintained as functional riparian forest after:
  - (a) information-sharing or consultation with the applicable First Nation;
  - (b) a coastal watershed assessment or similar assessment of watershed sensitivity to forest development disturbance is completed to relevant professional standards;
  - (c) maintaining an amount, type and distribution of forest cover that is sufficient to sustain natural hydrological and fluvial processes, based on the assessment in subsection (3)(b); and
  - (d) to the extent practicable, an adaptive management plan is developed and implemented to monitor environmental impacts during any primary forest activity.

### Objective 12 in the CNC Order:

- (1) Maintain 70% or more of the forest, in the portion of the watershed occupied by upland streams, as functional riparian forest.
- (2) For the purposes of subsection (1), allocate retention to include upland stream reaches with unique microclimate or other rare ecological or geomorphological characteristics.
- (3) Despite subsection (1), less than 70 % of the forest in the portion of the watershed occupied by upland streams may be maintained as functional riparian forest after:
  - (a) information-sharing or consultation with the applicable First Nation;
  - (b) a coastal watershed assessment or similar assessment of watershed sensitivity to forest development disturbance is completed to relevant professional standards;
  - (c) maintaining an amount, type and distribution of forest cover that is sufficient to sustain natural hydrological and fluvial processes, based on the assessment in subsection (3)(b); and
  - (d) to the extent practicable, an adaptive management plan is developed and implemented to monitor environmental impacts during any primary forest activity.

### Definitions and Context:

*From the Orders – “**upland streams**” means streams with a slope greater than 5% that are classified as S4 to S6 streams in section 47 of the Forest Planning and Practices Regulation.*

*Upland streams – are small, relatively steep and usually non-alluvial streams (includes S4, S5 and S6 streams as defined under FRPA)<sup>17</sup>. These streams are extremely numerous forming much of the landscape of the South Central coast, and are too small to identify at scales above the site level. For these reasons protection is approached using a proportion of cover in the watershed, much like equivalent clearcut area, rather than individual reserves along streams reaches.*

*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 hydriparian 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 specialised species (e.g. cascades through narrow channels).*

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<sup>17</sup> Note: alluvial reaches of S4 streams will often meet the definition of high value fish habitat.

*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.*

*Relevant professional standard – refers to a person doing work that has professional qualifications sufficient to do a coastal watershed assessment or similar assessment. These qualifications and the resulting product(s) will be recognized by other similar professionals as being acceptable.*

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**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 in the upland portion of the watershed subject to certain conditions.**

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**Implementation Guidance:**

***This section provides strategies and suggestions for implementation of the land use objectives. The manner in which the objectives are met is incumbent on the Licensee. Strategies may evolve/adapt over time but the focus remains on a results-based system.***

- Since it is really the “upland” slopes that are being managed rather than specific streams, the entire upland area to which these requirements will apply are 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 specific watersheds to which these requirements will apply are listed in Schedule 2 for the SCC Order. However, more specific direction and information regarding the exact boundary locations of these watersheds may be provided over time. (e.g., due to improved height-of-land data). The CNC Order is intended to refer to all watersheds within the Order’s boundaries.
- Contributing functional riparian forest – for the intent of this section, the contribution toward the 70% 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 under this section.
- 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 these Orders also contribute to the 70% upland forest requirement. Careful planning would consider leaving patches of retention that encompass portions of several streams:
- Watershed planning for upland streams should first consider key hydrologically sensitive areas for landscape-level reserves. These include areas with terrain stability concerns, and active fluvial units. Also, at this point key landscape level ecological sensitivities may be considered (e.g. landscape level connectivity): Once these key areas have been

accounted for at the landscape level, at the stand level the following priorities for reserves or retention may be considered<sup>18</sup>:

- (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<sup>19</sup>;
- (c) Seasonal/perennial semi-alluvial<sup>20</sup> 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.

### 13. Objectives for active fluvial units<sup>21</sup>

#### Objective 13 in the SCC Order:

- (1) Retain 90% of the functional riparian forest on active fluvial units.
- (2) Despite subsection (1), up to an additional 10% of the forest on an active fluvial unit may be altered or harvested in accordance with subsection (3).
- (3) Before altering or harvesting the functional riparian forest pursuant to subsection (2):
  - (a) ascertain and retain the amount of functional riparian forest sufficient to maintain bank stability and channel integrity on the active fluvial unit;
  - (b) to the extent practicable, develop and implement an adaptive management plan and monitor the environmental impacts during any primary forest activity; and
  - (c) engage in information-sharing or consultation with the applicable First Nation.

<sup>18</sup> Based on a June 2007 Watershed Assessment Procedure Presentation by Glynnis Horel.

<sup>19</sup> S4 streams may be found, but will not be common in upland areas as it is less likely to have fish streams over 5% slope. Steep small streams with unique microclimates are unique ecosystems that have been described in detail in Appendix 3 of the CFCI 2007 EBM Operational Guidance ([http://www.coastforestconservationinitiative.com/ebm\\_new/phpXplorer/homes/root/guideandtools/2007%20EBM%20Interim%20Op%20Guidance%202.0.pdf](http://www.coastforestconservationinitiative.com/ebm_new/phpXplorer/homes/root/guideandtools/2007%20EBM%20Interim%20Op%20Guidance%202.0.pdf)).

<sup>20</sup> A stream with a channel that is confining and stable. While the stream cannot move laterally beyond its active channel, it will have a riffle-pool morphology and may have narrow lateral bars.

<sup>21</sup> Useful references include:

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

[http://www.coastforestconservationinitiative.com/ebm\\_new/documents/ActiveFluvialUnitsfieldcardOctober2004-draft.pdf](http://www.coastforestconservationinitiative.com/ebm_new/documents/ActiveFluvialUnitsfieldcardOctober2004-draft.pdf)

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

### Objective 13 in the CNC Order:

- (1) Adjacent to active fluvial units, retain 90% of the functional riparian forest in a management zone with a width, on average, equal to 1.5 times the height of the dominant trees.
- (2) Despite subsection (1), the width of the management zone may be increased or decreased by 0.5 tree heights, in any one location, to address site specific values including reserving critical habitat for species at risk.
- (3) Despite subsection (1), up to an additional 10% of the forest in the management zone may be altered or harvested in accordance with subsection (4).
- (3) Before altering or harvesting the functional riparian forest pursuant to subsection (3):
  - (a) ascertain and retain the amount of functional riparian forest sufficient to maintain bank stability and channel integrity on the active fluvial unit;
  - (b) to the extent practicable, develop and implement an adaptive management plan and monitor the environmental impacts during any primary forest activity; and
  - (c) engage in information-sharing or consultation with the applicable First Nation.

### Definitions and Context:

*From the Orders – “active fluvial unit” means an active floodplain, where water flows over land in a normal flood event, and includes low and medium benches and the hydro-geomorphic zone of an active fan;*

*Active fluvial units – are dynamic of coastal ecosystems in terms of process and disturbance regimes, creating a diversity of structure and habitats – both aquatic and terrestrial. These units are sensitive to harvesting by definition, as the riparian vegetation, especially large trees, are important for limiting erosion, stabilizing banks, and reducing sedimentation rates—in essence, for maintaining stream morphology. If riparian forest is logged, 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 a 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 riparian forest can take many decades to recover. For similarly dynamic active alluvial fans (which are also active fluvial units) logging 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 hydri-riparian ecosystem. The intent of this Objective is to protect the form and function of the unit and not to destabilize them through development or management activities.*

*It should be noted that the Orders are intended to support and augment FRPA for the protection of active fluvial units. In this way it is intended that FRPA and associated FPPR requirements will still apply as a minimum.*

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**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.

Additional flexibility is provided by allowing Licensees to harvest additional volume from active fluvial units subject to certain conditions.

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**Implementation Guidance:**

*This section provides strategies and suggestions for implementation of the land use objectives. The manner in which the objectives are met is incumbent on the Licensee. Strategies may evolve/adapt over time but the focus remains on a results-based system.*

- 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.
- 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.

### **3.4 Biodiversity (Part 4)**

#### **General Context**

The intent of Part 4 is to represent the full range of habitats, structures and ecosystems across the landbase to conserve biological diversity. In ecosystems that occur infrequently, a precautionary amount of old growth habitat by ecosystem is to be maintained or recruited as a strategy for coarse filter biodiversity at the landscape scale. In the more common ecosystems (which cover about 97% of the landbase as defined in the Orders), a higher level of risk to biodiversity is accepted in order to maintain economic opportunities. Additionally, the intent is to prevent excessive mid-seral forest within landscape units for wildlife (e.g. grizzly bear) and biodiversity purposes.

The Orders provide direction to preserve habitats over a range of scales, as some species disperse widely while others are more scattered. As well, the intent is to maintain ecological processes that cover several scales (e.g., the hydrologic cycle). Also, structural variability is promoted to best address the full range of species. This helps spread risk and uncertainty across scales and it provide managers with flexibility to address a range of goals including timber.

#### **14. Objectives for landscape level biodiversity**

##### **Objective 14 in the SCC Order:**

- (1) For the landscape units in Schedule 1, retain an amount of old forest equal to or greater than that specified for each site series surrogate listed in Schedule 3, except where alteration or removal is required for road access, other infrastructure, or to address a safety concern.
- (2) Where there is less than the old forest in a landscape unit required in subsection (1), to the extent practicable, recruit forest to meet the representation requirements within 180 years.
- (3) Where the requirement of (2) applies harvesting of old forest is not permitted except where:
  - (a) alteration or removal is required for road access, other infrastructure, or to address a safety concern; or
  - (b) information sharing or consultation with First Nations determines there is no practicable alternative.
- (4) Maintain, in each landscape unit, less than 50% of each site series surrogate listed in Schedule 3 in mid-seral forest age classes, to the extent practicable.
- (5) Where there is more than 50% of any site series surrogate listed in Schedule 3 in mid-seral forest age classes in any landscape unit, then reduce the mid-seral forest age classes in that site series surrogate in that landscape unit to less than 50% within 80 years, to the extent practicable.
- (6) To the extent practicable, include within old forest retention areas, habitat elements important for species at risk, ungulate winter range, regionally important wildlife, including:
  - (a) mountain goats; (b) grizzly bears; (c) northern goshawks; (d) tailed frogs, and; (e) marbled murrelets.

#### **Objective 14 in the CNC Order:**

- (1) In the landscape units in Schedule 1, retain an amount of old forest equal to or greater than that specified for each site series surrogate listed in Schedule 4, except where alteration or removal is required for road access, other infrastructure, or to address a safety concern.
- (2) Where there is less than the old forest in a landscape unit required in subsection (1), to the extent practicable, recruit forest to meet the representation requirements within **250 years**.
- (3) Where subsection (2) applies, harvesting of old forest is not permitted except where:
  - (a) alteration or removal is required for road access, other infrastructure, or to address a safety concern; or
  - (b) information sharing or consultation with First Nations determines there is no practicable alternative.
- (4) Maintain, in each landscape unit, less than 50% of each site series surrogate listed in Schedule 4 in mid-seral forest age classes.
- (5) Where there is more than 50% of any site series surrogate listed in Schedule 4 in mid-seral forest age classes in any landscape unit, reduce the mid-seral forest age class in that site series surrogate in that landscape unit to less than 50% within 80 years, to the extent practicable.
- (6) To the extent practicable, include within old forest retention areas, stands of monumental cedar for future cultural use, habitat elements important for species at risk, ungulate winter range, and regionally important wildlife, including:
  - (a) mountain goats; (b) grizzly bears; (c) northern goshawks; (d) tailed frogs, and; (e) marbled murrelets.

#### **Definitions and Context:**

*From the SCC Order – “old forest” means a stand of trees 180 years or older;*

*From the CNC Order – “old forest” means a stand of trees 250 years or older;*

*Context: For the South Central Coast area, 180 years old and older is used to define old forest. For the Central and North Coast 250 years old and older is used to define old forest. At these ages stands begin to open up, creating gaps and developing large branches on the largest trees, and some mortality will occur increasing snag abundance and associated habitats. These forests, however, do not have the range of structural complexity of older stands, particularly in those parts of the coast where low rates of stand-replacing natural disturbance leads to forests that have been undisturbed beyond gap formation for millennia.*

*The landscape goal is to maintain a proportion of each site series or unique combinations 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. As site series level ecosystem mapping is not currently available for the entire plan area, the concept of site series surrogates (SSS) was developed as an alternative approach to defining ecological units for representation. SSS are defined by a combination of*

*attributes that can be found in the forest inventory - biogeoclimatic ecosystem variant and analysis units (a combination of leading species and site class).*

*The amount of old forest required by SSS is determined through an estimate of rarity by Landscape Unit. Site series surrogates are classed into five groupings (very rare, rare, modal, common, and very common). Depending on the ecosystem type, a minimum of 30% or 70% of the natural range of variability of old growth is required for retention within each Landscape Unit (LU). The minimum retention targets (at the landscape level) have been established for each class, based on rarity, as follows<sup>22</sup>:*

*70% of the natural occurrence of old seral for any site series surrogate that falls within the modal, uncommon or rare grouping; and*

*30% of the natural occurrence of old seral for any site series surrogate that falls within the common or very common grouping*

*Schedule 3 of the SCC Order and Schedule 4 of the CNC Order identifies a proportional area target for each SSS based on rarity class.*

*Note: Options for managing representation using Terrestrial & Predictive Ecosystem mapping, while more specific and more desirable, are presently limited by the need to have consistent mapping for an entire landscape unit, and the requirement for targets to be identified by LU and site series, which would necessitate a modification to the Orders.*

*From the Order - "mid-seral" means a stand of trees 40 years or older but less than:*

- (a) 80 years for the Coastal Western Hemlock biogeoclimatic zone;*
- (b) 100 years for the Interior Cedar – Hemlock biogeoclimatic zone;*
- (c) 120 years for the Engelmann Spruce-Subalpine Fir biogeoclimatic zone; and*
- (d) 120 years for the Mountain Hemlock biogeoclimatic zone.*

*Context: Mid-seral stands are separated out for management due to the relatively closed canopy that occurs during this developmental stage. The closed canopy restricts light and reduces understory plant diversity, providing less habitat and habitat diversity than in younger or older seral stands. The mid seral stage is shorter in the CWH zone due to more rapid growth resulting in stand differentiation sooner.*

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**Intent – subsections 1 - 3 and 6:**

**The overall intent of this objective is to provide for landscape level biodiversity. The Order identifies within each landscape unit, a proportion (30 or 70%) to maintain or recruit from the amount of old forest in each ecosystem type that would normally exist under conditions of natural disturbance. Where old forest is in deficit the intent is to provide for the recruitment of younger forests into older forest within a 180 year timeframe. Where possible, old forest retention areas should capture habitat areas. Stand level retention can contribute to old growth targets.**

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<sup>22</sup> For more information on the development of representation targets for the Central and North Coast, see the results of the Forrex expert workshop available at:  
[http://www.forrex.org/program/con\\_bio/forest\\_wrkshp.asp?AreaPkey=17](http://www.forrex.org/program/con_bio/forest_wrkshp.asp?AreaPkey=17)

