



Using Traditional Ecological Knowledge to Understand the Diversity and Abundance of Culturally Important Trees

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Supporting Information

Nanwakolas Operational Protocol for Large Cultural Cedar

The lands and resources of our territories have sustained our culture, way of life, spirituality, economy and society for countless generations. From child to Elder, a vital part of who we are as peoples is identified and lived on the land. This includes our forests and trees, which have always provided our peoples with bounty and well-being.

Maintaining the health of our forests and trees is a responsibility and trust that each generation of our peoples carries to those who came before, and those who will come after. Through our laws and protocols, we care for the land, and ensure it is able to maintain us for all time to come.

Today, as our ancestors have always done, we continue to apply our laws and protocols on the land. We do this guided by the principles of sustainability and balance that are integral to our cultures and teachings. We also do so as part of ensuring respect, recognition and implementation of our title and rights, and as part of upholding the standards of the *United Nations Declaration on the Rights of Indigenous Peoples*.

This LCC Protocol is one aspect of our approach to stewarding our essential resource of Large Cultural Cedar (or LCC) adopted under our laws and jurisdiction. Specifically, this LCC Protocol provides detailed operational guidance and standards to be followed when forestry activity may be planned or proceeding in areas

where there are LCC. Implementing this Protocol will help us achieve cultural, ecological, and economic benefits, including carbon values.

To be clear, adhering to this LCC Protocol does not mean that there is any consent by us to any forestry approvals, decisions, or activities in our territories. Decisions regarding consent are dealt with by other of our laws and protocols, as well as agreements and arrangements with the Crown and companies. No forestry activity in our territories should take place without first securing that consent and ensuring that our title and rights are fully respected. However, where forestry activity is proceeding, we expect all companies in our territories to adhere to this LCC Protocol.

Background

- 1. Importance of LCC's:** Cedar is a central and important cultural, social, spiritual, and economic resource to member First Nations of the Nanwakolas Council and has a prominent role across diverse aspects of traditional and contemporary life. Although western redcedar (*Thuja plicata*) and yellow cedar (*Xanthocyparis nootkatensis*, also known as cypress) is relatively abundant across certain ecosystems in these Nations' territories, large, high quality trees suitable, including for carving and building canoes, totem poles, and big houses, are rare.

2. **Scarcity:** Large Cultural Cedar is a scarce resource in managed forests because of the unique developmental pathways required to grow these trees and the long time periods (typically > 300 years) required for their development. LCC are also scarce because colonialism, unchecked resource extraction, infringements of our title and rights, and failure to seek or secure our consent, has depleted our forest resources, including LCC. Despite this, because these types of trees also provide the most profitable timber in coastal forests, they are an on-going target of the forestry sector.
3. **Strategy for an Intergenerational Supply of LCC's:** To ensure an intergenerational supply of LCC we are applying our laws and protocols through a contemporary LCC stewardship strategy. The following operational protocols are one component of this overall strategy.

LCC Surveys

4. **Requirement for LCC Surveys:** Large Cultural Cedar surveys are required:
 - a. When requested by one of our First Nations; or
 - b. Where high potential LCC (i.e. any redcedar or yellow cedar tree greater than 100cm diameter at breast height) are identified during operational planning, unless the First Nations consent that a LCC survey is not required.
5. **Conduct of LCC Surveys:** First Nation members that have completed the Nanwakolas LCC training course will conduct all LCC surveys. If the First Nation does not have one of these surveyors available to conduct an LCC survey,

the Nation(s) may consider using an alternate qualified individual. To promote logistical efficiencies, LCC surveys may overlap in timing with a preliminary field reconnaissance or an archaeological impact assessment, although conducting these two types of surveys concurrently is optional at the discretion of the First Nations.

6. **Defining and Identifying LCC's:** Criteria for identifying LCCs are stated in the Nanwakolas Council Large Cultural Cedar Identification Manual. Although this manual represents the primary method for identifying LCC, in some situations First Nations may choose to identify and retain smaller trees to support LCC recruitment. First Nation knowledge-keepers were interviewed to understand tree characteristics that make a LCC suitable for different traditional uses.
7. **Carrying Out of Surveys:** LCC Surveys will be carried out using survey methods consistent with the Archaeological and CMT Inventory Handbook developed by the BC Resource Inventory Standards Committee (RISC). This approach will involve systematic transects with 100% survey coverage of all stands containing potential LCC within development areas as well as in adjacent forests where LCC management may influence the design of cutblocks and roads. In practice, LCC surveys will need to occur in most old growth forests where redcedar or yellow cedar is present.

LCC Operational Management

8. **Development of Retention Requirements:** Stand level retention requirements for LCCs have

been developed, partly based on predictions of the abundance of different types of LCC trees (based on cultural use/purpose) across Nānwaḱolas First Nations territories relative to predicted First Nation needs for cultural logs over the next 300 years.

9. Definition of Retention: The word “retention” is used to describe both when LCC trees are retained during harvesting as well as when LCC trees are harvested for current cultural use by First Nation(s). There is inherent uncertainty in these numbers and many factors influence how these estimates relate to retention targets. The Nānwaḱolas Council is conducting ongoing

monitoring and research about LCC. The findings from this work will support potential refinements to the retention requirements in this LCC Protocol over time.

The minimum retention requirements are based on the standard that rarer types of LCC are associated with higher levels of protection.

10. Minimum Retention Requirements: There are three different minimum retention requirements for LCC (Table 1). Trees meeting the broader definition of LCC (see 6) are further refined into Type 1, Type 2, or Type 3 categories based on log diameter and length thresholds.

Table 1. Overview of the minimum retention targets for LCC. Rarer types of LCC are associated with higher levels of protection. Although carvers consider a broad range of tree characteristics when determining the suitability of a tree for a specific cultural use, these general Type 1, Type 2, and Type 3 categories are based only on log diameter and length thresholds within trees meeting the definition of LCC (see 6).

Type	Cultural Use	Status	Diameter	Length	Retention
Type 1	Community canoes, large totem poles, large big house logs	Very Rare	≥150 cm	12 m	100%
Type 2	Chief canoe, medium totem poles, medium big house	Rare	120-149 cm	7 m	50%
Type 3	Small totem poles, small big house logs	Moderately Rare	100-119 cm	5 m	25%

11. Calculating the Number of Trees to be Retained: In applying the minimum retention requirements in section 10, the following principles will be used to calculate the number of trees to retain:

a. The retention requirements represent the minimum percentage of LCCs that must be retained or provided to First Nation(s) for current cultural use within each discrete development area (i.e. individual cutblock or road right of way).

- b. If present in the development area, a minimum of one tree of each LCC type must be retained.
- c. LCC retention percentages should be rounded up to the next highest whole number. For example, if 5 Type 3 LCCs are present in a development area, then 2 of these trees would need to be retained.
- d. Similar to the accounting rules used for Wildlife Tree Retention Areas, LCCs contribute towards meeting

- the retention targets if they are either in the development area, along the development area boundary, or within one tree length of the boundary (see 15 for the landscape context for applying targets).
- e. To ensure that LCC retained within development areas are accessible and do not conflict with other stewardship objectives of First Nations, individual LCC trees only count when calculating the number of trees that can be harvested for commercial timber if they are not associated with the following areas or features:
 - i. Operationally inaccessible areas (based on professional and/or First Nation judgment in the field);
 - ii. Culturally Modified Trees;
 - iii. Bear dens; or
 - iv. Riparian management zones or riparian reserve zones (including buffers associated with High Value Fish Habitat and Non-High Value Fish Habitat in the Great Bear Rainforest Order).

For example, if 4 Type 2 LCCs are present in a development area, one of which is a culturally modified tree and another that is located in a riparian reserve zone, then only 1 LCC (50% of the 2 applicable LCCs) can be harvested for commercial timber. Note that LCCs may still be harvested in RMZs, but these trees are not accounted for when calculating the percentages of trees that can be harvested for commercial timber.

12. Landscape Context for Application Minimum Retention Requirements:

These minimum retention requirements apply to all development areas within the First Nations territories. Although the specific number of LCCs available for cultural use in a watershed will vary depending on the broader matrix of conservation areas vs. managed forest, the specific landscape context will not influence retention targets in development areas unless the following occurs:

- a. The applicable First Nation(s) agree to consider adjusting LCC targets based on the landscape context; and
- b. A complete LCC survey of the applicable watershed is carried out (the spatial extent of the applicable watershed area should be determined based on First Nation(s) guidance).

13. Stewardship and Recruitment of LCC's:

To ensure that LCC trees persist in stands over time, the following management strategies will be used to mitigate windthrow risk, recruit future LCC, and maintain the ecological conditions around the LCC:

- a. Buffer LCC with a minimum 1 tree length reserve zone and a ½ tree length management zone (based on the height of the LCC);
- b. Apply buffer from the polygon created by connecting trees when at least 3 LCCs or CMTs are within 30m or each other; and
- c. Retain previously identified LCC trees and retention areas (i.e. through sequential harvest rotations).

- 14. Making Retention Decisions:** This LCC Protocol allows for some harvesting of Type 2 and Type 3 LCC trees to address commercial timber objectives. Applying the retention targets thus creates choices around retaining versus harvesting specific trees. In general, many of these decisions can be made in the field based on operational logistics (e.g. safety, access, etc.) by forestry engineers and planners, but First Nation stewardship workers and their First Nation(s), via Information Sharing, may choose to prioritize specific LCCs for either long-term retention or current cultural use.
- 15. First Nation Access to LCC Logs:** This LCC Protocol is intended to support current and future First Nation tree use. Therefore, all, some, or none of the LCC associated with the retention targets may be allocated towards meeting current cultural needs of the First Nation(s). First Nations are currently developing cultural wood programs that will provide more details about the flow of LCC

to their communities and carvers. In the interim, forestry licensees and First Nation(s) will discuss access to LCC in development areas as part of the Information Sharing Protocol.
- 16. Monitoring:** To ensure that implementation of this LCC protocol is consistent with First Nations' objectives for LCC, a robust monitoring framework is being developed by Nanwakolas. This monitoring will assess both compliance and effectiveness of LCC management.
- 17. Review:** This LCC Protocol will be reviewed periodically, and changes to it may be made by the First Nations. In conducting reviews, the First Nations will consider information regarding the state of the forests in the territories, feedback from communities, members, and companies, as well as progress, challenges, and topics in the implementation of the Protocol. If the Protocol is changed, updated versions will be made public, including to all companies.