WOODLOT LICENCE PLAN #1

WOODLOT LICENCE # W1941

2014 to 2024

March 2, 2015



Ka:'yu: 'k't'h'/Che:k'tles7et'h' First Nations

Authorized Licensee Signature:

[Signature]

[Print Name]

Shere Thin

Therese Smith

March, 18,2015

[Date]

Disclaimer

Recognizing the special nature of management on a woodlot licence, this disclaimer forms part of the Woodlot Licence Plan (WLP) for Woodlot Licence Number W1941 and advises that:

- this disclaimer is signed on the explicit understanding and information provided by government that the use and achievement of a Default Performance Requirement meets the expectations of government with respect to the management of woodlot licences,
- the undersigned Registered Professional Forester certifies that this Woodlot Licence Plan and the supplemental information fulfills the standards expected of a member of the Association of British Columbia Forest Professionals and that I did personally supervise the work.

 Signed March 2, 2015

 Image: Signed March 2, 2015
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I. MANDATORY CONTENT FOR A WOODLOT LICENCE PLAN

PLAN AREA

This plan covers the entire 754 ha of Crown land and 63.7 ha of Schedule A lands included in Woodlot License W1941 ("the woodlot"). The Ka:'yu:'k't'h'/Che:k'tles7et'h' First Nations (KCFN) is located on the west coast of Vancouver Island near the village of Kyuquot. The Schedule B or Crown Lands are located on the eastern side of Union Island at the entrance to Kyuquot Sound. The Schedule A lands of Woodlot Licence W1941 include IR#1 (Village Island) located in the Mission Group, and IR #6 (Upsowis) located at the mouth of Malksope Inlet, directly to the north of the Bunsby Islands.

Woodlot Licence W1941 is located entirely within the traditional territory of the KCFN and no other First Nation traditional territories overlap the woodlot licence area, however the Maa-Nulth Nations have collective treaty rights to harvest fish, game and migratory birds.

The majority of the terrain in the woodlot is characterized by moderate to steep slopes, and features wet, slow growing, sites with relatively low site indices of 25 or less. Areas of sensitive, unstable terrain, with gradients >60% are shown on the map and will be further identified during harvest planning fieldwork.

MAP AND INFORMATION

Table 1: Map and Information Content	(See Appendix 1 for WLP Map)
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Information Item	Мар	Text	N/A
Forest cover	٧		
Topography; (unless exempted by DM)	٧		
Location of streams, wetlands and lakes as shown on forest cover maps, terrain	V		
resource inventory maps and fish and fish habitat inventory maps.	v		
Riparian classification of streams, wetlands and lakes if shown on maps	V		
Identification of fish streams	V		
Biogeoclimatic zones and subzones (unless exempted by DM)		V	
Public utilities (transmission lines, gas & oil pipelines, and railways)			٧
Existing roads	٧		
Special Situations that may not apply to the WL area		•	•
Resource Management Zones, Landscape Units or Sensitive Areas		V	
Wildlife Habitat Areas (unless exempted by DM)		V	٧
Scenic Areas	٧	V	
Ungulate Winter Ranges		V	V
Community Watersheds		V	V
Fisheries Sensitive Watersheds			V
Community and domestic water supply intakes that are licensed under the		V	V
Water Act and any related water supply infrastructures		v	v
Contiguous areas of sensitive soils	V	V	
Temporary or permanent barricades to restrict vehicle access		V	
Private property within or adjacent to the woodlot licence area			٧
Resource features other than wildlife habitat features and archaeological sites		,	
(unless the location of the resource feature is not to be disclosed)		٧	
W1941 – Union Island	1	1	<u>'</u> 1

All of the applicable information required to be addressed under section 8(1) of the Woodlot Licence Planning and Practices Regulation (WLPPR), and checked above, is discussed in the following text of this section and/or is identified on the WLP maps.

Biogeoclimatic Zones and Subzones

The woodlot licence area is entirely located within the Coastal Western Hemlock, Southern Very Wet Hyper maritime (CWH vh1) biogeoclimatic (BEC) subzone. This subzone is cool with very little snowfall, and temperatures moderated by its close proximity to the Pacific Ocean. Summers are cool, and winters are moist and mild. Fog, cloud, and drizzle are common throughout the year. The woodlot spans an elevation range from sea level to 340m.

Resource Management Zones, Landscape Units or Sensitive Areas

The Vancouver Island Land Use Plan (VILUP), in effect since December 1, 2000, is applicable as a higher-level plan. The area covered by the woodlot licence plan encompasses two Resource Management Zones, SMZ 5 and RMZ 14.

All Schedule A lands of the woodlot fall within the South Brooks-Bunsby Special Management Zone (SMZ 5), but as Treaty Settlement Lands (Former Reserve lands) they are excluded from the VILUP and associated objectives. The primary values within SMZ 5 are: coastal recreation values and opportunities, marine species populations, and habitat (sea otter, eagles) and archaeological values.

The Schedule B lands fall within the Kashutl General Management Zone (RMZ 14). This woodlot licence plan is consistent with the applicable government objectives specified for this General Management Zone for integrated resource management, which includes the integration of timber values with scenic values along the coast, as well as cultural values.

Kyuquot Sound is covered by the Kyuquot Sound Coastal Plan (MSRM, May 20, 2003) which addresses a range of uses and activities that occur in provincial Crown foreshore and near shore. The foreshores bordering the woodlot fall within two planning: unit 5 (Whitely Island - Cachalot Inlet) and unit 6 (Kyuquot Channel). Terrestrial woodlot activities are not expected to conflict with foreshore or near shore areas. The only interaction with these areas would be the barge landing and log handling storage area located on the north east foreshore of Union Island. These facilities occur within planning unit 5 where Log Handling, Storage and Infrastructure use are considered acceptable and appropriate.

Local input to the plan received during public review noted the 'return' of humpback whales to the Kyuquot Sound area, typically during the summer (from July to October/November). It was further noted that the humpback whales frequent Kyuquot Channel including the waters along the north east side of Union Island and suggested that the whale behavior in this area seems to be focused on feeding opportunities. The respondent proposed that any impact concerns be evaluated and monitored with respect to whale activity and that coastal log handling activities be restricted to the W1941 – Union Island

season when the whales (and recreational users) are not present. The timing of operations on the woodlot depend on a variety of factors including markets, weather, cut control contractor availability, log handling and storage permit requirements and licensee priorities. Timing with respect recreational and whale use of these foreshore areas may also be considered.

Scenic Areas

Visual quality objectives (VQO) have been established for the Campbell River Natural Resource District by a Government Actions Regulation Order dated December 14, 2005.

Visual Landscape Inventory (VLI) polygons #2091 and #301 fall within the Union Island woodlot parcel. Both have partial retention (PR) VQOs. The Upsowis parcel falls within VLI polygon #2173 which has a retention (R) VQO. No VQO exists for the Village Island parcel. Viewing from recreational traffic is limited to surrounding waterways. See: 'Areas Where Timber Harvesting Will be Modified' in this plan for strategies relating to visual quality management.

Recreation

A commercial recreation tenure (Crown Lands File# 1412894) is located adjacent to the woodlot along the foreshore of a small bay southwest of Unsworth Point on the east side of Union Island. This tenure has been associated in the past with a commercial sport fishing operation. Currently, the tenure is designated as a Section 17 Map Reserve for future opportunities and may be taken on by the Ka:'yu:'k't'h'/Che:k'tles7et'h' First Nations if the need arises. Future harvesting activities are not expected to conflict.

Two recreation sites (REC6505 – Kyuquot Bay and REC107035 – Union Island North) are also located on Union Island (but not adjacent to the Woodlot), and one site (REC160485 – Kyuquot Sound) is located to the northwest of the Upsowis parcel.

Recreational access to this area occurs through Kyuquot Channel from Fair Harbour. Kyuquot Sound, the Mission Group, Spring Island, and the Big Bunsby and Rugged Point Marine Provincial Parks are used for a variety of public and commercial recreational uses including boating, sport fishing, kayaking, guiding and camping.

Community Watersheds

No community watersheds are located within the Woodlot Licence area.

Licensed Water Supply Intakes and Infrastructures

There are no licensed water supply intakes or associated infrastructure within the Woodlot Licence area.

Contiguous Areas of Sensitive Soils

Contiguous areas of sensitive soils, defined as areas with greater than 60% slope or indicators of slope instability (small slides, sloughs etc) are present in the woodlot and will be identified and/or confirmed on the ground during harvest planning fieldwork. See 'Areas Where Timber Harvesting Will be Modified' in this plan for strategies W1941 – Union Island 3

relating to sensitive soils.

Temporary or permanent barricades to restrict vehicle access

Vehicle access on Union Island is restricted to a barge-landing site located within the woodlot, on the northeast side of the island. All Schedule A lands are accessed by the water and do not contain road networks.

A log handling/storage tenure (Crown Lands File# 1408212) is located adjacent to the barge landing site and is currently held by the Province of British Columbia.

Resource Features

A Government Actions Regulation Order, dated May 30, 2007, has designated karst as a resource feature in the Campbell River Forest Natural Resource District. A karst area associated with the Parsons Bay Formation is located in the Upsowis woodlot parcel.

A non-legal old growth management area (OGMA; ID # 42347) has been designated within the southeastern area of the woodlot. No Landscape Unit Plan has been approved for the Kyuquot Sound area to set targets for old-growth retention, and OGMAs have not been accounted for in the W1941 Management Plan.

Other features and resource values relevant to the management of the Woodlot Licence not mentioned specifically in the text above are indicated on the attached maps. Not all streams shown indicate a class or riparian management area due to lack of information at the time this plan was prepared. Stream classification, mapping and RMA designations will be assessed and updated on an ongoing basis concurrent with development planning.

AREAS WHERE TIMBER HARVESTING WILL BE AVOIDED

For the duration of this Woodlot License Plan, all Schedule A Treaty Settlement (former IR) lands will be reserved from harvest. These areas were not considered in the allowable cut calculation in the Management Plan, as it was assumed that appropriate forested Treaty Settlement lands of equal size will be substituted for these IR lands after the Maanulth Treaty Final Agreement effective date.

AREAS WHERE TIMBER HARVESTING WILL BE MODIFIED

Areas in this Woodlot Licence where timber harvesting will be modified to protect and manage resources include riparian reserve zones, riparian management zones, wildlife tree patches, visually sensitive areas, high sensitivity recreation areas, and contiguous areas of sensitive soils. These areas (except for contiguous areas of sensitive soils) are shown on the Woodlot Licence Plan Map (Appendix 1) by shading, hatching or lines.

 Areas with established visual quality objectives (VQO) will be managed to ensure harvest areas are managed to be consistent with the VQOs. Designed openings will follow the line and form of the landscape and the assessment procedures outlined in the Visual Impact Assessment Guidebook 2001 may be used to direct design and assist in evaluation. Harvesting prescriptions may also be modified to maintain visual quality in areas of the woodlot with no established visual quality objectives. Schedule B lands on Union Island are visible from Kyuquot Channel from the south, Pinnace Channel to the east, and Crowther Channel from the north.

- Areas of sensitive soils and/or slopes greater than 60% exist in areas of the woodlot and may have modified harvesting prescriptions. These areas will be identified during harvest planning fieldwork. All unstable and potentially unstable terrain will be subject to a terrain stability assessment prior to any harvesting or road building activities. Areas of terrain class 4 and 5 have been mapped and are shown in red hatching. Mapping will be further refined during fieldwork.
- Riparian reserve zones (RRZs) and wildlife tree patches (WTRAs) are not planned for regular harvesting other than that specified by regulation, such as tree removal for the purpose of road crossings, creating trails, or for carrying out a sanitation treatment. These areas include reserve zones allocated to streams and wetlands and those areas designated or projected as WTRAs. RRZs are shown in light red shading on the map. WTRAs are shown in light green shading on the map.
- Riparian Management Zones may have modified harvesting prescriptions. The table below (Table 2) outlines how timber harvesting will be modified based on the stream and lake classification. Depending on the present stand structure, terrain, windthrow risk and block configuration the retention level will be uniform, grouped or spatially distinct. In general, understory and unmerchantable cedar and other conifers of good form and vigour will be maintained wherever possible to meet the intent of riparian area management for all stream and wetland classifications. RMZs are denoted in green shading on the map.

RIPARIAN CLASS	INTENT OF MANAGEMENT	SPECIES TO RETAIN	RMZ RETENTION LEVEL POST HARVEST (stems/ha)			
S1 (Fish bearing or Community Watershed >20m)	 Maintain the integrity of the RRZ Assist in maintaining wildlife attributes within the RMA, such as wildlife tree cover, nesting and perching habitat and diversity of vertical forest structure. 		20 - 100%			
S2 (Fish bearing or Community Watershed 125.0m - <20.0m)	 Maintain the integrity of the RRZ Assist in maintaining wildlife attributes within the RMA, such as wildlife tree cover, nesting and perching habitat and diversity of vertical forest structure. 		20 - 100%			
S3 (Fish bearing or Community Watershed 1.5 - 5.0m)	 Maintain the integrity of the RRZ Assist in maintaining wildlife attributes within the RMA, such as wildlife tree cover, nesting and perching habitat and diversity of vertical forest structure. 	Fd, Cw, Hw,	20 - 100%			
S4 (Fish bearing or Community Watershed up to 1.5m)	 Maintain stream bank integrity Provide shaded cover, LWD and litter 	Ac	10 - 100%			
S5 (non-fish >3m)	 Maintain stream bank integrity Provide shaded cover, LWD and litter 		10 - 100%			
S6 (non-fish ≤3m)	 Maintain stream bank integrity Provide shaded cover, LWD and litter Minimize debris transport to lower reaches of stream 		5 - 100%			
Lake and Wetlands	 Maintain the integrity of the RRZ Assist in maintaining wildlife attributes within the RMA, such as wildlife tree cover, nesting and perching habitat and diversity of vertical forest structure. 	le RRZ Ilife attributes within e tree cover, nesting diversity of vertical				

Table 2: Modification of Harvesting in RMZs by Riparian Classification

Fd = Douglas fir, Cw = western red cedar, Hw = western hemlock, Pl = lodge pole pine, Dr = red alder, Ac = cottonwood

 In 2007 the Campbell River Forest District established surface and subsurface elements of a karst system as resource features by legal order. Those are karst caves, significant surface karst features and important features and elements within very high or high vulnerability karst terrain. There is a chance that karst features will be identified in the Upsowis woodlot parcel during field surveys and engineering.

Known karst areas are located in the Upsowis IR parcel, which is included in the area where timber harvesting will be avoided. Should karst features be located in other areas of the woodlot, the licensee will consult available documentation such as "Karst Inventory Standards and Vulnerability Assessment Procedures for British Columbia" and the "Karst Management Handbook for British Columbia" to identify and assess encountered karst features within the woodlot licence. The subsequent engineering and mitigation planning will rely on professional judgment and the assistance of specialists, if necessary.

PROTECTING AND CONSERVING CULTURAL HERITAGE RESOURCES

Woodlot Licence W1941 lies within the traditional territory of the Ka:'yu: 'k't'h'/Che:k'tles7et'h' First Nations (KCFN). The KCFN has always managed their traditional territory with a holistic approach, with the protection of its resource as the primary objective. The woodlot will be managed to provide wide-ranging benefits to the community including diversification of the local economy, provision of employment opportunities, and provision of a potential fibre supply for the development of value-added manufacturing opportunities in the community, while ensuring long-term sustainability of non-timber forest products and forest foods.

Collective treaty rights of the Maa-Nulth Nations to harvest fish, aquatic plants, wildlife and migratory birds exist and are addressed through objectives set by government for conserving water quality, fish habitat, wildlife habitat and biodiversity and for conserving and protecting cultural heritage resources that is of continuing importance to that people.

In addition to the information sharing process that is implemented for the approval of this plan, Maa-Nulth First Nations and other interested parties are welcome during the term of this plan to review planned developments upon their own initiative. Documentation of all information sharing with First Nations will be included within the supplemental information (Part II) of the final submission of this plan.

An Archaeological Overview Assessment (AOA) was completed for the area of the Woodlot Licence in 2005. New harvesting will require careful consideration by KCFN planners, and at a minimum, an Archaeological Impact Assessment (AIA) will be completed.

If the licensee or any personnel connected with the Woodlot Licence operation finds evidence of traditional use or cultural heritage values, the Ka:'yu: 'k't'h'/Che:k'tles7et'h' First Nation and the Ministry of Forests Aboriginal Liaison Officer or, in his or her absence, the District representative will be notified and all work will cease within the immediate (30 m) area pending further investigation by all parties.

The following results and strategies (Table 4) for managing cultural heritage values will apply. These are based on known cultural heritage issues of interest to First Nations in the Campbell River Forest District.

Cultural	Results & Strategies											
Heritage Value												
Cedar:	Result:											
	 Enable continued access to red cedar, including monumental cedar, f traditional use by local First Nations. Strategies: 											
	• Based on availability of stock and ecological suitability (e.g. Cw listed as preferred species), a component of Cedar will continue to be planted in the woodlot to ensure a long-term supply.											
	• Naturally occurring young cedar trees (including poles) will be retained where operationally feasible.											
	• Facilitate access by KCFN to monumental cedar trees and other cultural use cedar.											
Traditionally	Result:											
Used Plants:	 Enable continued access to traditionally used plants for traditional use by local First Nations. 											
	Strategies:											
	• A no-pesticide use policy is implemented in this Woodlot Licence. Manual brushing and early planting of large stock is the preferred method to overcome brush problems.											
Cultural Heritage	Result:											
Resources	Harvest plans will consider identified cultural heritage resources.											
	Strategies:											
	• The Licensee will share information with KCFN members upon request and be available for field reviews.											

Table 4: Results and Strategies for Cultural Heritage Resources

WILDLIFE TREE RETENTION STRATEGY

<u>Note:</u> The proportion of the Woodlot Licence area that is occupied by wildlife tree retention areas is specified in the "PERFORMANCE REQUIREMENTS" section of this Woodlot Licence Plan.

INDIVIDUAL WILDLIFE TREES

a) Species and Characteristics:

Desired species are (in order of preference): Fd, Cw, Ss, Ba, Hw, and Dr with a minimum dbh of 50cm. The following table describes the species and characteristics of individual trees that will guide the selection of wildlife trees to be retained from harvesting.

	HIGH (at least two of the listed characteristics)		MEDIUM		LOW
•	Internal decay (heartrot or natural/excavated cavities present)	•	Large, stable trees that will likely develop two or more of the	•	Trees not covered by HIGH or MEDIUM
rics.	Crevices present (loose bark or cracks suitable for bats)		characteristics listed under HIGH		categories
เริ่ม	Large brooms present				
١	Active or recent wildlife use				
¦ ຊີ	Current insect infestations				
CHAŘ/	Tree structure suitable for wildlife use (e.g. large nest, hunting perch, bear den, etc.)				
•	Largest tree on site (height and/or diameter) and/or veterans				
•	Locally important wildlife tree species				

Table 5: Wildlife Tree Value and Characteristics for All Species

From: Wildlife Tree Committee recommendations available at: http://www.for.gov.bc.ca/hfp/wlt/wlt-policy-02.htm

b) Conditions under which Individual Wildlife Trees may be Removed:

The following specific conditions will influence the decision of where individual wildlife trees may be removed:

- worker safety;
- non-feasibility of alternate road locations;
- the significance of forest health risk to surrounding stands;
- the ability to retain other wildlife trees to perform as suitable wildlife habitat; and
- the availability of wildlife trees and CWD in adjacent areas.

Unsafe high value wildlife trees will be protected by no-work zones or re-design of cutblock or road configuration if they exhibit a combination of the following characteristics: wildlife tree value category HIGH applicable, DBH > 50 cm, wildlife tree class 2 - 8, > 20 m high, conks or decay present, wildlife use present (nesting, cavities, recent feeding, denning), species Fd, Cw, Ss, Ba, Hw, and Dr. All workers involved with the removal of potential wildlife trees will be informed of applicable standards prior to fieldwork to help mitigate unnecessary removals.

c) Replacement of Individual Wildlife Trees:

Individual trees will be replaced if they are of 'high' wildlife value. Replacement trees will be selected using criteria outlined above with a preference for selecting trees that have two or more high wildlife tree value characteristics.

WILDLIFE TREE RETENTION AREAS

a) Forest Cover Attributes:

Wildlife tree retention area (WTRA) designations will take into account the Forest Practices Code of BC Biodiversity Guidebook recommendations (Sept 1995) and the Ecological Guiding Principles proposed by the Wildlife Tree Committee. They will include representative timber types including some representative larger trees (DBH > average operational cruise) with moderate to high value to wildlife. Regenerating stands with future wildlife potential may also be included.

Wildlife tree retention areas (WTRAs) will be preferentially located in fully constrained areas for long-term retention. The Woodlot Management Plan assumes that approximately 50% of WTRAs will be met through areas outside the timber harvesting land base, including riparian areas, low productivity sites, and sensitive or inoperable terrain. Final mapping and location of WTRAs adjacent to cut blocks will be shown on pre-harvest mapping required by Section 33 of the Woodlot Licence Planning and Practices Regulation (WLPPR).

The minimum proportion of the Woodlot Licence area required for long-term WTRAs retention is 65.4 ha (8.0%) as per Section 52(1) of the WLPPR. Therefore the minimum portion of the Union Island Schedule B lands required for WTRA is 60.3 ha. There are 10.2 ha of existing WTRA previously designated in association with BCTS TSL's A39596 and A81104. An additional 13.5 ha is occupied to date by projected RRZ's, which, in general if they are suitable, will also be designated as WTRA's. The additional WTRA requirements will be identified and designated over time, concurrent with development planning and ground assessment.

Through on-going observation, there will be potential for identifying and locating nesting trees, and other important habitat trees for retention and additional wildlife tree patches. No nesting sites or bear dens requiring specific habitat or tree retention have been identified to date.

b) Conditions Under which Trees may be removed from Wildlife Tree Retention Areas:

The goal is to maintain all stems within WTRAs. However, the following stand-specific issues will influence the decision of where salvage may be appropriate for WTRAs:

- worker safety;
- the significance of forest health risk to surrounding stands;
- the ability of the retained wildlife trees to perform as suitable wildlife habitat; and
- the availability of wildlife trees and CWD in adjacent harvest areas.

Salvage of windthrown timber is permitted within WTRAs where it is not within a RRZ and where windthrow impacts 25% to 50% of the dominant or co-dominant stems. Salvage of windthrown timber and harvesting of remaining standing stems is permitted within WTRAs where windthrow exceeds 50% of the dominant or co-dominant stems; or where forest health issues pose a significant threat to areas outside the WTRA. Salvage of timber within a RRZ that has been windthrown, damaged by insects, fire, disease, or other causes is permitted if the salvage operation will not have a material adverse impact on the RRZ.

Individual trees may be felled but not removed if considered a safety hazard. Removal is acceptable if trees must be felled as a safety measure during salvage harvesting.

c) Replacement of Trees Removed from Wildlife Tree Retention Areas:

In order to provide management flexibility, WTRAs may be replaced over time with suitable areas that meet forest cover criteria and are of equal or greater quality to the original area. Where salvage/harvesting is planned and authorized within a non-RRZ wildlife tree patch, a suitable replacement WTRA of at least equivalent quality will be identified concurrently to achieve the retention target. Where all or part of a WTRA is salvaged, the salvaged area should be replaced with other suitable habitat. If a WTRA suffers windthrow, but is not salvaged, it need not be replaced. Replacement areas must have equal or better wildlife values. For non-riparian WTRAs, attempts will be made to incorporate important features such as snags, marking, perch and nesting trees, dens, and other significant wildlife features.

Given the nature of the adjacent stands and existing WTRAs, the felling of danger trees within a distance from harvest edges as defined in the specific cutting authority will not be a common occurrence or threaten the long-term integrity and usefulness of the WTRAs. As such, no strategy for the specific replacement of individual trees within WTRAs is presented.

MEASURES TO PREVENT INTRODUCTION OR SPREAD OF INVASIVE PLANTS

The woodlot area will be monitored for the appearance of invasive plant species listed in the Invasive Plant Regulation (BC Reg. 18/2004).

Exposed mineral soils will be grass seeded if establishment of invasive species within the woodlot becomes a concern. In the event that an invasive species becomes established it will be brushed repeatedly or scarified and grass seeded.

Where it is known or reasonably expected that machinery will be transported from a contaminated site, on or off the woodlot, cleaning of tires, tracks, bucket, undercarriage, etc. will be completed prior to transportation. If any gravel is imported to the woodlot for road construction purposes it will come from a source that is free of invasive species.

To prevent the introduction of invasive species through grass seeding, seed mixtures used for the above purposes or for those under S.29 of the WLPPR will be Common #1 Forage grade or better.

MEASURES TO MITIGATE EFFECT OF REMOVING NATURAL RANGE BARRIERS

There are no rangelands present on or adjacent to the Woodlot Licence and no mitigation measures or activities are proposed.

STOCKING INFORMATION FOR SPECIFIED AREAS

The stocking standards for specified areas are found in Appendix 2 – Alternative S tocking Standards.

Specified areas include:

- Areas subject to commercial thinning
- The removal of individual trees
- Areas subject to single/group tree selection
- Other types of intermediate cutting
- Areas subject to the harvest of special forest products

For the purposes of this plan, commercial thinning, the removal of individual trees, group selection, intermediate cutting or the harvest of special forest products may take place anywhere within the woodlot except in designated areas where harvesting will be avoided. The delineation of specific areas will be conducted in conjunction with the pre-harvest mapping as per Section 33 of the WLPPR.

PERFORMANCEREQUIREMENTS

SOIL DISTURBANCE LIMITS

Alternative - WLPPR s.24(1)(a):

- a) up to a maximum of 35% in localized areas (standard unit basis) requiring site preparation for brush or root rot control. In areas dominated by heavy salal or salmonberry a light soil raking using an excavator mounted brush rake may be prescribed to disturb salal/salmonberry roots. This will create more plantable spots and facilitate seedling establishment and achieve early brush control. The objective of this treatment is to minimize brush competition during seedling establishment and to create a mixed substrate of soil and forest floor, not a complete removal of the forest floor. This treatment may result in dispersed scalps and gouges.
- b) up to a maximum of 15% in wet site units with fluctuating water tables or prolonged periods of standing water in the winter. In these areas 400-600 mounds per ha may be created (where prescribed) using an excavator bucket to create suitable micro sites. This will result in dispersed deep gouges.

Further rationale is provided in Section II-4 of the supplementary information included with this plan.

c) where site preparation is not required, the standard 8% soil disturbance limit will apply.

PERMANENT ACCESS STRUCTURES

Default: WLPPR s.25:

- The maximum area occupied by permanent access structures is as follows:
 - Cutblocks <5 ha 7% of cutblock area
 - Cutblocks >5 ha 10% of cutblock area
 - Total Woodlot Licence Area 7% of Woodlot Licence area

USE OF SEED

Default - WLPPR s.32:

• Adoption of Chief Forester's Standards for Seed Use.

STOCKING STANDARDS

Alternative - WLPPR s. 35(1)(a):

• The stocking standards, regeneration dates and free growing dates are indicated in Appendix 2. Clarification and rationale is provided in Section II-4 of the supplementary information included with this plan.

WIDTH OF STREAM RIPARIAN AREAS

Alternative - WLPPR s.36(4)(a):

- In general, the width of stream riparian management areas (RMA) will be as specified in Section 36(4)(b) of the WLPPR. However, if roads are located in a riparian area, RMA widths are reduced to the distance from the stream bank edge to the lower edge of the fill slope for the roads and trails. This is intended to provide road location flexibility in areas of complex, steep terrain.
- Clarification and rationale for the RMA reductions is provided in the supplementary information included with the plan.
 See Section II - 4.

WIDTH OF WETLAND RIPARIAN AREAS

Alternative - WLPPR s.37(3)(a):

- In general the width of wetland riparian management areas will be as specified in Section 37(3)(b) of the WLPPR. However, if roads are located in a riparian area, RMA widths are reduced to the distance from the wetland edge to the lower edge of the fill slope for the roads and trails. This is intended to provide road location flexibility in areas of complex, steep terrain.
- Clarification and rationale for the RMA reductions is provided in the supplementary information included with the plan.
 See Section II - 4.

WIDTH OF LAKE RIPARIAN AREAS

Default - WLPPR s.38(2)(b):

• The minimum width of the riparian reserve zone, riparian management zone and riparian management area are as specified in Section s.38(2)(b) of the WLPPR.

RESTRICTIONS IN A RIPARIAN RESERVE ZONE

Default - WLPPR s.39:

• Cutting, modifying or removing trees in a riparian reserve zone is limited to the purposes described in Section 39 of the WLPPR.

RESTRICTIONS IN A RIPARIAN MANAGEMENT ZONE

Default - WLPPR s.40:

• Construction of a road in a riparian management zone is limited by the conditions described is Section 40 of the WLPPR.

WILDLIFE TREE RETENTION

Default - WLPPR s.52(1):

The proportion of the Woodlot Licence area that is occupied by wildlife tree retention areas is no less than the least of the following:

- The proportion specified for the area in a land use objective, or
- The proportion specified in the WLP, or
- 8%

Note: The proportion of the Woodlot Licence area that is presently occupied by projected wildlife tree retention 10.2 ha (1.2%); 13.5 ha are also currently retained in RRZs. Additional areas will be identified and designated concurrent with development planning.

COARSE WOODY DEBRIS

Default - WLPPR s.54(1):

Area on <u>Coast</u> – minimum retention of 4 logs per ha \geq 5 m in length and \geq 30 cm in diameter at one end.

RESOURCE FEATURES

Default - WLPPR s.56(1):

Ensure that forest practices do not damage or render ineffective a resource feature.

Note: Only the performance requirements in Part 3 (Practice Requirements) of the WLPPR for which an alternative can be proposed are shown in this Woodlot Licence Plan. The remaining performance requirements in Part 3 are not shown, nor are the performance requirements in Part 4 (Roads) which also apply.

APPENDIX 1: WOODLOT LICENCE PLAN MAP



APPENDIX 2: ALTERNATIVE STOCKING STANDARDS

Table: A

ADMINISTRATION			
Coast Region	Campbell River Natural Resource District	Licensee: Ka:'yu:'k't'h'/Che:k:tles7et'h First Nation	Woodlot Licence W1941

Stocking Standards ID#	REF #	BEC	2				Prefe	red Spe	cies			Acceptable Species					Acceptable Species						Min Inter Tree Dist (m)	Regen Delay	FG Date	Tree Ht > Brush (min %)	Post S Der	pacing Isity	Comments:
		Zone & variant	Site Series	1	Ht (min)	2	Ht (min)	3	Ht (min)	4	Ht (min)	1	Ht (min)	2	Ht (min)	3	Ht (min)	4	Ht (min)	Target P&A (sph)	Min P&A (sph)	Min P (sph)	MITD (m)	Max (yrs)	Late (yrs)		Min	Max	
	А	CWHvh1	01	Cw	1.5	Hw	2.0	Yc	1.5			Fd ⁹	2.0	Ss ³⁵	3.0	Pl ⁶	1.5	Ва	1.75	900	500	400	2.0	6	20	150	500	1500	None – Zonal site
	В	CWHvh1	02	Cw	1.0	Yc	1.0	PI	1.25											400	200	200	2.0	3	20	150	200	800	Avoid logging – xeric site, shallow soils
	С	CWHvh1	03	Cw	1.0	Hw	1.25	Yc	1.0	PI	1.25									800	400	400	2.0	6	20	150	400	1200	None
	D	CWHvh1	04	Cw	2.0	Hw	1.75	Ва	2.25			Ss ³⁵	4.0							900	500	400	2.0	6	20	150	500	1500	None
	E	CWHvh1	05/06	Cw	2.0	Yc	2.0	Ва	2.25			Hw ²	1.75	Ss ³⁵	4.0					900	500	400	2.0	3	20	150	500	1500	None
	F	CWHvh1	07	Cw	2.0	Ва	2.25					Hw^1	1.75	Ss ³⁵	4.0					900	500	400	2.0	3	20	150	500	1500	None
	G	CWHvh1	08	Cw	2.0	Ss ³⁵	4.0					Ва	2.25							900	500	400	1.5	3	20	150	500	1500	Floodplain – high bench
	н	CWHvh1	09 ¹	Cw	2.0	Ss ³⁵	4.0					Ва	2.25							900	500	400	2.0	3	20	150	500	1500	Floodplain – medium bench
	I	CWHvh1	11 ¹	Cw	1.0	Yc	1.0	Hw	1.25	PI	1.25									800	400	400	2.0	3	20	150	400	1200	None
	J	CWHvh1	12 ¹	Cw	1.0	Yc	1.0	PI	1.25											400	200	200	1.5	3	20	150	200	800	Avoid logging – wet and very poor
	к	CWHvh1	13 ¹	Cw	1.0	Yc	1.0					Hw	1.25							800	400	400	1.5	3	20	150	400	1200	Organic soils - avoid ground based equipment
	L	CWHvh1	14	Cw	1.0	Ss ³⁵	2.0					PI	1.25							400	200	200	2.0	3	20	150	200	800	Avoid logging – rocky headland
	м	CWHvh1	15	Cw	1.5	Ss ³⁵	3.0					Hw	2.0							900	500	400	2.0	3	20	150	500	1500	Avoid logging – old beachplain
	Ν	CWHvh1	16	Cw	1.5	Ss ³⁵	3.0					PI	1.5							400	200	200	2.0	3	20	150	400	1200	Avoid logging – rocky headland
	0	CWHvh1	17	Cw	1.0	Ss ³⁵	2.0					Hw	1.25							900	500	400	2.0	3	20	150	500	1500	Avoid logging – Marine terrace/scarp
	Р	CWHvh1	18	Cw	1.25	Ss ³⁵	2.5	PI	1.25											400	200	200	1.5	3	20	150	200	800	Avoid logging – Fluctuating brackish water
	Q	CWHvh1	05/06	Dr ³⁹	4.0															1200	1000	800	1.5	3	20	150	800	1500	High density deciduous management
	R	CWHvh1	07/08/09	Dr ^{39,41}	4.0															1200	1000	800	1.5	3	20	150	800	1500	High density deciduous management

Foot Notes

- 1 Elevated microsites are preferred
- 2 Suitable on thick forest floors
- 6 Restricted to nutrient-very-poor sites
- 9 Restricted to southerly aspects
- 35 Risk of weevil damage, use resistant stock where possible
- 39 Avoid exposed and windy sites
- 41 Limited by poorly drained soils

Stocking Standards - General Comments

This table has been developed from the *Reference Guide for FDP Stocking Standards* dated December 18, 2003 (updated as of Nov. 12, 2010), and the standards established in the Woodlot Licence Forest Management Regulations (January 31, 2004) Division 2 of Part 6, Schedule A, Table A as well as the correlated guidelines and site interpretation for the Vancouver Forest Region (VFR). Where site series have similar stocking standards, they have been combined. Sections A – P are the general stocking standards.

'Biogeoclimatic unit' or 'BEC' means the zone, subzone, variant and site series described in the most recent field guide published by the Ministry of Forests for the identification and interpretation of ecosystems, as applicable to a harvested area.

Site series with the comment of 'avoid logging'or 'floodplain' have been included. However, management on these sites will be limited and will generally be included within a mosaic of better sites. In some cases where there are fluctuating water tables, mounding may be prescribed to create better microsites.

Where standards units (SUs) are comprised of an un-mappable mosaic of site series, the practice will be to manage for the stocking standards, noted by the ID#, of the dominant site series provided that the tree species are suitable (i.e. preferred and acceptable) in all site series contained within the SU.

The presence of Fd as an acceptable species in site series 01 is based on the approved stocking standards used by other licences operating in the CWHvh1 BEC subzone. Fd is present within the existing forest cover. Planting is limited to sunny, southerly aspects.

A limited number of scattered broadleaf trees will be tolerated on all conifer plantations to provide a nurse crop, promote nutrient cycling and for general biodiversity objectives. Up to 50 stems per hectare (sph) of broadleaf trees will be allowed such that they do not influence the free to grow status of adjacent conifers. Because the standard methodology (3.99m radius plot) is too small to reflect appropriate deciduous densities only 1 deciduous tree per 4 sample plots will be allowed.

The minimum inter-tree spacing is generally reduced to 1.5 m under the following sitespecific conditions: frequent bedrock, large blocky colluvium, hygric sites, and disturbed roadside areas amongst slash accumulations (up to 10 m from the travelled portion of the road). On machine mounded sites the minimum inter-tree spacing is reduced to 1.0 m.

Deciduous Management

Deciduous Management stocking standards have been added to provide flexibility. Stands with a significant deciduous component (>30% deciduous) currently account for 1% of the woodlot area. The most recent annual allowable cut (AAC) calculation (W1941 Management Plan #2: Appendix I, Harvest Planning Report) indicates that approximately <0.01% of the woodlot volume production comes from deciduous species. The product objective for alder regeneration is to manage for high quality knot-free sawlogs on a 40 - 50

year rotation.

Recommended Regime:

Deciduous stand-establishment with high densities (1500 sph) is required to achieve a target of 1200 stems/ha at free-growing. The timing and number of spacing treatments required will vary based on the stand establishment density and the rate of self-pruning. Spacing/thinning should be conducted before crown recession exceeds 40-50%. Dead branch pruning of crop trees should be completed early and density regulation treatments should take place approximately every 10 years to maintain good crown forms and eliminate low quality stems.

The establishment of a second crop conifer layer (Cw, Ss) before or after density treatment is optional. If a cedar or Sitka spruce understory is planted in addition, then the natural pruning of the alder would be enhanced. The removal of the alder at harvest age is operationally possible, while leaving a fully stocked, semi-mature conifer pole stand remaining.

Where conifers are established underneath a designated deciduous stand, the stand's regeneration and free to grow status will be measured using the deciduous standards only. The minimum free growing height criterion for deciduous species is based on the tallest conifer standard for each site series. Damage criteria for deciduous species have not been formally established. General free-growing criteria will be adopted, such that well spaced stems will be of good form, health and vigour.

Stocking Standards – Specified Areas

Specified areas include the salvage of scattered windthrow or root rot mortality, commercial thinning, individual tree removal, single or group tree selection, intermediate cut applications, and harvest of special forest products. These areas are exempt from the requirements to establish a Free Growing stand. Pre-harvest mapping will be required along with a post-harvest survey to determine compliance with the stocking standards listed in Table B.

Table B: Stocking Information	for Specified Areas
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Target from Table A	Stocking*									
Standards	Target pa	MIN pa	Min p							
(stems/ha)	(well spaced/ha)									
900-1200	400	200	200							
800	300	150	150							

* pa - preferred and acceptable species p - preferred species

Species to be Retained – Preferred and acceptable species and 'Target from Table A Standards' are as specified in Table A by biogeoclimatic ecosystem classification (BEC) site series.

Distribution of Retained Trees – Preferred and acceptable species should be evenly distributed throughout the stand. Openings of up to 0.1 ha in size and linear access structures up to 5m in width are acceptable. Openings greater than 0.1 ha in size and linear access structures greater than 5m in width are subject to the requirements of WLPPR S. 34.1, and the stocking standards listed in Table A

Characteristics and Quality of Retained Trees – Retained preferred and acceptable species must be healthy, and of good form. Damage criteria described in Table C describe factors that will result in a tree being assessed as unacceptable in a post harvest survey.

Location	Type of		ssed is	Possible					
of Damage	Damage	Hw, Ba, Yc, Fd, Ss, Pl	Cw	agents and codes	Comments				
Stem	Wound	* Wound girdles >33% of stem circumference, or * One wound >400cm ² on stem, or * Wound on major root within 1m of stem, or * Tree has gouge in stem.	* No criteria	Fire NB, windthrow NW, sunscald NZ, logging TL, mechanical TT.	A wound is described as an injury in which the cambium is dead, or completely removed from the tree exposing the sapwood. Measure the wound across the widest point of the exposed sapwood. Healed over wounds are acceptable.				
<u>STEM</u>	Decay	* Any pathological indicators may include conk, blind co rotten branches.	are present. This nk, frost crack, or	Various decay fungi DD.					
Stem	Deformation	 A crook displaces the portion of the stem above the defect by >50% from the line of growth formed by the stem below the point of defect in the bottom 2/3rds of the stem only. A fork occurs above stump height in the bottom 2/3rds of the stem only. A dead or broken top extends more than 20% of the stem length or the live crown is removed. 	* A dead tree with no live foliage. * <2/3rds of the stem unable to produce >50% merchantable volume.	Frost NG, hail NH, snow NY, drought ND, logging TL, mechanical TT, Dwarf mistles (see below).	Note: field guidance for estimation of merchantable Cw volume are listed in Appendix 1 of the <i>Single Entry Dispersed</i> <i>Retention Stocking Standard Framework</i> (Coast Region FRPA Implementation Team 2011).				
Stem	Dwarf Mistletoe Infection	* Hawksworth rating >3, or severe stem infections (major swelling or deformity) present.	* No criteria	Hemlock dwarf mistletoe DMH.	The Hawksworth rating system is described in the FPC Dwarf Mistletoe Management Guidebook (1995). This rating system will only apply to the tree/plot assessment level, and not at the stand level.				

Table C: Damage Criteria for Specified Areas

Location of Damage	Type of Damage	Tree being accessed is UNACCEPTABLE if:		Possible damage	Comments
		Hw, Ba, Yc, Fd, Ss, Pl	Cw	agents and codes	
Foliage	Defoliation	For defoliating insects: * >80% of foliage has been removed, lost, or damaged due to insect defoliation. For foliar diseases: * >50% of foliage has been removed, lost, or damaged.	* No criteria	Defoliators ID, foliage diseases DF.	
Foliage	Live Crown Vigour	* Stems >= 17.5cm dbh - <20% live crown due to poor vigour.	* A dead tree with no live foliage.		Percent live crown is the length of continuous green foliage on a tree expressed as a percentage of its total height.