WOODLOT LICENCE PLAN #1

WOODLOT LICENCE # W0085

July 10, 2007 to July 9, 2017

Kevco Timber Ltd.

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Authorized Licensee Signature:

[Signature] _____

[Print Name] _____

[Date] _____

District Manager Signature:

[Signature] _____

[Print Name] _____

[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 No.: W0085 and advises that:

- the decision to operate under one or more of the Default Performance Requirements provided in the *Woodlot Licence Planning and Practices Regulation* (WLPPR) is the sole responsibility of the woodlot licence holder, and involved no detailed oversight or advice from the prescribing registered professional forester,
- 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 _____ Seal:

Name (Print) Wolfram Wollenheit

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I. MANDATORY CONTENT FOR A WOODLOT LICENCE PLAN (WLP)

PLAN AREA

This plan covers the entire area of woodlot licence W0085.

Woodlot W0085 is located in Union Bay on the East coast of Vancouver Island near the southern boundary of the Strathcona Timber Supply Area. The total area of the licence is 593.8 hectares (ha), and is comprised of 400 ha of Crown land and 193.8 ha of private land owned by Kevco Timber Ltd. The Crown portion consists of two separate areas, Units 1, 6, 7, 8, 9, and 10 cover 383.8 ha located immediately West of Union Bay, and Unit 5 covers 16.2 ha located directly off of the Browns River Mainline 12 km west of Courtenay. The private portion of the woodlot licence consists of Units 2 and 3; Unit 2 includes Block 1359 located 3 km South of the Union Bay Crown portion; Unit 3 includes two contiguous blocks (Blocks 464 and 1358) located approximately 3.5 km west of the Union Bay Crown portion.

MAP AND INFORMATION

Table 1: Map and Information Content

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

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 included in the Appendices.

Biogeoclimatic Zones and Subzones

The entire area of woodlot licence W0085 is within the "Very Dry Maritime" subzone of the "Coastal Western Hemlock Biogeoclimatic Zone" (CWH xm1). This subzone's climate is characterized by warm, dry summers and wet, mild winters with relatively little snowfall. Average rainfall amounts to 1570 mm a year with rare accumulations of snow. The highest recorded temperature for this area is 43.9°C and the lowest is –20.6°C, with an annual average of 8.7°C. Growing seasons in this subzone are long with an average of 153 frost-free days per year.

Resource Management Zones, Landscape Units or Sensitive Areas

The area encompassed by woodlot licence W0085 is included in the private land designation in the Vancouver Island Land Use Plan. The private land designation is primarily Managed Forest Lands outside of Tree Farm Licences and also includes small areas of other private and crown land use such as W0085.

The woodlot licence area is located with the Trent Landscape Unit for which there is no approved landscape unit plan.

Sensitive areas are small areas of land and water that have unique or locally significant forest resources that are frequently sensitive to resource development activities such as hot springs or rare plant communities. There are no known sensitive areas within the woodlot licence area. Measures to protect less unique sensitive areas are addressed in the Performance Requirements section of this plan.

Scenic Areas

There are no established visual quality objectives (VQO) or scenic areas as identified on the Campbell River Forest District Scenic Areas and Visual Quality Objectives Map.

Community Watersheds

Currently, there is no registered community watershed established in the area of woodlot licence W0085. However, Langley Lake is used as a water source for the supply of Union Bay. Some areas in Unit 2 of this woodlot licence lie upstream from the Langley Lake. Future development will be carried out in a manner that will reduce the impacts on water quality. To mitigate any negative affects on water quality, seasonal restraints will be considered during the preparation of harvesting plans.

Licenced Water Supply Intakes and Infrastructures

The Union Bay Improvement District has a water licence (Licence C112815) and local authority water works. The intake for this infrastructure is located in Langley Lake approximately 1.5 km west of the woodlot licence area. There is also a water licence

(Licence C056814) on Tarnowski Creek, held by Joe Tarnowski. The intake for this water licence is approximately 575 m to the East of the N.E. corner of Lot 18 (Unit 7).

Recreation

The Ministry of Forests' recreation features inventory information pertaining to the woodlot licence area is summarized in the following table and the polygons numbers are also found on the WLP map. The large land mammal recreation feature was designated due to the presence of Roosevelt Elk in the area. Since the removal of the herd at the time of the construction of the Inland Island Highway, these polygon attributes are out of date.

Table 2: Recreational Resource Inventory for Woodlot Licence W0085

Polygon No.	Prominent Feature	Significance	Sensitivity	Impact Management
3720 / 3742	Hydro line R/W, regenerating stand, wetland vegetation	Medium	Low	Normal forest management practices are adequate to maintain recreational values
3723	Coniferous forest, large land mammals	Medium	Medium	Normal forest management practices are adequate to maintain recreational values
3728	Coniferous forest	Medium	Low	Normal forest management practices are adequate to maintain recreational values
3735	Wetland vegetation, upland birds	Medium	Low	Normal forest management practices are adequate to maintain recreational values
3738	Coniferous forest, large land mammals, regenerating stand	Medium	Medium	Normal forest management practices are adequate to maintain recreational values
3740	Small stream, aquatic habitat, deciduous forest	Medium	Medium	Normal forest management practices are adequate to maintain recreational values
3741	Regenerating stand, large land mammals	Medium	Medium	Normal forest management practices are adequate to maintain recreational values
3745	Regenerating stand, large land mammals	Medium	Medium	Normal forest management practices are adequate to maintain recreational values
3749	Regenerating stand, large land mammals	Medium	Medium	Normal forest management practices are adequate to maintain recreational values
3750	Mixed coniferous / deciduous forest, large land mammals	Medium	Medium	Normal forest management practices are adequate to maintain recreational values

Recreation in the woodlot licence presently consists of seasonal hunting, gathering of non-timber forest products, horseback riding, hiking, wildlife viewing, and mountain biking. These activities are centred around the developed roads and logging trails and in some cases management activities will create new access and opportunities. Overall, recreational opportunities are unlikely to be diminished by normal forest management practices.

Contiguous Areas of Sensitive Soils

Contiguous areas of sensitive soils may exist within the riparian management zone of Hart Creek. See "Areas Where Timber Harvesting Will be Modified" for strategies related to managing these areas.

Temporary or permanent barricades to restrict vehicle access

Temporary or permanent barricades to restrict vehicle access have been put in place at the entrance to portions of the woodlot licence, as shown on the woodlot licence plan maps. The purpose of these installations is to deter illegal activities, reduce fire hazard, minimize firewood theft, protect property (equipment etc), and to prevent garbage dumping.

Other Resource Uses and Issues

- BC Hydro Right of Way and Transmission line (Units 1, 6, 7, 8, 9 and 10)
- Vancouver Island Natural Gas Transmission Pipeline (Units 1, 6, 7, 8, 9 and 10)
- Weldwood of Canada Right of Way – Plan 617 (Units 1 and 6)
- McLeod Road Right of Way (Units 1, 6 and 8)

The following resources **are not known to exist** in the woodlot licence area:

- Wildlife habitat areas,
- Ungulate winter ranges,
- Community watersheds,
- Fisheries sensitive watersheds,
- Scenic areas,
- Archaeological sites, and
- Resource features not otherwise mentioned in the woodlot licence plan

AREAS WHERE TIMBER HARVESTING WILL BE AVOIDED

There are no areas in this woodlot licence where timber harvesting will be strictly avoided.

AREAS WHERE TIMBER HARVESTING WILL BE MODIFIED

Areas in this woodlot licence where timber harvesting will be modified to protect and manage resources are shown on the map by shading, hatching, or lines.

Areas where potentially unstable terrain may occur are denoted on the map with red cross-hatching. These areas are not planned for regular harvesting but, as in riparian reserve zones and WTPs, tree removal may occur for the purpose of creating trails, salvaging windthrown timber, or for carrying out a sanitation treatment[1]. Prior to harvesting, slopes greater than 50%, and/or slopes showing signs of potential instability, will be subject to a terrain stability assessment (TSA) by a qualified professional. The results of the TSA will be used to determine the nature and extent of any potential harvest such that the objectives and practice requirements contained within this plan, the Woodlot Licence Planning and Practices Regulation, and other applicable legislation are met.

Riparian reserve zones (RRZs) and **wildlife tree patches** (WTPs) are not planned for regular harvesting other than those specified by regulation or woodlot licence plan provisions, such as tree removal for the purpose of creating trails or for carrying out a sanitation treatment[1]. These areas include zones allocated to streams and wetlands and those areas designated or projected as WTPs. RRZs, including WTPs are denoted in light red shading on the map and specifically are:

- The RRZ located around Hart Creek (S2). The RRZ for Hart Creek consists of a 30 m buffer on both sides of the creek; the extension of the buffer to 50 m exists for the purpose of wildlife tree retention (WTP).
- The RRZ located around Jackpot Creek (S3). The RRZ for Jackpot Creek consists of a 20m buffer on both sides of the creek; the additional buffer south of the creek exists for the purpose of wildlife tree retention (WTP).
- The RRZ located around wetland 9-1 (W2) with a width of 10m around the perimeter. The additional buffer shown on the map exists for the purpose of wildlife tree retention (WTP).
- The Riparian reserve zone (RRZ) located around all S3 classified creeks in the woodlot licence. The RRZs for these creeks will consist of a 20m buffer on both sides of the creeks. Any additional buffer shown on the map exists for the purpose of wildlife tree retention (WTP).
- The Riparian reserve zone (RRZ) located around creek 7-2, otherwise known as Tarnowski Brook (S6). The RRZ for Tarnowski Brook will consist of 10m buffers on both sides of the creek. This buffer and additional reserve area is identified as WTP17.
- All WTPs identified as such on the WLP map.

[1] **Sanitation treatment:** Tree removal or modification operations designed to reduce damage caused by forest pests and to prevent their spread.

Riparian management zones are denoted by light green diagonal hatching on the map. The table below outlines how timber harvesting will be modified based on the stream and lake/wetland 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 left as much as possible to provide cover and bank stability.

Table 3: Modification of Harvesting in RMZs by Riparian Classification

RIPARIAN CLASS	INTENT OF MANAGEMENT	SPECIES TO RETAIN	RETENTION LEVEL POST HARVEST (stems/ha)
S2 and S3 (Fish bearing S2 =5.0 - 15.0m, S3 =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, Pl, Dr, Mb and Ac**	**25 - 100%**
S4 (Fish bearing up to 1.5m)	• Maintain stream bank integrity • Provide shade cover, LWD and litter		**25 - 100%**
S5 (non-fish ≥3m)	• Minimize debris transport to lower reaches of stream		**0 - 100%**
S6 (non-fish =3m)	• Minimize debris transport to lower reaches of stream		**0 - 100%**
W2 (wetland 1-5 ha.)	• 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.		**25 - 100%**

Fd = Douglas-fir, Cw = redcedar, Hw = hemlock, Pl = lodgepole pine, Dr = red alder, Mb = bigleaf maple Ac = cottonwood

PROTECTING AND CONSERVING CULTURAL HERITAGE RESOURCES

The woodlot licence lies within the traditional territories of six First Nations. A list of these First Nations and their contact information is provided within Part II – review and comments. In addition to the information sharing process that is implemented for the approval of this plan, 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 consultation with First Nations is to be included within the supplemental information (Part II) of the final submission of the plan.

An Archaeological Overview Assessment (AOA) was completed in 1996 for the Crown land portion of the woodlot licence. The completed study found that there were no previously recorded archaeological sites on the researched woodlot licence area. The assessment mapped the woodlot licence's entire Crown portion as zone 5, which is classed as having low potential for archaeological sites of any type. The assessment recommends that there is no requirement to conduct further archaeological field reconnaissance or impact assessments. During the information sharing process regarding this WLP the K'omoks First Nation informed the licensee that the woodlot is close to

their former village site at what is now known as Union Bay. In light of this the licensee and consulting field staff will continue to be diligent in looking for evidence of cultural heritage during fieldwork. Should any further archaeological fieldwork be required in the future, the licensee will invite members of the K'omoks First Nation to be involved in the work.

If the licensee or any personnel connected with the woodlot licence operation finds evidence of traditional use or cultural heritage values, the Ministry of Forests Aboriginal Liaison Officer and the K'omoks First Nation will be notified and all work will cease within the immediate (30 m) area. The licensee will cooperate fully, as requested by the Ministry of Forests Aboriginal Liaison Officer.

To help them stay up to date with development in the woodlot, the licensee will provide maps showing new road and block development at the cutting permit application stage.

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. Any other specific issues will be identified or provided by First Nations during the WLP consultation process.

Table 4: Results and Strategies for Cultural Heritage Resources

Cultural Heritage Value	***Results & Strategies***
Cedar:	***Result:*** • Enable continued access to redcedar for 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 licence to ensure a long-term supply. • Naturally occurring young cedar trees (including poles) will be retained where operationally feasible. • Access will be allowed to monumental cedar trees for traditional use by local First Nations. There are currently no known monumental cedar trees within the woodlot licence but the aforementioned recruitment strategies will enable opportunities for future generations.

Traditionally Used Plants:	***Result:*** • Enable continued access to traditionally used plants for traditional use by local First Nations.
	Strategies: • When local First Nations have indicated specific interest in traditionally used plant(s), the licensee will identify the presence of such plants in planned harvest areas and communicate this to the relevant First Nation(s) prior to cutting permit submission. This is to allow for review by the local First Nation(s) and to allow for the collection of traditionally used plants. Interested local First Nations will also be notified of traditionally used plants, particularly those indicated to the licensee as scarce, if identified on the woodlot outside of planned harvest areas. • 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. • The licensee will be diligent in looking for evidence of cultural heritage during fieldwork and will notify the MoFR ALO and the K'omoks First Nation if any evidence is discovered.
Cultural Heritage Resources	***Result:*** • Harvest plans will consider identified cultural heritage resources.
	Strategies: • The Licensee will share information with local First Nations upon request and be available for field reviews. • Cultural heritage resources will be identified during fieldwork and through information sharing with local First Nations.

WILDLIFE TREE RETENTION STRATEGY

Note: 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, Dr, Mb, Bg, Hw, with a minimum dbh (diameter at breast height = 1.3 m) of 50 cm. The following table describes the characteristics of individual trees that will guide the selection of wildlife trees to be retained from harvesting.

Table 5: Wildlife Tree Value and Characteristic

CHARACTERISTICS	HIGH (at least two of the listed characteristics)	MEDIUM	LOW
	• Internal decay (heartrot or natural/excavated cavities present) • Crevices present (loose bark or cracks suitable for bats) • Large brooms present • Active or recent wildlife use • Current insect infestations • 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	• Large, stable trees that will likely develop two or more of the characteristics listed under HIGH	• Trees not covered by HIGH or MEDIUM categories

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

Given the nature of the historic logging and the thrifty second-growth stands present in the woodlot licence area, few trees in a given stand may have 'high' value attributes. Trees may be left as dispersed individuals or as groups either internally or externally to harvest areas.

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

Specific conditions that influence the decision of where individual wildlife trees may be removed include:

- Worker safety;
- 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.

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. Additionally, the main goal for wildlife tree retention is to retain all-stems within streamside reserves (WTPs).

WILDLIFE TREE RETENTION AREAS

a) Forest Cover Attributes:

Wildlife tree patches (WTPs) are preferentially located in fully constrained areas for long-term retention such as riparian reserve zones (RRZs). The presently allocated WTPs and RRZs for W0085 are shown on the 1:5000 WLP maps and occupy 51.26 ha. or approximately 8.6% of the woodlot license area on fully productive ground. Given the shape of the woodlot licence and the presence of the natural features, the distribution and characteristics of the wildlife tree patches correlate with the FPC Biodiversity Guidebook recommendations (Sept 1995) and the Ecological Guiding Principles of the Wildlife Tree Committee. The WTPs include some representative larger trees (DBH > average operational cruise) that are of moderate to high value to wildlife, and regenerating stands with future wildlife potential. Table 6: Forest Cover Attributes of Existing Wildlife Tree Patches (WTPs) and Riparian Reserve Zones (RRZs).

Unit	Wildlife tree patch ID	Size (ha)	Forest Cover Attributes	Comments:
1	WTP 4	0.47	FC(BD) 4505-34	Good vertical structure with some large diameter trees.
1, 6, 9	Hart Creek	14.52	FCAc 4405-31	Fir on banks, Cw and Ac on bottom, wildlife trails.
3	Creeks 3-2, 3-3	0.50	F(H) 5407-25	Gullied terrain, uniform stand structure.
5	Jackpot Creek	4.71	FD 4407-32	Fir on slopes, Dr on bottom, diverse understory.
6	WTP 3	1.11	D(CAc) 2307-29	Open stand with thick understory, signs of wildlife.
6	WTP 5	0.59	FD(M) 4405-29	Root rot created snags, vertical structure and diversity.
7	WTP 6	1.89	DC(FAc) 2307-29	Healthy mixed stand with Dr snags, winter wet.
7	WTP 7	1.97	DF(MH) 2307-28	Diverse stand with some younger hardwood.
7	WTP 8	1.43	DFH(Ac) 2308-29	Open stand with good diversity, thick understory, wet.
7	WTP 9	1.21	DM(F) 3408-30	Open stand with good diversity, thick understory, snags.
7	WTP 10 WTP 13	1.24	D(F) 2308-29	Root rot created snags, large trees present.
7	WTP 17	3.18	DMF(Ac) 3408-29	Good vertical structure and diversity, wildlife trails.
9	Creek 9-1, 9-2 Wet 9-1	9.56	DF(CAc) 3306-27	Good species diversity, numerous large Ac.
9	WTP 1	0.70	F(D) 4406-36	Moderately open and less diverse, large trees.
9	WTP 14	2.86	DF(Ac) 3408-31	Good vertical structure, moderately open.
9	Creek 9-5	2.89	FHC 4406-31	Moderate species diversity, some snags.
10	Creek 10-1	1.92	F(D) 4505-25	Open stand with thick understory, large trees
10	WTP 15	0.51	F(C) 4407-27	Windthrow and root rot cause vertical diversity
		51.26		

The size, shape, and location of the presently shown WTPs is subject to change upon further engineering work. Creek classification of the Crown portion of the woodlot licence has been completed. Final mapping and location of WTPs adjacent to cutblocks will be shown with the submission of pre-harvest mapping as required by section 33 of the *Woodlot Licence Planning and Practices Regulation* (WLPPR).

The minimum proportion of the woodlot licence area for long term WTP retention is 47.5 ha or 8% as per Section 52(1) of the WLPPR. 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.

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

Stand specific issues that influence the decision of where salvage may be appropriate for WTPs include:

- Worker safety;
- The significance of forest health risk to surrounding stands;
- The ability of 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 WTPs where it is not within the 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 WTPs where windthrow exceeds 50% of the dominant or co-dominant stems; or where forest health issues pose a significant threat to areas outside the WTP. 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. Unsafe wildlife trees will be protected by no-work zones or re-design of cutblock configuration, only if they exhibit exceptionally high wildlife tree values combining the following characteristics: wildlife tree value category HIGH applicable, DBH > 50cm, wildlife tree class 2 – 8, > 20m high, conks or decay present, wildlife use present (nesting, cavities, recent feeding, denning), species Fd, Cw, Bg, Ss, Dr or Mb.

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

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

Where salvage/harvesting is planned and authorized within a non- RRZ wildlife tree patch, a suitable replacement WTP of at least equivalent quality will be identified concurrently to achieve the retention target. Where all or part of a WTP is salvaged, the salvaged area should be replaced with other suitable habitat in the nearest possible location. If a WTP suffers windthrow, but is not salvaged, it need not be replaced. Replacement areas must have equal or better wildlife values. For non- riparian WTPs, attempts will be made to incorporate important features such as snags, marking, perch and nesting trees, dens and other significant wildlife features.

MEASURES TO PREVENT INTRODUCTION OR SPREAD OF INVASIVE PLANTS

The introduction or spread of invasive plants, specifically of scotch broom, into the woodlot licence area through the use of standard practices is possible given the location of the woodlot licence. It should be noted that areas directly adjacent to the woodlot licence (Inland Island Highway and BC Hydro Right of Way) have existing invasive plant issues such as established scotch broom. Areas harvested adjacent to the highway and BC Hydro Right of Way will be replanted and a closed canopy will be re-established as quickly as possible to limit the establishment of the scotch broom. Vehicle access may be restricted via gates or berms. Where it is known or reasonably expected that machinery will be transported from a contaminated site, on or off the woodlot licence area, cleaning of tires, tracks, bucket, undercarriage, etc. will be completed prior to transportation. All newly established roads will be grass seeded if broom establishment becomes a concern. Seed mixtures used for the above purpose or for those under Section 29 of the *WLPPR* will be assessed to ensure that their use does not introduce additional invasive species. Other species listed in the *Invasive Plants Regulation* (reg. 18/2004) if identified and located in the woodlot licence area will be managed accordingly.

MEASURES TO MITIGATE EFFECT OF REMOVING NATURAL RANGE BARRIERS

There are no rangelands present on or adjacent to the woodlot licence and no measures or activities are proposed.

STOCKING INFORMATION FOR SPECIFIED AREAS

The stocking standards for specified areas are found in Appendix 6- Alternative Stocking Standards.

Specified areas include:

- areas subject to commercial thinning,
- the removal of individual trees, or
- areas subject to single/group tree selection or
- other types of intermediate cutting and /or
- areas subject to the harvest of special forest products.

For the purposes of this plan, commercial thinning, the removal of individual trees, single/group selection, intermediate cutting or the harvest of special forest products may take place anywhere within the woodlot except in areas not planned for regular harvesting. The delineation of specific areas will be conducted in conjunction with the pre-harvest mapping as per Section 33 of the WLPPR.

PERFORMANCE REQUIREMENTS

SOIL DISTURBANCE LIMITS

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

8% of Net Area to be Reforested ***except:***

a) up to a maximum of 30% in localized areas (standard unit basis) dominated by heavy salal or salmonberry where light soil raking using an excavator mounted brush rake will be prescribed to disturb and stir up the salal/salmonberry roots to create planting spots to facilitate seedling establishment and achieve early brush control. While this treatment may create dispersed wide to very wide scalps (thus the increased limit), the objective is a mixed substrate of soil and forest floor and not a complete removal of the forest floor.

b) up to a maximum of 15% in wet site units with fluctuating water tables or prolonged periods of standing water in the winter (CWH xm 12,13,14,15). 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.

Rational: This site preparation treatment would be conducted concurrent with, or immediately following harvesting resulting in soil disturbance, and they may meet the criteria for scalps and gouges. The increased limits are maximums only and are included to increase flexibility on these sites. These site conditions will normally constitute a small proportion of an applicable harvest area. Prescription and application of these treatments will consider critical site factors including soil sensitivity to compaction, erosion, and displacement.

PERMANENT ACCESS STRUCTURES

Default - WLPPR s.25:

The maximum area occupied by permanent access structures is as follows:

- Cutblocks ≥ 5ha.- 7% of cutblock area
- Cutblocks < 5ha.- 10% of cutblock area
- Total woodlot license area- 7% of woodlot license 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 6. Clarification and rationale is provided in the supplementary information included with the plan. See Section II-4.

WIDTH OF STREAM RIPARIAN AREAS

Default - as specified in section 36(4) of the WLPPR

WIDTH OF WETLAND RIPARIAN AREAS

Default - as specified in section 37(3) of the WLPPR

WIDTH OF LAKE RIPARIAN AREAS

Default - as specified in section 38(2) 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(1) of the WLPPR
- Restrictions on constructing a road in a riparian reserve zone are as described in Section 39(2.1)

RESTRICTIONS IN A RIPARIAN MANAGEMENT ZONE

Default- WLPPR s.40:

- Construction of a road in a riparian management zone is limited to the conditions described in Section 40(1) of the WLPPR.
- Restrictions and conditions on road construction, maintenance and deactivation activities, and on cutting, modifying, or removing trees in a riparian management zone are as described in Section 40

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 that 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 occupied by projected wildlife tree retention areas is currently at 8.6 %.

COARSE WOODY DEBRIS

Default - WLPPR s.54 (1):

- Minimum retention of 4 logs per ha. ≥ 5m in length and ≥ 30cm in diameter at one end.

RESOURCE FEATURES

Default - WLPPR s.56 (1):

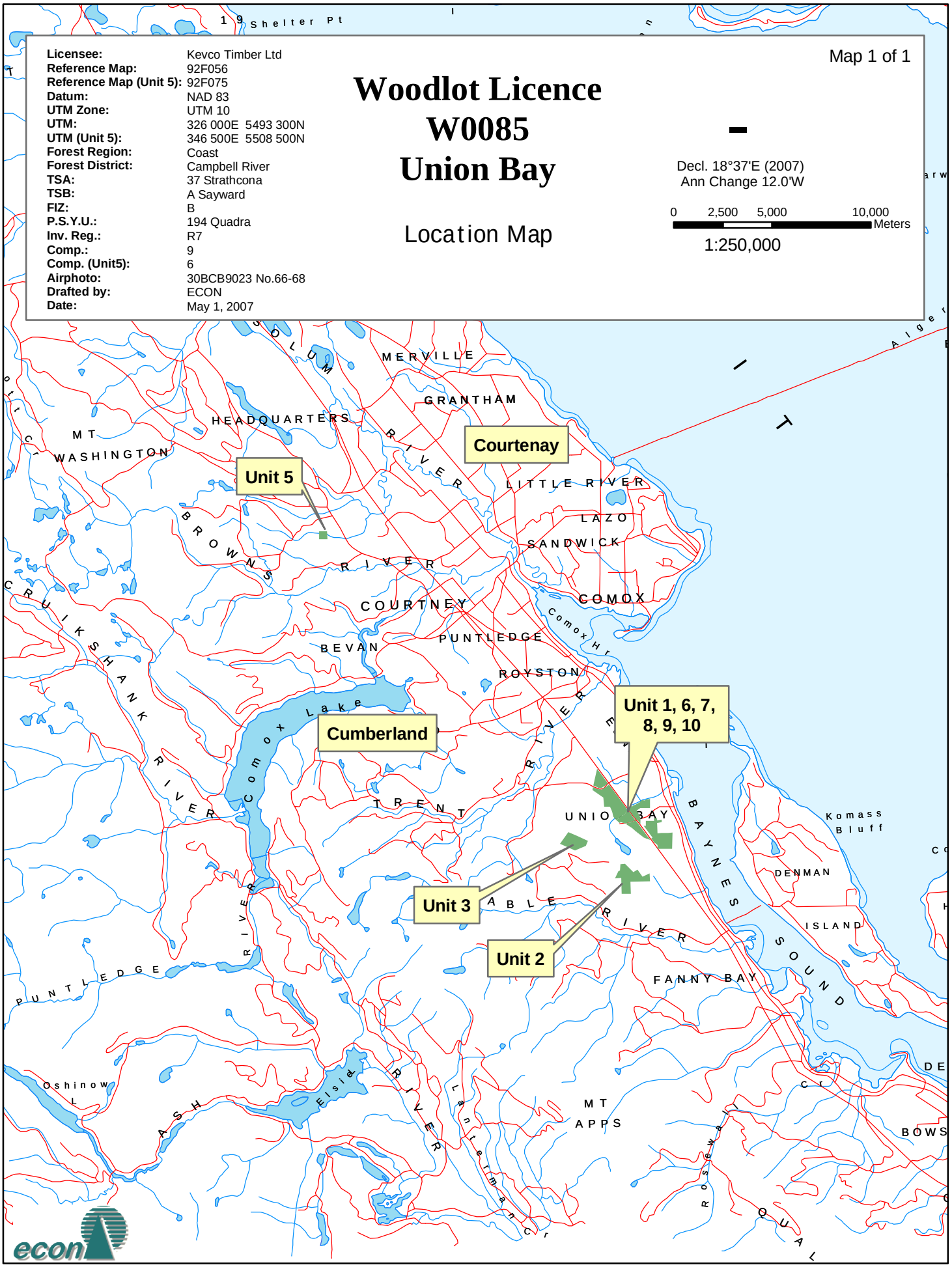
- Ensure that forest practices do not damage or render ineffective a resource feature.

****

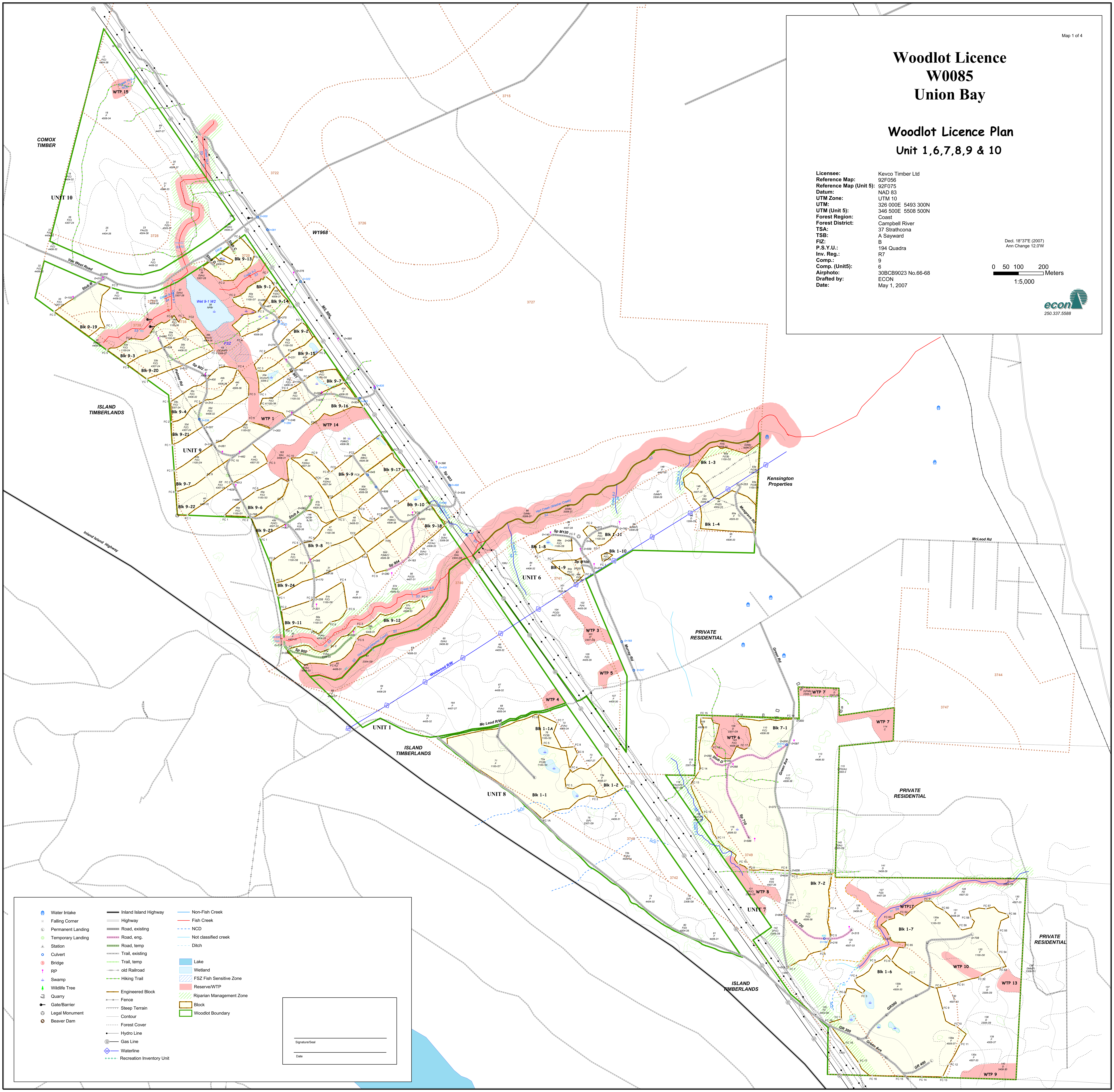
Note: Only the performance requirements in Part 3 (Practice Requirements) of the WLPPR for which an alternative can be proposed are shown in this Woodlot Licence Plan. The remaining performance requirements in Part 3 are not shown, nor are the performance requirements in Part 4 (Roads).

APPENDICES

Appendix 1: Woodlot Licence Plan Location Map


Licensee: Kevco Timber Ltd
Reference Map: 92F056
Reference Map (Unit 5): 92F075
Datum: NAD 83
UTM Zone: UTM 10
UTM: 326 000E 5493 300N
UTM (Unit 5): 346 500E 5508 500N
Forest Region: Coast
Forest District: Campbell River
TSA: 37 Strathcona
TSB: A Sayward
FIZ: B
P.S.Y.U.: 194 Quadra
Inv. Reg.: R7
Comp.: 9
Comp. (Unit5): 6
Airphoto: 30BCB9023 No.66-68
Drafted by: ECON
Date: May 1, 2007
Woodlot Licence
W0085
Union Bay
Location Map
Map 1 of 1
Decl. 18°37'E (2007)
Ann Change 12.0'W
0 2,500 5,000 10,000 Meters
1:250,000
Unit 5
Courtenay
Cumberland
Unit 1, 6, 7, 8, 9, 10
Unit 3
Unit 2
Shelter Pt
MERVILLE
GRANTHAM
HEADQUARTERS
MT WASHINGTON
BROWNS RIVER
LITTLE RIVER
LAZO
SANDWICK
COMOX
COURTNEY
PUNTLEDGE
BEVAN
ROYSTON
Comox Lake
CRUIKSHANK RIVER
TRENT RIVER
UNION BAY
BAYNES SOUND
Komass Bluff
DENMAN ISLAND
ABLE RIVER
FANNY BAY
PUNTLEDGE
Oshinow L
ASH
Elsie
MT APPS
econ

Appendix 2: Woodlot Licence Plan Map – 1 of 4 (Crown)



Map 1 of 4
Woodlot Licence
W0085
Union Bay
Woodlot Licence Plan
Unit 1,6,7,8,9 & 10
Licensee: Kevco Timber Ltd
Reference Map: 92F056
Reference Map (Unit 5): 92F075
Datum: NAD 83
UTM Zone: UTM 10
UTM: 326 000E 5493 300N
UTM (Unit 5): 346 500E 5508 500N
Forest Region: Coast
Forest District: Campbell River
TSA: 37 Strathcona
TSB: A Sayward
FIZ: B
P.S.Y.U.: 194 Quadra
Inv. Reg.: R7
Comp.: 9
Comp. (Unit5): 6
Airphoto: 30BCB9023 No.66-68
Drafted by: ECON
Date: May 1, 2007
Decl. 18°37'E (2007)
Ann Change 12.0'W
0 50 100 200 Meters
1:5,000
econ
250.337.5588
COMOX TIMBER
UNIT 10
UNIT 9
UNIT 6
UNIT 1
UNIT 8
UNIT 7
ISLAND TIMBERLANDS
ISLAND TIMBERLANDS
ISLAND TIMBERLANDS
PRIVATE RESIDENTIAL
PRIVATE RESIDENTIAL
PRIVATE RESIDENTIAL
Kensington Properties
W1968
Inland Island Highway
Van West Road
McLeod Rd
WTP 15
WTP 14
WTP 1
WTP 3
WTP 4
WTP 5
WTP 6
WTP 7
WTP 8
WTP 9
WTP 10
WTP 13
WTP17
Blk 9-13
Blk 9-1
Blk 9-14
Blk 9-19
Blk 9-2
Blk 9-3
Blk 9-20
Blk 9-15
Blk 9-7
Blk 9-16
Blk 9-4
Blk 9-21
Blk 9-17
Blk 9-9
Blk 9-10
Blk 9-22
Blk 9-6
Blk 9-23
Blk 9-18
Blk 9-8
Blk 9-24
Blk 9-11
Blk 9-12
Blk 1-3
Blk 1-4
Blk 1-11
Blk 1-10
Blk 1-8
Blk 1-9
Blk 1-1A
Blk 1-1
Blk 1-2
Blk 7-1
Blk 7-2
Blk 1-7
Blk 1-6
Water Intake
Falling Corner
Permanent Landing
Temporary Landing
Station
Culvert
Bridge
RP
Swamp
Wildlife Tree
Quarry
Gate/Barrier
Legal Monument
Beaver Dam
Inland Island Highway
Highway
Road, existing
Road, eng.
Road, temp
Trail, existing
Trail, temp
old Railroad
Hiking Trail
Engineered Block
Fence
Steep Terrain
Contour
Forest Cover
Hydro Line
Gas Line
Waterline
Recreation Inventory Unit
Non-Fish Creek
Fish Creek
NCD
Not classified creek
Ditch
Lake
Wetland
FSZ Fish Sensitive Zone
Reserve/WTP
Riparian Management Zone
Block
Woodlot Boundary
Signature/Seal
Date

Appendix 3: Woodlot Licence Plan Map – 2 of 4 (Private)

Woodlot Licence W0085 Union Bay

Woodlot Licence Plan

Unit 2

Licensee:	Kevco Timber Ltd
Reference Map:	92F056
Datum:	NAD 83
UTM Zone:	UTM 10
UTM:	360 000E 5491 500N
Forest Region:	Coast
Forest District:	Campbell River
TSA:	37 Strathcona
TSB:	A Sayward
FIZ:	B
P.S.Y.U.:	194 Quadra
Inv. Reg.:	R7
Comp.:	10
Airphoto:	30BCB9023 No.66-68
Drafted by:	ECON
Date:	May 1, 2007

Decl. 18°37'E (2007)
Ann Change 12.0'W

0 50 100 200 Meters
1:5,000

econ
250.337.5588

UNIT 2

PRIVATE

ISLAND TIMBERLANDS

COMOX TIMBER

Block 2-1

9914 FH(C) 1102-35
994 FC(H) 6417-35
995 FCH 6417
9910 FC(H) 4317-35
9913 FH(C) 1102-35
999 F 102-35
9912 FH(C) 1102-35
9911 FH(C) 1102-30
998 F(HC) 1103-30
992 FC(H) 4317-35
991 FC(H) 5517-35
997 FH(C) 1103-34
PIT

Creek 2-1 S4
Creek 2-2 S4
Creek 2-3 S6

- Water Intake
- Falling Corner
- Permanent Landing
- Temporary Landing
- Station
- Culvert
- Bridge
- RP
- Swamp
- Wildlife Tree
- Quarry
- Gate/Barrier
- Legal Monument
- Beaver Dam
- Inland Island Highway
- Highway
- Road, existing
- Road, eng.
- Road, temp
- Trail, existing
- Trail, temp
- old Railroad
- Hiking Trail
- Non-Fish Creek
- Fish Creek
- NCD
- Not classified creek
- Ditch
- Engineered Block
- Fence
- Steep Terrain
- Contour
- Forest Cover
- Hydro Line
- Gas Line
- Waterline
- Recreation Inventory Unit
- Lake
- Wetland
- FSZ Fish Sensitive Zone
- Reserve/WTP
- Riparian Management Zone
- Block
- Woodlot Boundary

Signature/Seal

Date

Appendix 4: Woodlot Licence Plan Map – 3 of 4 (Private)

Woodlot Licence
W0085
Union Bay

Woodlot Licence Plan

Unit 3

Licensee:	Kevco Timber Ltd
Reference Map:	92F056
Datum:	NAD 83
UTM Zone:	UTM 10
UTM:	360 000E 5491 500N
Forest Region:	Coast
Forest District:	Campbell River
TSA:	37 Strathcona
TSB:	A Sayward
FIZ:	B
P.S.Y.U.:	194 Quadra
Inv. Reg.:	R7
Comp.:	10
Airphoto:	30BCB9023 No.66-68
Drafted by:	ECON
Date:	May 1, 2007

Decl. 18°37'E (2007)
Ann Change 12.0'W

0 50 100 200 Meters
1:5,000

econ
250.337.5588

UNIT 3

ISLAND TIMBERLANDS

Block 3-1A
Block 3-1B
Block 3-2A
Block 3-2B

ML 100
ML 200
ML 201
ML 400
ML 500
McLeod M/L

NCD

- Water Intake
- Falling Corner
- Permanent Landing
- Temporary Landing
- Station
- Culvert
- Bridge
- RP
- Swamp
- Wildlife Tree
- Quarry
- Gate/Barrier
- Legal Monument
- Beaver Dam

- Inland Island Highway
- Highway
- Road, existing
- Road, eng.
- Road, temp
- Trail, existing
- Trail, temp
- old Railroad
- Hiking Trail
- Non-Fish Creek
- Fish Creek
- NCD
- Not classified creek
- Ditch

- Engineered Block
- Fence
- Steep Terrain
- Contour
- Forest Cover
- Hydro Line
- Gas Line
- Waterline
- Recreation Inventory Unit

- Lake
- Wetland
- FSZ Fish Sensitive Zone
- Reserve/WTP
- Riparian Management Zone
- Block
- Woodlot Boundary

Signature/Seal

Date

Appendix 5: Woodlot Licence Plan Map – 4 of 4 (Crown)

Map 4 of 4

Woodlot Licence
W0085
Union Bay

Woodlot Licence Plan

Unit 5

Licensee:	Kevco Timber Ltd
Reference Map:	92F056
Datum:	NAD 83
UTM Zone:	UTM 10
UTM:	346 000E 5508 500N
Forest Region:	Coast
Forest District:	Campbell River
TSA:	37 Strathcona
TSB:	A Sayward
FIZ:	B
P.S.Y.U.:	194 Quadra
Inv. Reg.:	R7
Comp.:	6
Airphoto:	30BCB9023 No.66-68
Drafted by:	ECON
Date:	May 1, 2007

Decl. 18°37'E (2007)
Ann Change 12.0'W

0 25 50 100 Meters
1:5,000

econ
250.337.5588

- Falling Corner
- Permanent Landing
- Temporary Landing
- Station
- Culvert
- Bridge
- RP
- Swamp
- Wildlife Tree
- Quarry
- Gate/Barrier
- Legal Monument
- Water Intake
- Beaver Dam
- Inland Island Highway
- Highway
- Road, existing
- Road, eng.
- Road, temp
- Trail, existing
- Trail, temp
- old Railroad
- Hiking Trail
- Non-Fish Creek
- Fish Creek
- NCD
- Not Classified Creek
- Ditch
- Engineered Block
- Fence
- Steep Terrain
- Contour
- Forest Cover
- Hydro Line
- Gas Line
- Waterline
- Recreation Inventory Unit
- Lake
- Wetland
- FSZ Fish Sensitive Zone
- Reserve/WTP
- Riparian Management Zone
- Block
- Woodlot Boundary

Signature/Seal

Date

Browns Rd
0+000
Woodlot M/L
Br 100
BRM103
Br 200
Br 210
BRM 103B
UNIT 5
Jackpot Cr
S3
7
6 F(H) 4407-31
9 FH(D) 5505-36
4 FHD 4507-38
5 D 3308-24
8 D 3308-26
11 FD(H) 4408-35
10 F(H) 4407-31
12 FHD 4407-31
13 F 4505-38
14 D(H) 3308-22
2 F 4407-31
15 F 4407-32
1 F 4407-32
3 F(H) 4407-33

APPENDIX 6: ALTERNATIVE STOCKING STANDARDS

Table: A

ADMINISTRATION			
Vancouver Forest Region	**Campbell River Forest District**	**Licensee: Kevco Timber Ltd.**	**Woodlot Licence #W0085**	**15.October, 2007**

ID #	BEC		Preferred Species						Acceptable Species								Stocking (w/s)			Min Inter Tree Dist (m)	Regen Delay	FG Date	Tree Ht > Brush (min %)	Post Spacing Density		Comments:
	Zone & variant	Site Series	1	Ht (min)	2	Ht (min)	3	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	
A	CWHxm	01/04	Fd	3.0					Pw[5]	2.5	Hw[8]	2.0	Cw	1.5	Lw[9]	1.5	900	500	400	2.0	3	12	150	500	1500	None – Zonal site
B	CWHxm	02	Fd	2.0					Pl	1.25	Pw[5]	2.5					400	200	200	2.0	3	12	150	200	800	Avoid logging – xeric site, shallow soils
C	CWHxm	03	Fd	2.0					Cw	1.0	Pw[5]	2.5	Lw[9]	1.5	Pl[6]	1.25	800	400	400	2.0	3	12	150	400	1200	None
D	CWHxm	05/07	Cw	2.0	Fd	4.0			Bg	3.5	Pw[5]	2.5					900	500	400	2.0	3	12	150	500	1500	None
E	CWHxm	06	Fd	3.0	Cw	1.5	Hw	2.0	Pw[5]	2.5							900	500	400	2.0	6	14	150	500	1500	None
F	CWHxm	08/09[1]	Cw	2.0	Bg	3.5			Ss[7]	4.0							900	500	400	1.5	3	12	150	500	1500	Floodplain - medium/high bench
G	CWHxm	10	Act	4.0	Dr[4]	4.0	Mb[4]	4.0									800	400	400	1.0	3	12	150	400	1200	Floodplain - low bench
H	CWHxm	11[1]	Cw	1.0					Pl[1]	1.25							400	200	200	1.0	3	12	150	200	800	Avoid logging – wet and very poor
I	CWHxm	12[1]	Cw	1.0					Hw[4]	1.5	Pw[5]	2.5	Ss[7]	1.5			650	350	300	1.0	3	12	150	350	1200	Organic soils - avoid ground based equipment
J	CWHxm	13/14[1,2]	Bg	3.5	Cw	2.0	Fd[1]	4.0	Ss[7, 9]	4.0							650	350	300	1.0	3	12	150	350	1200	Fluctuating water table
K	CWHxm	15[1,2]	Cw	2.0					Ss[7, 9]	4.0							650	350	300	1.0	3	12	150	350	1200	Fluctuating water table
L	CWHxm	01/06	Dr[4]	3.0	Mb	3.0											1200	1000	800	1.5	3	12	150	800	1500	High density deciduous management
M	CWHxm	05/07/ 08/09[1]	Act	4.0	Dr[4]	4.0	Mb	4.0									1200	1000	800	1.5	3	12	150	800	1500	High density deciduous management
N	CWHxm	12/13/14[1,2] /15[1,2]	Act	4.0	Dr[4]	4.0	Mb	4.0									900	500	400	1.0	3	12	150	500	1500	High density deciduous management
O	CWHxm	01/04/06	Cw	1.5	Pw[5]	2.5			Fd[3]	3.0	Hw[8]	2.0	Lw[9]	1.5			900	500	400	2.0	3	12	150	500	1500	Alternate species root rot treatment
P	CWHxm	03	Cw	1.0	Pw[5]	2.5			Fd[3]	2.0	Pl	1.25	Lw[9]	1.5			800	400	400	2.0	3	12	150	400	1200	Alternate species root rot treatment
Q	CWHxm	02	Pw[5]	2.5					Pl[6]	1.25	Fd[3]	2.0					400	200	200	2.0	3	12	150	200	800	Avoid logging – xeric site, shallow soils
R	CWHxm	05/07	Cw	2.0	Pw[5]	2.5			Fd[3]	4.0	Bg[3]	3.5					900	500	400	2.0	3	12	150	500	1500	Alternate species root rot treatment
S	CWHxm	08/09	Cw	2.0					Bg[3]	3.5	Ss[3, 7]	4.0					900	500	400	1.5	3	12	150	500	1500	Alternate species root rot treatment
T	CWHxm	11	Cw	1.0					Pl[3, 6]	1.25							400	200	200	1.0	3	12	150	200	800	Alternate species root rot treatment
U	CWHxm	12	Cw	1.0	Pw[5]	2.5			Hw[3]	1.5	Ss[7]	1.5					650	350	300	1.0	3	12	150	350	1200	Alternate species root rot treatment
V	CWHxm	13/14[2]	Cw	2.0					Bg[3]	3.5	Fd[3]	4.0	Ss[7]	4.0			650	350	300	1.0	3	12	150	350	1200	Alternate species root rot treatment

Foot Notes

1 Elevated microsites are preferred
2 These sites represent areas with strongly fluctuating water tables. They are often found as mosaics in combination with other sites. Elevated microsites are preferred, either mechanical or natural
3 Bg and Fd are not acceptable within 10 m of Fd/Bg second growth stumps,
4 Avoid gleyed soils and in frost pockets
5 Pw must be free of blister rust within 10 cm of the stem and be pruned as per ministry guidelines or be blister rust resistant stock (≥ 50% resistance). Pw may occupy 5% on all sites except sites 04 & 05 where 20% will be the upper limit of the Free-Growing composition. When used for root rot treatment no limit on percent composition is set.
6 Restricted to nutrient-very-poor sites
7 Risk of weevil damage, use resistant stock where possible. Ss will not exceed 20% of the free growing stand on site series or 5% of the free growing stand on 11, 12 13, 14, & 15 site series on a dispersed basis. Clumps not to exceed 0.1ha in size.
8 Hw is not acceptable on site series 04. The proportion of the free-growing stand comprised of Hw will not exceed 20%.
9 Larch (Lw) will be used as an alternative species in W0085 in site series 03 and 04 only with approval from CRFD as more field data becomes available or as MOFR policy provides clearance.

Stocking Standards - General Comments

This table has been developed from the *Reference Guide for FDP Stocking Standards* dated December 11, 2002 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 - K are the general stocking standards. Sections L - N are the deciduous stocking standards and sections O - V apply to sites affected by root rot.

'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'; floodplain site series or sites with strongly fluctuating water tables 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.

A limited number of scattered deciduous trees will be tolerated on all conifer plantations, to provide a nurse crop, promote nutrient cycling or for general biodiversity objectives. Allow up to 50 sph as deciduous ghost trees during surveys on all sites such that these stems have no impact on the free growing status of sampled trees. Where these deciduous trees are within 10m of each other they will not be accepted as dispersed ghost trees due to increased competitive density effects. Such deciduous stems in question will impact the free growing status of sample trees.

The minimum inter-tree spacing is generally reduced to 1.5 m under the following site-specific 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

Recommended Regime: The product objective is to manage for high quality knot-free sawlogs on a 40 - 50 year rotation. 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 prune the crop trees early and continue density regulation treatments approx. 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

For salvage of scattered windthrow or root rot mortality, openings of up to 0.1 ha in size are acceptable, not requiring pre-harvest mapping, associated regeneration and requirements to establish a Free Growing stand. No long-term impact on timber yield is expected as the subject areas are likely to regenerate naturally or will be planted concurrent with harvest in adjacent areas

Table B: Stocking Information for Specified Areas

Target from Table A standards	Layer*	Stocking**		
		Target pa	MIN pa	MIN p
(stems/ha)		(well-spaced/ha)		
900 - 1200	1	400	200	200
	2	500	300	250
	3	700	400	300
	4	900	500	400
400 - 800	1	300	150	150
	2	400	200	200
	3	600	300	300
	4	800	400	400

*Stand Layer definition

Tree Layer 1	Mature	trees >= 12.5 cm dbh
Tree Layer 2	Pole	trees 7.5 cm to 12.4 cm dbh
Tree Layer 3	Sapling	trees >= 1.3 m height to 7.4 cm dbh
Tree Layer 4	Regeneration	trees < 1.3 m height

** pa - preferred and acceptable species p - preferred species

Preferred and acceptable species and "Target from Table A standards' are as specified in Table A by biogeoclimatic ecosystem classification (BEC) site series. Preferred and acceptable species and "Target from Table A standards' are as specified in Table A by biogeoclimatic ecosystem classification (BEC) site series

II. SUPPLEMENTAL INFORMATION REQUIRED TO BE SUBMITTED IN SUPPORT OF THE PROPOSED WOODLOT LICENCE PLAN

1. REVIEW AND COMMENT

ADVERTISING

A copy of the advertisement placed in the Comox Valley Record on May 16th and 18th and in the Comox Valley Echo on May 15th and 18th. Copies of the advertisements are included in this Supplemental Information section.

REFERRALS

This plan has been referred directly to the First Nations listed below and indirectly (via the MoFR) to the Guide-Outfitter listed below.

Campbell River First Nation
1400 Weiwaikum Road
Campbell River, BC, V9W 5W8
Ph: 286-6949, Fax: 287-8838

Cape Mudge First Nation
PO Box 220
Quathiaski Cove, BC, V0P 1N0
Ph: 285-3316, Fax: 285-2400

Comox First Nation
3320 Comox Road
Courtenay, BC, V9N 3P8
Ph: 339-4545, Fax: 339-7053

Hamatla Treaty Society
1441-Old Island Highway
Campbell River, BC, V9W 2E3
Ph: 287-9460, Fax: 287-9469

Homalco First Nation
1218 Bute Crescent
Campbell River, BC, V9H 1G5
Ph: 923-4979, Fax: 923-4987

Qualicum First Nation
5850 River Road
Qualicum Beach, BC, V9K 1Z5
Ph: 757-9337, Fax: 757-9898

Sliammon First Nation
RR #2 Sliammon Road
Powell River, BC, V8A 4Z3
Ph: 830-1708, Fax: 830-1709

Guide-Outfitter certificate holder #700396

COPY OF WRITTEN COMMENTS RECEIVED

Copies of all comments received are contained within this supplemental information section. All comments received were reviewed by Erik Holbek, FIT and revisions made to the plan based on these comments have been reviewed by the licensee and Wolfram Wollenheit, RPF. A summary of comments received is contained within the cover letter accompanying this submission.

REVISIONS MADE AS A RESULT OF COMMENTS RECEIVED

All revisions made in this final submission are summarized in the cover letter accompanying this submission.

2. CONSULTATION WITH FIRST NATIONS

Documentation of all communications with First Nations regarding this plan, including copies of the 'First Nations Information Sharing Checklist' provided by the Campbell River Forest District, meeting minutes, phone records, and emails are included within this Supplemental Information section.

3. EXEMPTIONS

N/A

4. RATIONALE IN SUPPORT OF PROPOSED ALTERNATIVE PERFORMANCE REQUIREMENTS

STOCKING STANDARDS

Alternative stocking standards are proposed given the location and the licensee's full intent to facilitate intensive forest management and to improve site productivity and species/product diversity. Additionally, existing standards with respect to the use of broadleaf species lack measurable and enforceable standards for implementation and are therefore defined further within the alternative stocking standards. Full details and listing of the stocking standards are provided in Appendix 3.

All areas of harvest will undergo pre-harvest mapping as per Section 33 of the *Woodlot Licence Planning and Practices Regulation.* At that stage the fundamental decision will be made if either conifer or a broadleaf standard will apply and the Standard Unit ID will be assigned.

Based on past experience, the stocking standards for the eco sites 12, 13, 14 and 15 have been modified to address the extreme water table regime in the Union Bay Crown portion of the woodlot licence. These sites are underlain by hardpan and are generally slow draining. The water table is high in the winter months and drops rapidly throughout the summer. These characteristics result in areas with productive micro sites on hummocks and dispersed non-productive areas in between. Timber harvesting causes the water table to rise so that approximately 30 % of these site series need to be considered dispersed non-productive ground for the purpose of establishing regeneration. Planting must be restricted to higher ground as planting in depressions will result in drowning of the seedlings. To address these issues, which are considered unique to the woodlot, stocking standards for these sites have been reduced by approximately 30% and the minimum inter-tree distance has been reduced to 1.0 m. Stocking standards have not been reduced below current or historic site occupancy levels.

Forest health concerns raises additional issues as to the appropriateness of the defaults in areas where root rot (e.g. *Phellinus weirii)* impacts the regeneration and long-term health and productivity of the preferred species. The proposed alternative stocking standards promote healthy stands that protect adjacent resources and values For example on infected zonal sites (01) adjacent to a S4 creek or recreational trail where stumping is not appropriate to control sediment or to maintain visual appearance. In these cases the establishment of Douglas-fir (preferred) may prove difficult and unsuited in the long-term due to re-infection.

The Chief Forester's stocking standards indicate black cottonwood (Act), red alder (Dr) and bigleaf maple (Mb) as being a productive, reliable and feasible regeneration option on several site series within the CWH xm1. The attached Alternative Stocking Standards will be used and includes the standards for both pure broadleaf stands and mixed woods regeneration. The use of broadleaf is proposed in consideration of the Chief Foresters memorandum dated August 22nd, 2000 and the supporting note 'Common Principles for the Management of Red Alder within the Coast Forest Region' dated August, 2004. The management for broadleaf species is proposed on a limited scale and is consistent with the management assumptions adopted in the last Annual Allowable Cut (AAC) calculation (see Management Plan dated: December 15th, 1997).

The broadleaf standards are also supported by the following research literature:

- Hibbs *et al.* The Biology and Management of Red Alder (1994),
- E.B. Petersons *et al.* FRDA Report 250 – Black Cottonwood and Balsam poplar manager's handbook for British Columbia (1996).
- L. Sigurdson *et al.* 2nd draft report on Weyerhaeuser's Red Alder Management Practices (1998),
- P.J. Courting *et al.* Forest Research Extension Note 016 - Red Alder management trials in the Vancouver Forest Region (2002).

The minimum density post-spacing shown corresponds to the values recommended in the Establishment to Free-growing Guidebook for the VFR– i.e. the same as the minimum-stocking standard for conifer stands.

Higher stocking is noted for the deciduous stands to ensure self-pruning and may include a conifer component. The maximum density post-spacing has been increased to allow for two-stage spacing entries in order to manage snow press, blow-down risks and provide the opportunity to capture the small-diameter resource.

The minimum height criterion for deciduous species is based on the tallest conifer standard of the particular site series since the listed hardwoods are at least as rapid growing as their conifer counterpart. If a cedar or Sitka spruce understory is planted in addition to the full hardwood stocking, then the natural pruning of the alder would be enhanced. However, the stand's status will only be measured using the broadleaf standards. The removal of the alder at harvest age is operationally possible, while leaving a fully stocked, semi-mature conifer pole stand behind.

Damage criteria for broadleaf species have not been established. No significant insect or disease outbreaks have been recorded for existing alder trials to date. General free-growing criteria will be adopted and damage assessed by the survey technician at the time of the survey. Well-spaced stems will be of good form, health and vigour. Species-specific damage criteria will be used upon development.

The stocking standards for specified areas are consistent with the default, with one exception. In the case of deciduous stands established under this WLP where initial stocking densities will be 1000-1200 sph (see appendix 3 alternative stocking standards), and where these stands may be in the future subject to commercial thinning. These represent a reduction in the targets and minimums for tree layer 1 as compared to the default standards. The reason for this is that the default standards have been developed for conifer stands, which have different crown characteristics from deciduous species. Under deciduous management regimes, while initial densities will be higher to promote self-pruning and encourage stem development, lower target thinning densities in managed stands may be applied during later stages of the rotation.

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