

WOODLOT LICENCE W1466

WOODLOT LICENCE PLAN #1

First Term
2008 to 2018

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I. CONTENT FOR A WOODLOT LICENCE PLAN (WLP)

PLAN AREA

☒ This plan covers the entire Woodlot Licence (WL) area.

Woodlot Licence W1466 (W1466) is composed of the Puntledge unit of approximately 400 hectares (ha) and the Texada unit of 118 ha, covering a total estimated area of 526 ha. The Schedule 'B' land (Puntledge unit Provincial Forest Crown) is located east of Courtenay, BC between the Puntledge and the Browns Rivers, north and west of Forbidden Plateau Road. The Schedule "A" land (Texada unit Forest Private) is comprised of two separate property parcels located on Texada Island, District Lots (DL) 306 and 284 east of Gillies Bay.

Vehicle access to the Puntledge unit is via Johnson Road, off Forbidden Plateau Road and the Piercy Road connector to the Inland Island highway. Vehicle access to the Texada unit is via the High Road. DL 284 is located at the intersection of Gilles Bay/High Road and DL 306 is approximately 3 km north. The woodlot units are outlined on the WLP maps in Appendix III.

MAP AND INFORMATION

The WLP maps include (information required in section 8(1) of the Woodlot Licence Planning and Practice Regulation (WLPPR)) forest cover; topography; location of streams; wetlands; terrain; resource inventory; fish and fish habitat; riparian classification of streams and wetlands; identification of fish streams; biogeoclimatic zones and subzones; public utilities; existing roads; community watersheds; contiguous areas of sensitive soils; permanent barricades to restrict vehicle access; and private property within or adjacent to the WL area.

The information required to be addressed in Section 8(1) WLPPR, including additional details (not entirely included on maps), are noted as follows:

Biogeoclimatic zones and subzones:

The WL area, both crown and private units, are located within the Coastal Western Hemlock zone/ extra dry maritime (CWHxm) Biogeoclimatic Subzone (BEC). While the variant is mapped as "1" separate ecosystems have not yet been described by ecologists to distinguish a site level difference between variant 1 and 2.

Resource Management Zones, Landscape Units or Sensitive Areas:

Three land use plans cover the area of W1466, including the Vancouver Island Summary Land Use Plan ¹(VILUP), the Comox Valley Official Community Plan (CVOCP) and the Texada Island Official Community Plan (TOCP).

The Summary of the VILUP has been given a higher level plan status by government and identifies Resource Management Zone (RMZ) #33 (includes the Puntledge unit of W1466) as a General Management Zone. There is no order establishing objectives for RMZ #33. The overall management direction for this zone is ***"second growth timber values and particular suitability for enhanced silviculture and growth and yield management; recreation/scenery and tourism opportunities associated with intensively managed, roaded resource lands; high fish and wildlife values; biodiversity conservation/restoration is recommended with emphasis on***

¹ Endorsement of the VILUP summary February 2000.

retention, and where required, active restoration of mature and old seral forest attributes and age classes". In addition forest management strategies should promote "retention of scattered veteran trees, wildlife tree patches, diversity of tree species and ages, and partial cutting silvicultural systems".

The VILUP has stated objectives related to retention of old forest attributes, seral stage distribution and diversity. This WLP provides results and strategies that are connected to the sustainable growth rate calculation derived within the Management Plan 2, to meet the VILUP objectives.

The community values described by forestry resources in both the CVOCP and the TOCP are compatible with the practices proposed in this WLP. The forest resources in the OCP's are valued as natural green space to counter density development of other land parcels.

There is no order establishing objectives for the RMZ covering the Texada unit.

Wildlife Habitat Areas:

There are no known Wildlife Habitat Areas (WHA) within W1466.

Scenic Areas:

There are no known Scenic Areas within W1466.

Ungulate Winter Ranges:

There are no known Ungulate Winter Ranges within W1466.

Community Watersheds:

The Puntledge unit of the WL area is within the Puntledge Community Watershed, having a community watershed code 920.054, and is 5,8590.5 hectares in size. The Puntledge Community Watershed is made up of 11 subwatersheds and Comox Lake. The lake is the primary source of water in the watershed and is 9 km in length, 200 m deep, and at a elevation of 134 m above-sea-level. The watershed receives 1500-2800 mm of precipitation per yr.² A majority of the woodlot area is located within one of the subwatersheds, the Browns River watershed.

A watershed assessment has being completed by the regional district in June 2006. Using this current information water movement from the WL moves in two directions:

- A) 18 hectares of the woodlot flow toward the Puntledge River;
- B) 382 hectares of the woodlot flow toward the Browns R. and are located in the Browns River subwatershed.

The significance of this information is that, while all areas of the woodlot are within the Puntledge Community Watershed, only 18 ha contribute to the water supply. This is because the lower pump station is used only a couple of weeks a year, and the remaining 382 ha of the woodlot contributes water supply during that reduced period.

The Texada units of the woodlot licence area are not contained within or adjacent to a community watershed.

Fisheries Sensitive Watersheds:

There are no known Fisheries Sensitive Watersheds within W1466.

² CSRD Watershed Assessment, 2006.

Community and domestic water supply intakes that are licensed under the Water Act and any related water supply infrastructures:

Consistent with Woodlot Licence Planning and Practices Regulation 8(1)(l), there are no community and domestic water supply intakes that are licensed under the water Act and any related water supply infrastructures within the *woodlot licence plan area*.

In support of the WLP, with respect to water resources, the following information for areas within proximity of the woodlot licence plan area are documented:

The Puntledge River does contain a number of licensed water intakes including 4 for the regional district waterworks authority (2 licences and 2 applications) identified on the WLP Map. The Puntledge River intake locations are outside the woodlot licence plan area by approximately 450 meters or greater. There are several other water licences that are on the Puntledge River and further downstream of the woodlot.

The Browns River contains four licensed water intakes and all are downstream of the woodlot area. The Browns River is the north boundary of the woodlot for a distance of approximately 1200 meters.

Ball Park Creek, Texada Island, is called a minor watershed in the TOCP and has no intended classification as a community watershed. There is one licensed water intake by the Gilles Bay Improvement District. A stream on the west boundary of WL DL 306 connects to Ball Park Creek.

Staaf Creek crosses WL DL 284. There are two licenced water intakes for domestic users outside the woodlot licence plan area.

A Water Licence Report Table for the streams above is available from the Ministry of Environment Watershed Division and identifies the water licence number, the licensee, purpose and volume (See Appendix V).

There are no known community or domestic water supply intakes that are licensed under the Water Act and any related water supply infrastructures inside the boundaries of either the Puntledge or Texada Units. The locations of all Rural Residential lots are outlined on the WLP map, where it is assumed that ground water wells provide domestic water supplies to each household.

Contiguous Areas of Sensitive Soils:

*“sensitive soil” means an area with one or both of the following:
a slope greater than 60% or indicators of potential slope instability.³*

Known areas of sensitive soils are indicated on the WLP Map in Appendix III. The sensitive soils have been identified using regional soil maps and field work. More areas are expected to be added as the soils field work covers more of the WL area. Slopes over 60 percent (highest stability risk) are located along the Browns River - Puntledge unit. The edge of the Browns River is vertical for 30 to 50 meters in several locations along the north boundary of the woodlot.

Temporary or permanent barricades that restrict vehicle access:

Temporary or permanent barriers to restrict vehicle access are identified on the WLP Map in Appendix III. Austin Powder Inc. is the holder of a narrow lease along Johnson

³ WLPPR, Part 1, BC Reg 21/2004

Road for the purposes of explosive storage and movement. Most of the storage containers are on private forest land to the west. Johnson Road is the only vehicle access to the land area and Austin has installed a gate at the NE entrance to the Puntledge unit in order to restrict vehicle access.

The access to the east half of Texada unit DL 306 crosses private land which is gated (existing gate controlled by a third party) to restrict vehicle access, for property security.

Private property within or adjacent to the woodlot licence area:

The location of adjacent property owners, by ownership groups, Rural Residential⁴ and Resource owners (private or crown) are outlined on the WLP Map. There are a number of private property interests surrounding all three units of W1466, who have differing forest ownership objectives. Ongoing consultation occurs to ensure activities and treatments are co-ordinated between private and crown property interests.

Resource features other than wildlife habitat features and other features where the location must not be disclosed:

At the time of preparing this WLP Map, no resource features have been established within the WL area under the Government Actions Regulation. There were also no resource features within the WL area that were made “known” by the district manager under the regulations of the *Forest Practices Code of BC Act*.

A recreational agreement exists to manage the Puntledge Triangle Trail located on the WLP Map. The agreement, between Huock Forests and the Ministry of Tourism, Sport and the Arts, provides for the joint management of the Puntledge Triangle Trail, a portion of which is within W1466⁵. The current Agreement expires in 2013.

Licence of Occupation adjacent to woodlot licence area:

A commercial operation for explosives storage facilities and manufacture of explosives purposes is located adjacent to the northern portion of the woodlot under Licence of Occupation No. 106125. The Licensee is Austin Powder Ltd. The licensee of the commercial operation has committed to modifying the commercial operations to meet the operations of the woodlot.

⁴ Rural residential is a land use designation within the CVOCP and the TOCP.

⁵ Puntledge Triangle Trail Recreation Site/Trail Agreement. 2003.

AREAS WHERE TIMBER HARVESTING WILL BE AVOIDED

There are no specific areas where timber harvesting will be avoided on W1466.

AREAS WHERE TIMBER HARVESTING WILL BE MODIFIED

There are areas where timber harvesting will be modified including:

Archaeological Assessment Area:

The 100 meter wide zone adjacent to the south side of the Browns River is described as the Archaeological Assessment Area, contains the majority of the moderate potential Veteran CMT's in W1466. Other scattered area's of moderate potential veteran CMT's will be assessed within area's identified on the 2007 Millennia Research Limited mapping for W1466. Harvesting will be modified to the degree necessary to protect identified cultural heritage resources. The resources will be identified, by undertaking an Archaeological Inventory (AI) within areas having a moderate potential prior to initiating any future harvesting.

Wildlife Tree Retention Areas (WTRA):

Anchored WTRA will have harvest modified as described in the WTRA Strategy.

Recreation Trail:

Harvesting will be modified along the Puntledge Triangle Trail, consistent with the recreation agreement. An example of modification could include cutting all hazard trees within a 1.5 tree length distance from the trail for public and worker safety.

Riparian Management Areas:

Harvesting will be modified within the area of the Riparian Management Area's (RMA's). Unless exempted by the district manager, or the harvesting of a road clearing width is required, the WL holder will retain the post harvest stand structure noted in Table 1.

The retention level will be determined based on field assessments considering the site classification, species composition, age classes and wildlife values of stratified units where there is a potential to modify harvesting. It is expected that retention of residual trees will be highest for an S2-4 stream classification. Streams classified as S5/6 will have a standard of management to minimise debris transportation to lower reaches of the streams.

Retention levels by area description:

The WL holder will ensure that the required riparian forest cover retention is consistent with Table 1. For the purposes of forest health (root disease treatment) and windthrow abatement (or recovery) harvesting in the RMA will consider the results of a windthrow assessment and forest health survey.

The measurement for the determination of riparian retention requires a length in order to derive the percent basal area retained. For the purposes of measure, the greater of the RMZ area within the harvest block or RMZ area for 50 meters stream length, will be used to determine the basal area retained.

The percentage of the total basal area within the RMZ specified in Table 1 will be left as standing trees at the completion of harvesting:

Table 1: Basal Area retention by Riparian Class.

Riparian Class	Basal Area to be Retained Within Riparian Management Zone (%)	Management Intent	Retained Species ⁶
S1 streams	≥20	<u>Maintain Riparian and Wildlife values</u>	<u>Fd, Dr, Mb,</u> <u>Cw, Hw, Act,</u> <u>At, Ss, Pw</u>
S2 stream	≥20		
S3 stream	≥10		
S4 stream	0-10	<u>Maintain Stream bank integrity</u>	
S5 stream	0-10	<u>Minimise Debris Transportation</u>	
S6 stream			
All wetland classes	≥10	<u>Maintain RRZ, Wildlife Habitat, Coarse Woody Debris (CWD)</u>	

⁶ Tree species labels are listed within Appendix IIA footnotes section.

CONSERVING AND PROTECTING CULTURAL HERITAGE RESOURCES

The following strategy is proposed to conserve and protect cultural heritage resources that are the focus of a traditional use by an aboriginal people and of continuing importance to them. This strategy applies to cultural heritage resources (CHR) that are not protected under the **Heritage Conservation Act**. Huock Forests Ltd. (HF) the WL holder, is committed to carrying out forest practices at a time and in a manner that is unlikely to damage or harmfully alter CHR.

Consultation with First Nations (FN) to review plans and to participate in the information sharing process is included in section II. The Puntledge unit of W1466 is within the traditional territory of the K'omox, Campbell River, Cape Mudge, Homalco, Sliammon and Qualicum FN. The Texada unit is within the traditional territory of the Sliammon FN.

A strategy to conserve and protect the CHR on W1466 has and will continue to incorporate any existing⁷ or new information (when it becomes available) on CHR. Currently, the information provided by the MFR and FN has been based on general information and two Archaeological Overview Assessment's (AOA) on the Puntledge unit only.

Discussions with the K'omox FN is in progress and is expected to continue into the future, for the Puntledge unit. A Traditional Use Survey or Archaeological Impact Assessment will be completed within the Archaeological Assessment area south of the Browns river. Discussions with the Sliammon FN have been limited, due to the nature of the operations (no harvest activities in recent years) and the private forest land ownership for the Texada units.

There are no known Archaeological features on W1466⁸. The strategies and results for traditional plants, western red cedar and the steps necessary when new information on CHR becomes known are as follows:

Traditional Plants

Facilitating opportunities for FN to harvest and use plants for traditional use will require the following steps:

- Identify specific traditional use plants of continuing interest by local FN⁹.
- Where specific plants other than western red cedar trees are identified by the applicable FN, notification will be provided by the WL holder prior to timber harvesting activities on stands or sites likely to contain the traditional plants. The time frame for notification will be determined in consultation between FN's and HF, when specific plants are identified by FN's.

Traditional Use of Western Red Cedar

A common FN traditional use throughout the coastal region is the use of western red cedar. The opportunity for traditional use of western red cedar will continue on W1466 by utilising the following steps.

⁷ An Archaeological Overview Assessment was completed on WL 1466, Puntledge unit, in 1996 by ARCAS, Heather Pratt, for the Ministry of Forests, Campbell River Forest District and in 2007 by Millennia Research Limited.

⁸ Archaeology Branch, Ministry of Tourism, Sport and the Arts. July 2006.

⁹ When FN have identified a specific traditional use plant

- When requested by the applicable FN, a reasonable opportunity for traditional use of western red cedar trees for bark striping and monumental logs, (recognising there is a limited availability of monumental logs within W1466) will be made available.
- Western red cedar will be planted, where it is ecologically suited to any site, as a mixture with other preferred or acceptable trees species in order to build a future supply of trees.
- As part of the retention strategy for specified areas within W1466 western red cedar will be retained as a component of the stand structure. When available, reliable and feasible, western red cedar will also be retained within clearcut openings.
- HF is committed to involvement in any cedar strategies adopted by the local woodlot association.

New Information on CHR

All plans and activities will consider CHR and when field surveys indicate a potential traditional use, the location will be made available to local FN and the MFR.

- Any potential traditional use sites will be protected from alteration or disturbance, whenever practicable and feasible.
- If new information on CHR's become available, HF will contact the FN and endeavour to understand the concerns and ensure the CHR in question is protected and/or conserved wherever practicable and feasible.

WILDLIFE TREE RETENTION STRATEGY

The proportion of W1466 that is occupied by WTRA is specified in the “PERFORMANCE REQUIREMENTS” section of this plan. The performance requirement for the proportion of W1466 that is occupied by Wildlife Tree Retention (WTR) areas will not be less than 8 percent of the total woodlot area 526 ha. The minimum area of WTR will be achieved either as ecologically anchored stands of medium to high value wildlife tree's (WT's) or as dispersed stands or individual WT's. Only those trees or areas specifically identified and documented to meet the performance requirement of 8% are required to meet the WTR strategy. Other areas of the woodlot, although they also provide wildlife value are not required or restricted to meet the WTR requirement as per WLPPR s.52 (1) or this strategy.

There are no known identified wildlife on the woodlot and none has been observed to our knowledge (except for sightings of the Great Blue Heron). Documented use of wildlife on W1466 includes the Great blue heron, American dipper, Palliated Woodpeckers, birds, kinglets, frogs, black-tailed deer, wolf, owl, bear, cougar and Roosevelt elk. Although not yet identified on W1466, sightings and nests of Queen Charlotte Goshawks have been located within less than 1 km from the Puntledge unit.

WT and coarse woody debris (CWD) retention are important tools for managing biodiversity at the stand level and will be the main techniques employed on W1466. These tools have the virtues of being practical and measurable over a small land-base, and are included as part of the overall WTR strategy.

A specific map of WTRA has not been included as part of this WLP. A map will be retained on file at the HF (W1466) field office to demonstrate how the WTR requirements are achieved (WLPPR Section 52).

The two types of WTRA's, are Anchored or Dispersed, with contribution measured as described within the performance requirement section of this plan.

Anchored WTRA

Ecologically anchored WTRA are expected to be integral to a permanent or fixed feature such as a wetland or group of trees with unique wildlife characteristics. Anchored WTRA's will usually be located adjacent to any den or nest, be part of the RMA for streams and wetlands, or where existing veteran trees or snags have medium to high wildlife value. Anchored WTR will be normally preferred for meeting the performance requirements.

As operational planning is completed anchored WTRA will be selected as medium and high WT trees and wildlife attributes are located within appropriate areas. Currently 6 ecological features are described in Table 2, as having the potential forest attributes of an Anchored WTRA.

Dispersed WTRA

When ecological anchors are absent or widely spaced, other areas will be retained as dispersed WTRA. Dispersed WTR will include scattered units (groups of trees within units less than .5 ha), a specified area or individual suitable (medium or high value) WT's. A dispersed retention strategy, using basal area retention equivalence will be used to verify results (i.e. 50 percent basal area retention on one hectare is equivalent to .5ha of WTR). It is expected that dispersed WTRA's will move over time 

Examples of dispersed WTRA's include the following:

- Specified area's (treated or untreated) where there are greater than 250 stems/ha (SPH) of a preferred or acceptable tree species. Treated areas are required to have similar or future potential of medium or high wildlife characteristics in a similar proportion to untreated stands.
- Individual trees retained within clearcuts that have medium or high wildlife value.
- Minor tree species retained to achieve biodiversity objectives, including Aspen, Cascara, Yew, Cherry, Willow or Hawthorne.
- Contained forest health incidences, such as root disease or mistletoe, where the risk of spread is limited.

INDIVIDUAL WILDLIFE TREES

a) Species and Characteristics:

The species and characteristics of WT's will be representative of the current stands, with a priority for selection based on high or medium value classification. Trees with wildlife values will be selected based on species preference from high to low as follows: Fd, Cw, Mb, Ss, Bg, Hw, Act, Dr and At.

Wildlife tree characteristics¹⁰ for medium and high value include:

- Pathological indicators – scars, internal decay, cracks, loose bark, cavities, contained¹¹ areas of root disease or mistletoe;
- Evidence of current or future wildlife use;
- Existing nest or den;
- Veterans greater than 250 years old;
- Large open grown trees with large branches (more than 5cm in diameter) and having multi-tops and stem distortions (sweeps or crooks);
- Value for wildlife (berries, insects, perch to view prey);
- Locally important WT.

WT trees will be assessed for windthrow risk and safety prior to selection. Once selected, WT's will be retained for as many years as practical and left where they fall if windthrow occurs. Generally, WT will be selected outside of the hazard zone of roads or trails¹².

b) Conditions Under Which Individual Wildlife Trees May Be Removed:

Individual specifically identified WT's may be removed if they become a safety hazard or they become infested with insects which threaten the health of adjacent trees. Individual WT's could be removed under the following circumstances:

- Compromises the safety of workers or the public;
- Risk of significant forest damage (i.e. localised insect and disease outbreaks);
- When there is available WTRA replacement;
- To improve wildlife function of other WT's.

c) Replacement of Individual Wildlife Trees:

If individual WT's are removed they will be replaced with trees of comparable WT tree value. It is expected that there will always be stands of large trees and older forests within close proximity to each other, including anchored WTRA's on W1466.

¹⁰ Any individual characteristic indicates a medium/high value, when it is >12.5cm and ecologically suited to the site.

¹¹ Contained: The limited opportunity to spread to healthy stands.

¹² Road hazard zone of 40 m, on both sides.

WILDLIFE TREE RETENTION AREAS

a) Forest Cover Attributes

The W1466 WTR strategy for the identification of WTRA's will utilise a selection process. Those forest types which have large numbers of medium and high WT characteristics will have the attributes of a WTRA. Preference for selecting WTRA will be stands anchored ecologically to streams, wetlands, or existing veteran trees. WTRA's will usually contain a mixture of coniferous and deciduous trees. WTRA's will be dispersed throughout the woodlot area, selecting areas where wildlife and biodiversity values are present. A WTRA will be comprised of trees with a minimum age of 30 years, tree diameters greater than 12.5cm and heights greater than 15meters.

Forest health incidence and risk of spread will be evaluated for an area considered for WTR. When veteran or older trees are selected for WTR they often have forest health factors such as root disease and dwarf mistletoe. The overarching goal is to develop strategies to prevent their spread that are supported by a rationale and monitored for effectiveness.

There are potential Anchored WTRA which have been identified, with the forest cover attributes and resource values listed in Table 2.

Table 2: Forest cover attributes of WTRA

Location Description	Forest Cover	Site Index	Function and Value
Browns River	HwFdDr	30	Riparian/Older forest
Lower Plateau Cr ¹³	FdDrCw	36	Riparian/Diverse forest
Conley Cr	CwPwDr	25	Riparian
W1,2&4 Wetlands	DrFdCw	23-38	Riparian/High value WT
Staaf Cr	FdBgCw	28	Riparian/Diverse forest
Ball Park Cr Trib	DrFdHw	32	Riparian/Diverse forest

The WRTA map will be supported with documentation of the contribution as per WLPPR s.52(1) following operational planning, including consultation with Qualified Professionals, when required.

b) Conditions Under Which Trees May Be Removed from Wildlife Tree Retention Areas:

Trees may be removed from a WTRA under the following circumstances:

- If they become a safety hazard, or worker or public safety is compromised;
- If they become infested with insects or diseases which threaten the health of adjacent trees or spread is likely to occur (species specific), based on an assessment by a qualified professional;
- To provide access to adjacent stands. To construct access roads and trails, where no other practicable option exists. Access construction will avoid removal of high and medium value WT's. The number of quality WT trees removed will be no more than reasonably needed to provide the access;

¹³ Lower Plateau creek extends 400m from the eastern Plateau unit boundary.

- Any tree which is not a high or medium value WT and does not damage the WTRA function, based on an assessment by a qualified professional;
- Where more than 50% of the trees within a WTRA are damaged by natural causes.

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

If WT's with high or medium wildlife value are removed from an WTRA, they will be replaced with comparable trees from a nearby location. If there is significant damage (>50% tree damage) to a WTRA it will be replaced with a similar area, unless the damage is determined to contribute to achieving the performance requirements of the Wildlife Tree Retention Strategy (ie:CWD, elevated root structures).

d) Wildlife Notices outside of W1466

This Wildlife Retention Strategy contributes to the intent of the Wildlife Notice, which does not specifically apply to W1466, but it is important to be aware of when considering the selection of WTRA's. A WILDLIFE NOTICE UNDER SECTION 9(3) OF THE WLPPR INCLUDES INDICATORS OF THE AMOUNT, DISTRIBUTION AND ATTRIBUTES OF WILDLIFE HABITAT REQUIRED FOR THE SURVIVAL OF THE SPECIES AT RISK¹⁴ covering the Campbell River Forest District (CRFD). The CRFD is setting aside areas required to meet the notice within the larger forest land base, and will not likely require any portion of the woodlot for future WHA's. The amount of area required for each wildlife species is relatively small in proportion to the entire TSA, where adequate areas should be available outside of W1466.

The specific species included in the notice are listed.

Coastal Tailed Frog, Red-Legged Frog, Keen's Long eared Myotis

None of the habitats of Coastal Tailed Frog, Red-Legged Frog, or Keen's Long eared Myotis are known to occur in W1466. Material to support the notice for species at risk in the CRFD did not propose any WHA's on the woodlot¹⁵.

Queen Charlotte Goshawk and Marbled Murrelet nesting habitat

The woodlot area is primarily older second growth which can be suitable for nesting habitat for Goshawk, but not preferred by the Marbled Murrelet. The WHA's selected for nesting habitat within the CRFD are not in close proximity to W1466. Although no nests have been located on W1466 the management and WTR strategies provide for abundant Goshawk nesting habitat availability. There has been documented use of Goshawk nesting sites within the general vicinity on W0082, approximately 1km to the SE¹⁶.

Great Blue Heron

There are no known nesting areas for the Great Blue Heron that have been identified on W1466.

¹⁴ Signed July 27, 2004 for the CRFD.

¹⁵ Search of the CRFD web site June 2008 indicated no WHA's within W1466.

¹⁶ Personal communication with Al Hopwood Licensee for W0082, July 2008.

MEASURES TO PREVENT INTRODUCTION OR SPREAD OF INVASIVE PLANTS

It is likely that the forest practices of a WL holder may cause the introduction or spread of species of plants described in the MFR Invasive Plants-List (Appendix IV). Some of the invasive plants (Scotch broom and Thistle) presently occur within the woodlot area. The best future approach is to prevent the introduction or spread of invasive plants (stop it from happening).

HF commits to carry out the following measures to prevent the introduction and spread of invasive plants that are likely the result of the WL holder's forest practices:

- Areas of new disturbance (i.e. new construction where there is significant mineral soil exposure resulting from timber harvesting), will be seeded as soon as practicable. Reseeding will be done at an acceptable rate, with an appropriate mix of fast growing grasses and legumes (using seed of the grade Canada Common #1 or better), if natural plant revegetation and growth is unlikely;
- Minimise the transport of invasive plant seed by removing invasive plant seeds or vegetative material (ie: burrs) from the WL holder's clothing and equipment. Checking the undercarriage of the WL holder's vehicles and remove invasive plant material before leaving an infested area.

Other activities that are good practice, **but are not required**, are:

- Invasive plant identification training of employees.
- Annual inspections to identify any areas where invasive plants are present.
- Control measures to prevent the spread of invasive plant will be part of operational planning.
- Gravel quarried for road construction will be kept clean of invasive plants and seeds by clearing topsoil where invasive plants are present. Wherever invasive plants are present the distribution and spread will be avoided.
- Revegetation with native tree and brush species usually occurs within a growing season. If there is a risk of invasive plant introduction, revegetation will be prescribed to minimise the spread. Both reforestation and reseedling will occur at the first practicable time frame.
- The access to the Puntledge unit is gated, restricting the number of unregulated users who have not been trained in identification of invasive plants.
- Maintaining a closed canopy by commercial thinning practices practically eliminates all invasive plants, due to the low light levels. Narrow road corridors will also maintain low light levels discouraging invasive plants.

An assessment of any treatment will incorporate mapping to document the change over time following an adaptive management approach using ecological characteristics to manage invasive species. Treatments, either by hand or with power tools, will be employed as part of a standard brushing regime with an emphasis on effective implementation and monitoring when invasive plant species are present.

STOCKING INFORMATION FOR SPECIFIED AREAS

☒ For the purposes of section 12 and 34(3) of the WLPPR the Uneven-aged Stocking standards for single-tree selection are adopted, as found in the MFR publication "Reference Guide for FDP Stocking Standards". A copy of these stocking standards is included in Appendix I.

The specified areas (SA) stocking standards indicated in Appendix I apply to areas where the establishment of a free growing stand is not required and harvesting is limited to commercial thinning, removal of individual trees, intermediate cutting, single or group selection, or harvesting special forest products.

SA's could be located anywhere within W1466. Where more than 50% of the stand volume is harvested during a single entry there will be a regeneration strategy planned to meet the Stocking Standards (SS) as noted in Appendix IIA.

Commercial thinning on W1466 will target a harvest basal area, and/or stems per hectare (SPH), estimate based on an evaluation of stand stocking characteristics. A stand assessment, tree marking and evaluation methodology is developed for the practice of commercial thinning. The commercial thinning regime plans for re-entry every 10 years until such time as the Current Annual Increment begins to decline due to gaps developing in the stand.

When stocking is reduced to below 250 SPH the units will be excluded from the specific area designation. Opening size and configuration will be reviewed and documented to ensure reliability of achieving SS (Appendix IIA), within an appropriate sized unit for reforestation success. The type of commercially valuable and ecologically suited trees and their character, quantity and distribution is described in Appendix IA, for specified areas. The SS for (free growing obligations) for the purposes of section 12 and 34(3) of the WLPPR are found in the Appendix IIA.

PERFORMANCE REQUIREMENTS

SOIL DISTURBANCE LIMITS

☒ Alternative WLPPR s.24(1)(a):

Soil disturbance limits will be less than eight percent of net area to be reforested, except for situations where site preparation activities (scalps and gouges) are described within this Alternative Performance Requirement (APR).

The soil disturbance limits for Wide Scalps and Deep Gouges will be as follows:

Wide scalps - Maximum 30% of site prepared area.

Deep gouges - Maximum 15% of site prepared area.

A rationale in support of this APR for Soil Disturbance limits and how to meet WLPPR s9 objectives is included within Section II.

PERMANENT ACCESS STRUCTURES

☒ Default: WLPPR s.25:

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

For Cutblocks ≥ 5 ha – 7% of the total cutblock area

For Cutblocks < 5 ha – 10% of the total cutblock area

For the Total WL Area – 7% of the total Woodlot Licence area

STOCKING STANDARDS

☒ Alternative WLPPR s. 35(1)(a):

The SS, regeneration dates and free growing dates are indicated in Appendix IIA.

The SS listed in Appendix IIA include Biogeoclimatic Classification, conifer and broadleaf species for regeneration, stocking targets, latest free growing date and minimum heights by species.

The specific alternatives to the SS (rules for modification) are listed within appendix IIA for circumstances as follows:

- -Mosaic/Complexes;
- -Transition Sites;
- -Minimum Intertree Distances;
- -Heavy Elk/Deer Browse and vandalism;
- -Latest Free Growing period is 20 years.;
- -MSS are reduced by the NPNAT % .

A rationale to describe circumstances where SS will apply and how they meet WLPPR s9 objectives is included within section II.

WIDTH OF STREAM RIPARIAN AREAS

☒ Default WLPPR s.36(4)(b):

The minimum width of the riparian reserve zone, riparian management zone and riparian management area are as described in WLPPR s.36 (4)(b).

WIDTH OF WETLAND RIPARIAN AREAS

☒ **Default: WLPPR s.37(3)(b)**

The minimum width of the riparian reserve zone, riparian management zone and riparian management area are as described in WLPPR s.37 (3)(b).

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 described in WLPPR s.38 (2)(b).

RESTRICTIONS IN A RIPARIAN RESERVE ZONE

☒ **Alternative WLPPR s.39 (2.1):**

The following road construction is proposed in a riparian reserve zone:

Road construction (stream crossing) is proposed in a RRZ within the upper reaches of the Plateau Creek (S-3 stream). Other stream crossings or roads paralleling a stream could be constructed which may cut, modify or remove trees in an RRZ, if S-3 stream classification is determined based on a field assessment.

☒ **Alternative WLPPR Section 39 (1)**

Trees may be cut, modified or removed in a riparian reserve zone specified as a) to h) and for the following purposes:

- I) Commercial thinning or intermediate cut treatment where a majority of the canopy trees are maintained;
- J) Patch cuts of less than .5 ha size and less than 30 meters length of the stream.

RESTRICTIONS IN A RIPARIAN MANAGEMENT ZONE

☒ **Default: WLPPR s.40(1)(b)(c) or (d):**

Construction of a road in a riparian management zone is limited to the conditions described in Section 40(1) of the WLPPR without additional conditions to allow road construction being provided in the WLP.

WILDLIFE TREE RETENTION

The proportion of the Woodlot Licence area that will be occupied by wildlife tree retention is:

☒ **Default WLPPR s.52(1)(c): 8 % of the woodlot licence area**

There are three methods for measurement of the WTRA for meeting WLPPR s52 (1)(c) as follows:

Option A-Anchored WTRA

Anchored WTR contribution is based on the area designated on maps and documented.

Option B-Individual Tree contribution

For the purpose of measuring the contribution of individual WT's, 30m² of individual WT's is deemed to represent 1ha of WTR. Each individual WT contributes a unique basal area (m²). As an example, 54 medium and high WT's, with an average diameter of 60cm (30m²/ha), will be the equivalent of 1ha of WTR.

Option C-Retention Equivalence (Untreated or Specified areas)

For the purpose of measuring the WTRA contribution within an untreated forest type, a commercially thinned or partially cut stand, the equivalent percentage basal area retention will represent the area of WTR. There will be an equal proportional representation of tree species, size and wildlife tree value following any commercial thinning or partial cutting treatment. As an example, of measuring the WTRA contribution if 80% of the basal area of a stand is retained during a commercial thinning (based on a reasonably completed sample), this will be the equivalent of .8ha of WTR contribution. An untreated area contributes 100% of the occupied area if it is documented as a WTRA.

COARSE WOODY DEBRIS

Unless exempted by the district manager or the WLPPR, the minimum amount of coarse woody debris to be left on areas where there is a requirement to establish a free growing stand is:

☒ **Default: WLPPR s.54(1)(b)**

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

RESOURCE FEATURES

☒ **Default WLPPR s.56(1)(b):**

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

Chief Forester's Standards for Seed Use

☒ **Default WLPPR s.32:**

Adopting the Chief Forester's standards for seed use effective on the date of the approval of this plan.

APPENDICES

Appendix I: Stocking Standards for Specified Areas

Appendix I: Stocking Standards for Specified Areas

Partial cutting, such as patch cuts and commercial thinning, provide greater opportunities to undertake forest health treatments. The W1466 partial cutting strategy, including commercial thinning, will continue to be planned and implemented. The effect of this is to lengthen rotations and maintain older forest attributes on the woodlot.

Planning of silviculture system locations continue to be prioritised on the basis of incidence of forest health factors, intermediate cutting cycles and species improvements. The harvest systems utilise a network of permanent access trails for intermediate cut areas and ground based forwarding for patch cuts. The SS for SA's (SSSA) utilises the Uneven-aged SS for single-tree selection, as found in the MFR publication "Reference Guide for FDP SS" modified to include (table 3) only layer 1 (>12.5cm dia) trees. Other layers (2-4) will only be considered for stocking within areas where reforestation is required.

The stand structure retained following the completion of a harvest entry within a specified area is expected to have a species composition substantially the same as the original stand and have the following characteristics:

- Higher composition of preferred tree species;
- Improved spacing and form (straight stems, fewer multiple tops, forks or crooks) on trees, except when classified as a medium or high value WT;
- Improved individual residual tree vigour (crown height, height/diameter ratio and colour) and growth;
- Greater than the minimum preferred and acceptable stocking from Table 3;

The priority for harvesting individual trees follows the selection order of mortality, less vigorous trees, off-site species, acceptable species and then those trees (preferred or acceptable) which, when removed, provide the greatest gain to the retained trees, all subject to a limited maximum harvest percentage.

Trees species and character to meet target stocking in Table 3.

Preferred (p) Species:

Species listed in Appendix IIA by Site Series (Variant) will comprise 80% of the Layer 1 Stocking.

All species listed as acceptable (only trees without any pathological incidences or quality concerns¹⁷), will comprise 20% of the layer 1 stocking.

¹⁷ As per MOF 2008 Cruising Manual.

Acceptable (a) Species:

Acceptable species listed are those likely to be present in a natural stand including Fd, Cw, Hw, Bg, Ss, Pw, Dr, Act, At and Mb. During any of the multiple stand entries tree species could be retained to a similar level (tree species percentage) as was found in the original natural stand¹⁸. During any single stand entry some trees which would not be acceptable (or preferred) at the time of reforestation could be left unharvested (ie: Pw, Mb). After the completion of multi stand entries the selection criteria will have encouraged preferred species composition or openings will be created where reforestation obligation (preferred species establishment) will apply.

Especially, during the first commercial thinning entry there will be tree species variability and situations where a portion of the stand is comprised entirely of only acceptable tree species. Within a larger timber type comprised primarily of preferred species, small units containing pure stands of acceptable tree species will also occur. During the first thinning entry there will continue to be post harvest intertree competition, due to individual tree cutting priorities over multiple entries. During post stand surveys, it is important to recognise that acceptable trees will continue to grow and qualify for meeting SS, within a SA, for up to 20% of the stocking levels. Upon final harvest, where the majority of trees are removed, the Stocking standards (Appendix IIa) will apply.

Character:

Tree layer 1 is comprised of trees with diameters >12.5cm expected to be dominant by size (heights ranging from 20-55m, dia from 12.5 to >100cm), and vigour (crown development, colour and spread) contributing to maintaining and enhancing the economically valuable supply of commercial timber from ecologically suitable tree species. The four layers are described in Table 4, but only layer 1 is included as this stocking level closely proximates the actual Commercial Thinning practice results on W1466.

Other layers could exist as an understory composition of ecologically suited trees of varying form and vigour. After more than one stand entry it is expected that understory trees (not meeting layer 1 description) will be either harvested or have improved vigour, capable of continued individual tree growth.

WT and minor species¹⁹ will be retained to avoid species sanitation.

Table 3: Stocking Standards Specified Area²⁰

Total SPH²¹	Layer²²	Target pa SPH	Minimum pa SPH	Minimum p SPH
900	1	400	200	200
800	1	300	150	150

¹⁸ Trees species composition W1466 by percent: Fd66, Dr18, Cw8, Fd mixture 5, Hw1, Pw1, Act1.

¹⁹ Minor tree species list: Yew, cascara, dogwood, hawthorne, crab apple, willow, and cherry.

²⁰ Source of table 4 is MFR Reference Guide for FDP stocking standards.

²¹ Target Stocking standards from table 5 (Appendix IIA).

²² Table 4 describes layer 1-4.

Notes:

The inclusion of Table 3 is based on the past decade of stand planning, assessments and evaluations of performance on W1466 for commercial thinning treatments in combination with MFR reference guide for FDP Unevenaged SS. The Unevenaged SS have been modified by removing reference to layers 2-4.

Regeneration delay is immediately following harvest when the residual stand has no significant damage or pest problems and meets the min SS. When regeneration is achieved, the earliest free growing date is 12 months and the latest is 24 months after completion of harvesting. Preferred and acceptable species and "Target and Minimum Standards" for total SPH are as specified in Table IIA by BEC site series.

Table 4: Layer 1-4 Size Description

Layer #	Description	Size
Layer 1	Mature	trees $\geq 12.5\text{cm}$
Layer 2	Pole	trees 7.5cm to 12.4cm
Layer 3	Sapling	trees 1.3m height to 7.4cm
Layer 4	Regeneration	trees $< 1.3\text{m}$ height

SSSA has been proposed within this WLP supported by the following rationale concerning preferred and acceptable tree species. Any existing tree species can be counted towards SSSA's (table 3) listed as acceptable (to a max of 20%) or preferred. The species composition that currently exists on W1466 will be modified during the various entries when operating within the SA's. It is intended that the existing tree composition of a mixture²³ of species will continue, either as small patches of preferred species and/or within a closely monitored stand management regime. It is estimated that 316 ha of older forest types could be designated as specified areas.

When applying the SSSA to any stand within the woodlot area, the species composition following treatment will provide for diversity with a priority placed on preferred species forming the dominant stand structure over a number of entries. At the conclusion of any single entry stands can contain the full range of existing tree species supported by the current stocking levels within table 3.

²³ Other species on W1466 include Ss, Pl, Act, Mb, Bitter Cherry and Bg

Appendix IIa: Stocking Standards W1466

Appendix IIa: Stocking Standards W1466

As an alternative performance requirement under WLPPR s.35 (1)(a) the SS for W1466 include an introduction, Table 5: Regeneration Guide/Stocking Standard detail, Footnotes, and Modification rules as an APR. This APR was prepared utilising the "Introduction to the Reference Guide for FDP SS" (01/20/2008). Common stocking requirements for specific locations and conditions for areas where the establishment of a free growing stand is required include:

Minimum inter-tree distance

Trees must be greater than the approved minimum inter-tree distance apart in order to be well spaced as follows:

Min inter-tree distance (m)	Location/condition
1.0	Modifying Rule Number Three (Hygric, sub-hydric or site prepared areas);
1.5	Modifying Rule Number Four (Heavy Deer/Elk Browse and Vandalised areas);
2.0	All other areas.

Height of trees above brush

In addition to being at least the required minimum height, trees must be greater than a minimum 150% height above competing vegetation (brush) in order to be free growing (FG) for all areas of W1466.

Where appropriate and practicable

A) Areas will be reforested with a mixture of desirable species, and

B) On sites with more than one "preferred species more than one preferred species (and where practicable, all of the preferred species) will be planted".

Assessment for Latest Free Growing date

Assessment for Latest Free Growing date is 20 years.

Tree Species listed as preferred for Root Rot or Broadleaf management

In certain circumstances, such as management of riparian zones or wildlife habitat, site restoration, or for forest health reasons, species that are listed in the guide as tertiary are proposed as acceptable and as preferred species in Table 5. Tree species listed in Table 5 as Root rot and broadleaf will apply to any unit where there has been no destumping and/or root disease is present.

Table 5: Regeneration Guide/Stocking Standard Detail W1466

Biogeoclimatic classification Zone/SubZone is CWHxm1

Site Series	Tree Species				Conifer ⁷ Stocking well spaced/ha			Late FG Date	Minimum FG Hts/species			
	Conifer			Broadleaf								
	Preferred (p)	Acceptable (a)	Root Rot		Target	Min pa	Min p	Year	Species	Ht (m)	Species	Ht (m)
01	Fd	Hw Cw Pw ³	Pw ³	Dr ^{5,6,a} Mb ^b	900	500	400	20	Fd Pw	3.00 2.50	Hw Cw,	2.0 1.5
02*	Pl Fd		Pw ³ Pl		400	200	200	20	Pw	2.50	Ss,Lw	1.5
03	Fd Pl ¹	Cw	Pw ³ Pl	(ActDrMb) ^b	800	400	400	20	Fd	2.00	Pl,Cw	1.25
04	Fd	Cw Pw ³	Pw ³ Cw		900	500	400	20	Fd Pw	3.00 2.50	Hw Cw,Lw	2.0 1.5
05	Cw Fd	Pw ³	Pw ³	(ActDr) ^{5,a} Mb ^a	900	500	400	20	Fd	4.00	Pw	2.5
07	Cw Fd	Bg	Pw ³	(ActDr) ^{5,a} Mb ^a	900	500	400	20	Bg	3.50	Cw,Hw	2.0
06	Cw Hw Fd		Pw ³	Act ^b Dr ⁶ Mb ^b	900	500	400	20	Bg, Fd Pw	3.00 2.50	Hw Cw,Lw	2.0 1.5
08	Cw Ss ⁴	Bg	Pw ³	(ActDrMb) ^{6,a}	900	500	400	20	Ss	4.00	Pw	2.5
09	Cw ²	Bg	Pw ³	(ActDrMb) ^{6,a}	900	500	400	20	Bg	3.50	Cw	2.0
10	no conifers			(Act,Dr,Mb) ^b	-	-	-	-				
11*	Pl ²	Cw ²	Pw ³ CwPl		400	200	200	20	Pw	2.50	Lw,Ss	1.5
12	Cw ²	Ss ⁴ Hw ² Pw ³	Pw ³		800	400	400	20	Fd	2.00	Pl,Cw	1.25
13	Cw Bg Fd		Pw ³	(ActDrMb) ^{6,a}	900	500	400	20	Fd	4.00	Pw	2.5
14	Bg ² Cw ²		Pw ³		900	500	400	20	Bg	3.50	Cw	2.0
15	Cw ²		Pw ³	(ActDrMb) ^{6,a}	800	400	400	20				

Footnotes and symbol descriptions attached to the stocking standards (Table 5) for W1466

Conifer Tree Species		Foot Notes				
		#	Note			
"Bg"	means grand fir;	1	Pl is restricted to nutrient very-poor sites			
"Cw"	means western red cedar;	2	Elevated microsites are preferred			
"Fd"	means Douglas fir;	3	Risk of white pine blister rust			
"Hw"	means western hemlock;	4	Risk of Weevil damage			
"Pl"	means lodgepole pine;	5	Restricted to fresh soil moisture regimes			
"Pw"	means white pine;	6	Limited by poorly drained soils			
"Ss"	means Sitka Spruce;	7	Stocking standards for Broadleaf Species - Sawlog by			
			Species	TSSpa	MSSpa	MSSa Min Ht (m)
			Act	700	400	400 4
			Dr,Mb	1200	700	600 4
Broadleaf Tree Species		Broadleaf Management constraints				
"Act"	means black cottonwood	#				
"At"	means trembling aspen;	a	Productive, reliable, and feasible regeneration option			
"Dr"	means red alder;	b	Limited in productivity, reliability and/or feasibility			
"Mb"	means bigleaf maple;		Less than 20% of W1466 will have broadleaf management applied to SS.			
			Reference Chief Forester letter August 22, 2002.			

Biogeoclimatic unit or BEC classification means the zone, variant and site series described in the most recent field guide published by the MFR for the identification and interpretation of ecosystems, as applicable to a harvest area.

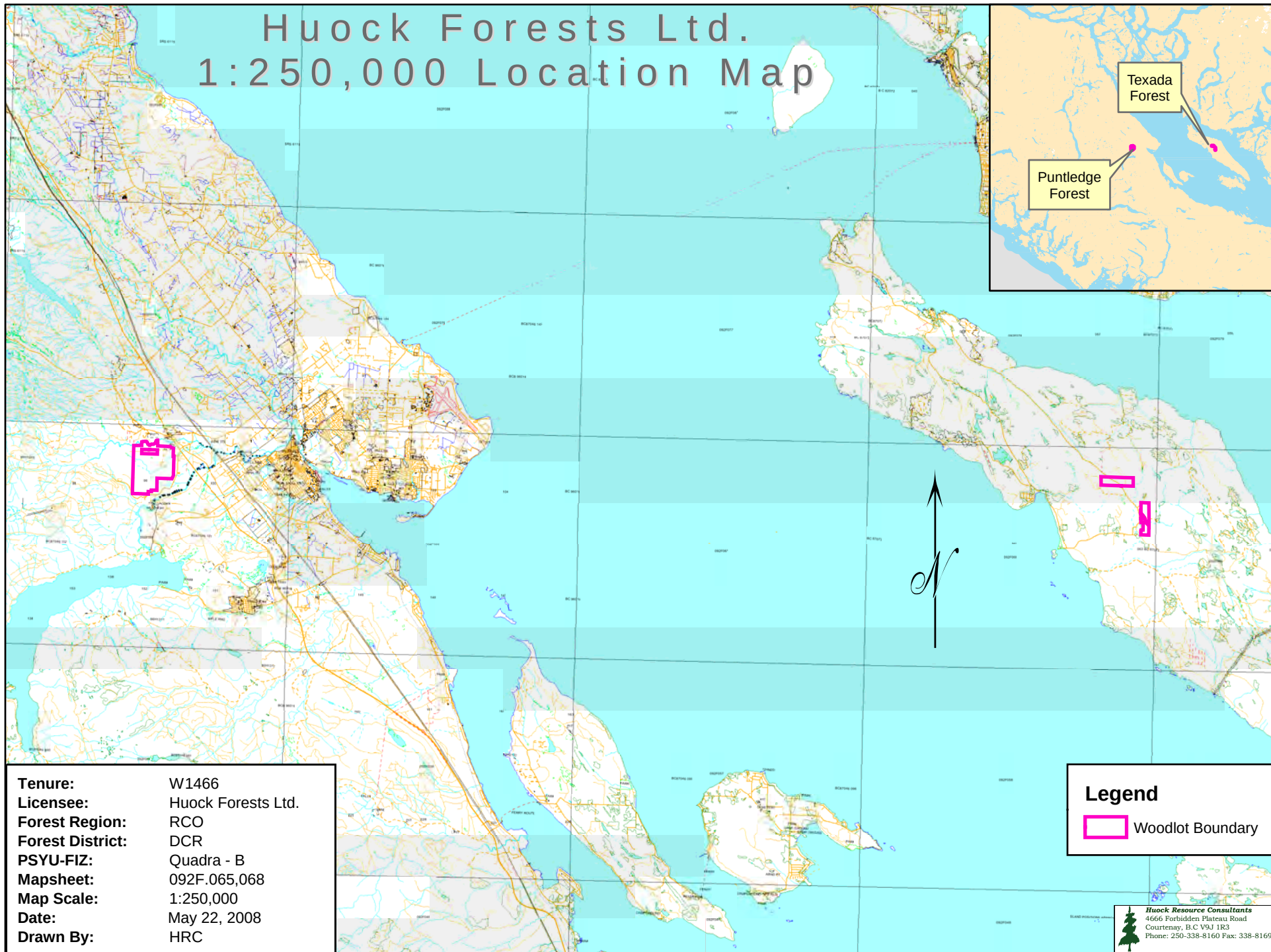
"Min" means minimum.

Rules for Modifying Stocking Standards (Table 5) on W1466²⁴
RULE NUMBER ONE - Site Series Mosaics/Complexes
Where more than one site series is located within a logical standards unit area the standard that applies will be that of the dominant site series. This standard can be modified with the inclusion of additional species selected from the standard of the subdominant site series for those specific areas of the mosaic or complex. These additional components to the standard will be supported by a rationale, and documented.
RULE NUMBER TWO - Transitional Sites
On transitional sites occurring between two BEC units the standard that applies will be that of the dominant BEC unit. This standard can be modified with the inclusion of components of the standard with the sub-dominant BEC unit. These additional components to the standard will be supported by a rationale and documented.
RULE NUMBER THREE - Minimum Intertree Distance (MITD)
The general MITD of 2.0 meters can be reduced down to 1.0 meters for any given site where productive and plantable sites are limited by pre-harvest site characteristics. These can include but are not limited to colluvial, hygric and subhygric sites. Also included are areas immediately adjacent to a stream (within a RMA), NPNAT, mechanically mounded site or unplantable slash piles. Justification for a reduced MITD will be supported by a rationale and documented.
RULE NUMBER Four - Heavy Elk/Deer Browse or Vandalised Areas (HEDBV)
In HEDBV the intertree spacing is reduced to 1.5 m and MSS is 50% of normal standards. HEDBV are defined as units where browse or damage is chronic and ongoing. HEDBV will include more than 50 damaged trees per hectare or standard unit. The HEDBV designation will be supported by a rationale and documented.

²⁴ Rules for Modifying stocking standards developed from the Sunshine Coast Forest District approved stewardship plans.

Appendix III: The Woodlot Licence Plan Maps

Huock Forests Ltd. 1:250,000 Location Map



Tenure: W1466
Licensee: Huock Forests Ltd.
Forest Region: RCO
Forest District: DCR
PSYU-FIZ: Quadra - B
Mapsheet: 092F.065,068
Map Scale: 1:250,000
Date: May 22, 2008
Drawn By: HRC

Legend

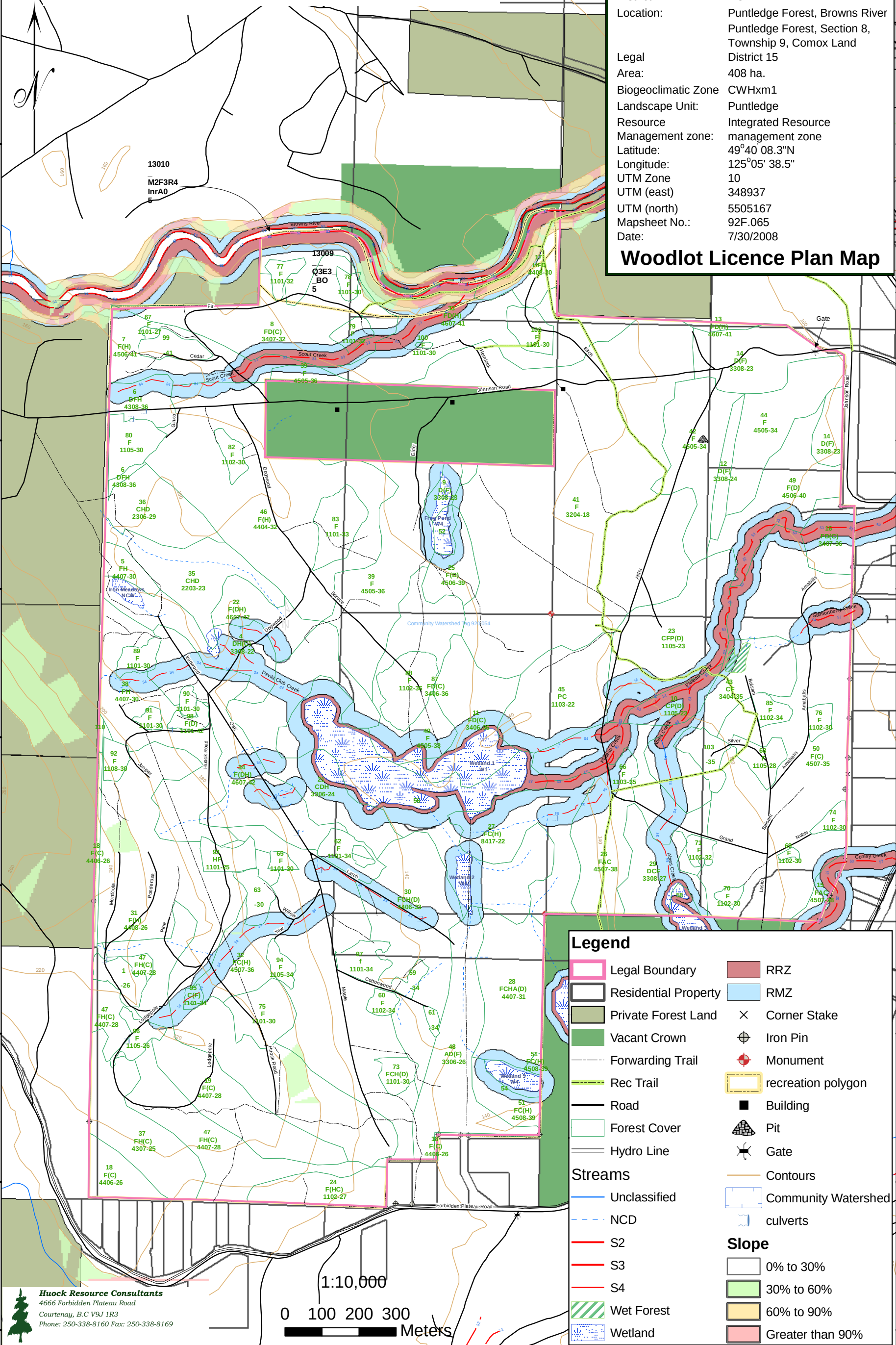
 Woodlot Boundary

 **Huock Resource Consultants**
4666 Forbidden Plateau Road
Courtenay, B.C. V9J 1R3
Phone: 250-338-8160 Fax: 338-8169

Woodlot Licence W1466
Puntledge Forest Unit
Woodlot Licence Plan Map

Licence No.: **W1466**
Licensee **Huock Forests Ltd.**
Region: RCO
District: DCR
Location: Puntledge Forest, Browns River
Puntledge Forest, Section 8,
Township 9, Comox Land
District 15
Legal Area: 408 ha.
Biogeoclimatic Zone CWHxm1
Landscape Unit: Puntledge
Resource Management zone: Integrated Resource management zone
Latitude: 49°40 08.3"N
Longitude: 125°05' 38.5"
UTM Zone 10
UTM (east) 348937
UTM (north) 5505167
Mapsheet No.: 92F.065
Date: 7/30/2008

Woodlot Licence Plan Map



Legend

Legal Boundary	RRZ
Residential Property	RMZ
Private Forest Land	Corner Stake
Vacant Crown	Iron Pin
Forwarding Trail	Monument
Rec Trail	recreation polygon
Road	Building
Forest Cover	Pit
Hydro Line	Gate
Unclassified	Contours
NCD	Community Watershed
S2	culverts
S3	
S4	
Wet Forest	
Wetland	

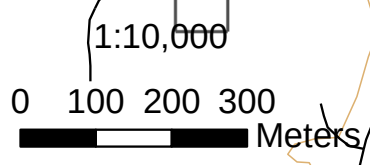
Streams

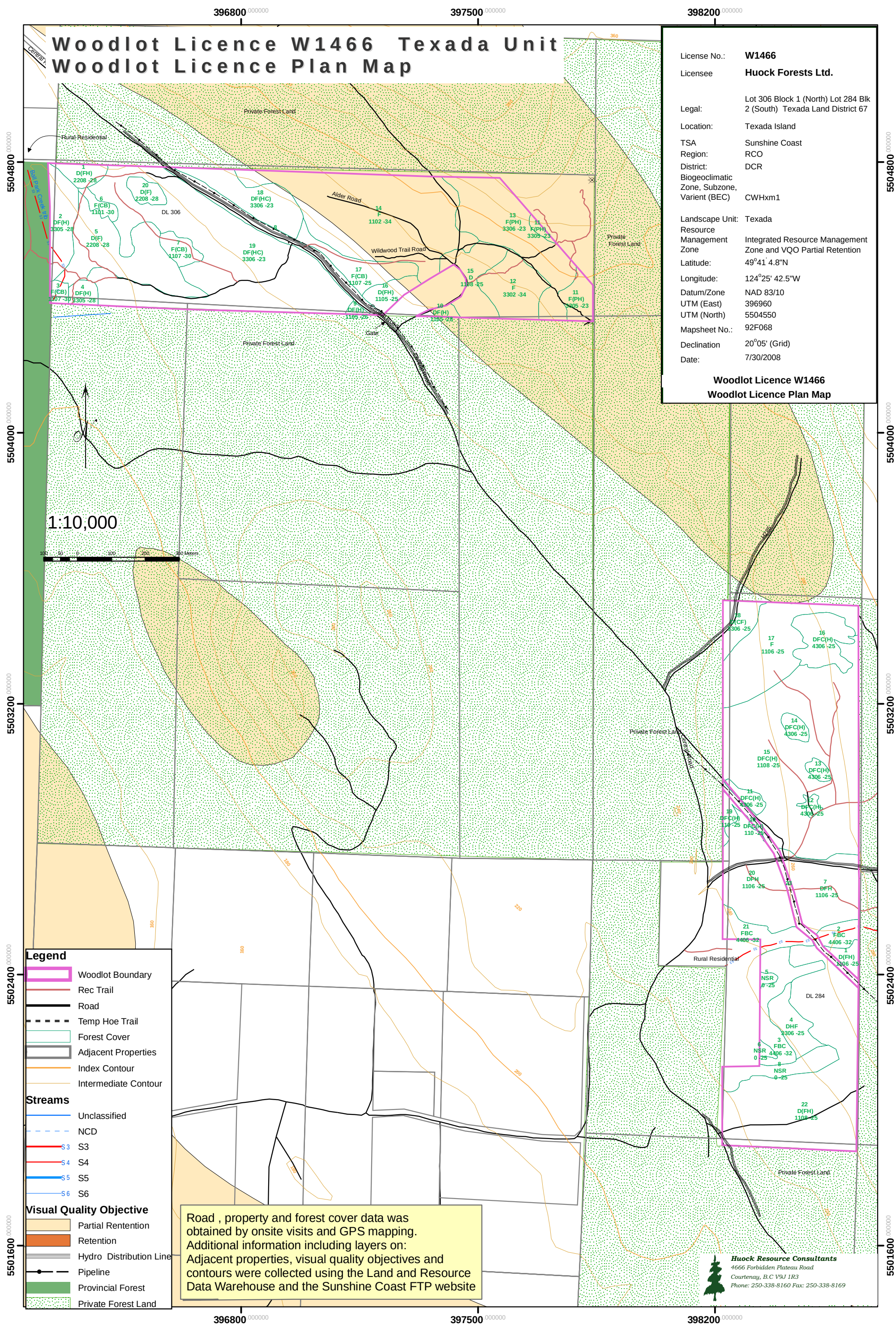
- Unclassified
- NCD
- S2
- S3
- S4

Slope

- 0% to 30%
- 30% to 60%
- 60% to 90%
- Greater than 90%

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Appendix IV: Invasive Plant List

For the purposes of section 47 of the Forest and Range Practices Act, the prescribed species of invasive plants are as follows:

Weed Species	Scientific name
Anchusa	<i>Anchusa officinalis</i>
Baby's breath	<i>Gypsophila paniculata</i>
Black knapweed	<i>Centaurea nigra</i>
Blueweed	<i>Echium vulgare</i>
Brown knapweed	<i>Centaurea jacea</i>
Bull Thistle	<i>Cirsium vulgare</i>
Canada Thistle	<i>Cirsium arvense</i>
Common Burdock	<i>Arctium minus</i>
Common Tansy	<i>Tanacetum vulgare</i>
Dalmatian Toadflax	<i>Linaria dalmatica</i>
Diffuse Knapweed	<i>Centaurea diffusa</i>
Field Scabious	<i>Knautia arvensis</i>
Giant Knotweed	<i>Polygonum sachalinense</i>
Gorse	<i>Ulex europaeus</i>
Hoary Alyssum	<i>Berteroa incana</i>
Hoary Cress	<i>Cardaria draba</i>
Hound's-tongue	<i>Cynoglossum officinale</i>
Japanese Knotweed	<i>Polygonum cuspidatum</i>
Leafy spurge	<i>Euphorbia esula</i>
Marsh Thistle	<i>Cirsium palustre</i>
Meadow Hawkweed	<i>Hieracium pilosella</i>
Meadow Knapweed	<i>Centaurea pratensis</i>
Nodding Thistle	<i>Carduus nutans</i>
Orange Hawkweed	<i>Hieracium aurantiacum</i>
Oxeye Daisy	<i>Chrysanthemum leucanthemum</i>
Perennial pepperweed	<i>Lepidium latifolium</i>
Plumeless Thistle	<i>Carduus acanthoides</i>
Puncture vine	<i>Tribulus terrestris</i>
Purple Loosestrife	<i>Lythrum salicaria</i>
Rush Skeletonweed	<i>Chondrilla juncea</i>
Russian Knapweed	<i>Acroptilon repens</i>
Scentless Chamomile	<i>Matricaria maritima</i>
Scotch broom	<i>Cytisus scoparius</i>
Scotch Thistle	<i>Onopordum acanthium</i>
Spotted Knapweed	<i>Centaurea maculosa</i>
St. John's-wort	<i>Hypericum perforatum</i>
Sulphur Cinquefoil	<i>Potentilla recta</i>
Tansy ragwort	<i>Senecio jacobaea</i>
Teasel	<i>Dipsacus fullonum</i>
Yellow Iris	<i>Iris pseudacorus</i>
Yellow starthistle	<i>Centaurea solstitialis</i>
Yellow toadflax	<i>Linaria vulgaris</i>

[Provisions of the Forest and Range Practices Act, SBC 2002, c. 69, relevant to the enactment of this regulation: sections 47 and 141]

INVASIVE PLANTS REGULATION

B.C. Reg. 18/2004[effective Jan. 31, 2004]

Appendix V: Water Licence Report Table

Water Licences Report

Scroll to bottom of page for unique count of licences and/or applications found in your search

Licence No	WR Map/ Point Code	Stream Name	Purpose	Quantity	Units	Qty Flag	Rediv Flag	Licensee	Water District/Precinct	Licence Status	Process Status	Priority Date	Issue Date
C055262	92.F.065.4 AA (PD31056)	Puntledge River	Domestic	500	GD	T	N	THOMAS KERRI L 4885 GREAVES CRES COURTENAY BC V9J1R5	NAN - COURTENAY	Current	N/A	19780626	0
C056045	92.F.065.4 EE (PD31064)	Puntledge River	Conserv.-Use Of Water	30	CS	T	N	FISHERIES & OCEANS CANADA 200 - 401 BURRARD ST VANCOUVER BC V6C3S4	NAN - COURTENAY	Current	N/A	19780201	0
C056529	92.F.065.4 B (PD31097)	Puntledge River	Domestic	3000	GD	T	N	TEMMLER BONNIE M 4787 LAKE TRAIL RD COURTENAY BC V9N9N2	NAN - COURTENAY	Current	N/A	19801010	0
C058974	92.F.065.4 C (PD31096)	Puntledge River	Irrigation	45	AF	T	N	SMIT KAREN J 4745 FORBIDDEN PLATEAU RD COURTENAY BC V4B4V3	NAN - COURTENAY	Current	Sec. 18 Amendment	19801113	0
C059097	92.F.065.4 A (PD31098)	Puntledge River	Waterworks Local Auth	2000000000	GY	M	N	COMOX-STRATHCONA REGIONAL DISTRICT OF 600 COMOX RD COURTENAY BC V9N3P6	NAN - COURTENAY	Current	N/A	19800208	0
"	92.F.065.4 FF (PD31063)	Puntledge River	Waterworks Local Auth	2000000000	GY	M	N	COMOX-STRATHCONA REGIONAL DISTRICT OF 600 COMOX RD COURTENAY BC V9N3P6	NAN - COURTENAY	Current	N/A	19800208	0
C059689	92.F.065.4 V (PD31060)	Puntledge River	Domestic	500	GD	T	N	ODDLEIFSON JONALAN AND ROSALIND J 4871 GREAVES CRES COURTENAY BC V9J1R5	NAN - COURTENAY	Current	N/A	19830923	0
C070382	92.F.065.4 Z (PD61356)	Puntledge River	Conserv.-Use Of Water	30	CS	T	N	FISHERIES & OCEANS CANADA 200 - 401 BURRARD ST VANCOUVER BC V6C3S4	NAN - COURTENAY	Current	N/A	19900406	0
C101150	92.F.065.4 HH (PD62554)	Puntledge River	Conserv.-Use Of Water	15	CS	T	N	FISHERIES & OCEANS CANADA 200 - 401 BURRARD ST VANCOUVER BC V6C3S4	NAN - COURTENAY	Current	N/A	19901204	19940311
C105605	92.F.065.4 JJ (PD70542)	Puntledge River	Domestic	500	GD	T	N	EDWIN MANAGEMENT ADVISORY SERVICES LTD 4709 CONDENSORY ROAD COURTENAY BC V9J1R6	NAN - COURTENAY	Current	N/A	19921005	19970711
"	"	Puntledge River	Irrigation	12	AF	T	N	EDWIN MANAGEMENT ADVISORY SERVICES LTD 4709 CONDENSORY ROAD COURTENAY BC V9J1R6	NAN - COURTENAY	Current	N/A	19921005	19970711
C116230	92.F.065.4 (PD76294)	Puntledge River	Conserv.-Use Of Water	18	CS	T	N	FISHERIES AND OCEANS CANADA 4166 DEPARTURE BAY RD NANAIMO BC V9T3N6	NAN - COURTENAY	Current	N/A	20010522	20011031

C120239	92.F.065.4 DD (PD61288)	Puntledge River	Irrigation	3	AF	T	N	EHRLER GEORGE 4905 DARCY RD COURTENAY BC V9J1R5	NAN - COURTENAY	Current	N/A	19900402	20041220
C120300	92.F.065.4 KK (PD68475)	Puntledge River	Conserv.-Use Of Water	100	CS	T	N	BC HYDRO & POWER AUTHORITY GENERATION PLANT OP. 6911 SOUTHPOINT DR (E15) BURNABY BC V3N4X8	NAN - COURTENAY	Current	N/A	19650819	20050119
C120301	92.F.065 C (PD31095)	Puntledge River	Storage-Power	95480	AF	T	N	BC HYDRO & POWER AUTHORITY GENERATION PLANT OP. 6911 SOUTHPOINT DR (E15) BURNABY BC V3N4X8	NAN - COURTENAY	Current	N/A	19110418	20050119
C120302	92.F.065.4 A (PD31098)	Puntledge River	Power-General	1000	CS	T	N	BC HYDRO & POWER AUTHORITY GENERATION PLANT OP. 6911 SOUTHPOINT DR (E15) BURNABY BC V3N4X8	NAN - COURTENAY	Current	N/A	19110418	20050119
C120585	4820 (PD79016)	Puntledge River	Fire Protection	1000	GD	T	N	COMOX INDIAN BAND 3320 COMOX RD COURTENAY BC V9N3P8	NAN - COURTENAY	Current	N/A	20050401	20050818
F042992	92.F.065.4 T (PD31062)	Puntledge River	Irrigation	68	AF	T	N	VIEWFIELD FARMS (1995) LTD RR 4 SITE 480 COURTENAY BC V9N7J3	NAN - COURTENAY	Current	Sec. 18 Amendment	19650927	0
F051510	92.F.065.4 Y (PD31057)	Puntledge River	Domestic	500	GD	T	N	TURNER KAVEL L & MADGE A 4881 GREAVES CRES COURTENAY BC V9J1R5	NAN - COURTENAY	Current	N/A	19760206	0
Z118164	92.F.065.4 A (PD31098)	Puntledge River	Waterworks Local Auth	2190000000	GY	M	N	COMOX-STRATHCONA REGIONAL DISTRICT OF 600 COMOX RD COURTENAY BC V9N3P6	NAN - COURTENAY	Active Appl.	Technical Assessment	20030211	0
"	92.F.065.4 FF (PD31063)	Puntledge River	Waterworks Local Auth	2190000000	GY	M	N	COMOX-STRATHCONA REGIONAL DISTRICT OF 600 COMOX RD COURTENAY BC V9N3P6	NAN - COURTENAY	Active Appl.	Technical Assessment	20030211	0

Total number of Licences and/or Applications found is 18

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Water Licences Report

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Licence No	WR Map/ Point Code	Stream Name	Purpose	Quantity	Units	Qty Flag	Rediv Flag	Licensee	Water District/Precinct	Licence Status	Process Status	Priority Date	Issue Date
C058041	92.F.065.4 GG (PD70468)	Browns River	Domestic	500	GD	T	N	DARVILL DONALD L 4010 FORBIDDEN PLATEAU RD COURTENAY BC V9J1P9	NAN - COURTENAY	Current	N/A	19810325	0
C116727	92.F.065.4 (PD76418)	Browns River	Conserv.- Construct. Works	50	CS	T	N	FISHERIES AND OCEANS CANADA 4166 DEPARTURE BAY RD NANAIMO BC V9T3N6	NAN - COURTENAY	Current	N/A	20010910	20011107
C121096	92.F.065.4 (PD79297)	Browns River	Processing	2000	GD	T	N	DOVE CREEK TIMBER CORP 3837 PIERCY RD COURTENAY BC V9J1R7	NAN - COURTENAY	Current	N/A	20050816	20051230
Z116944	92.F.065.4 (PD76034)	Browns River	Power-General	193	CS	T	N	HYDROMAX ENERGY LTD 350 - 1066 W HASTINGS ST VANCOUVER BC V6E3X1	NAN - COURTENAY	Active Appl.	Technical Assessment	20011220	0

Total number of Licences and/or Applications found is 4

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Huock Forests Ltd. Comox Lake Watershed Contaminant Risk Assessment

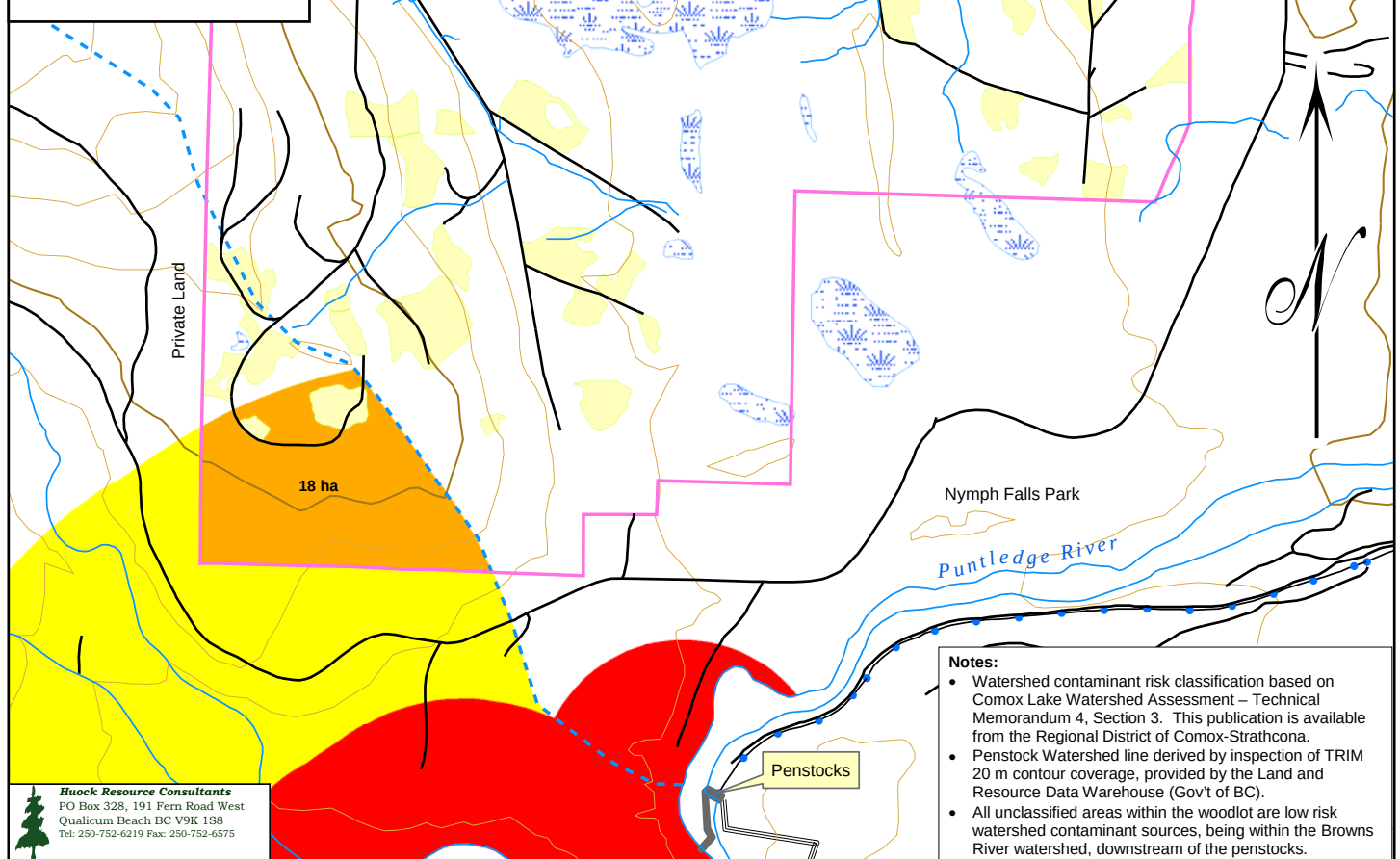
Tenure: W1466
Licensee: Huock Forests Ltd.
Forest Region: RCO
Forest District: DCR
BGCZ: CWH xm1
PSYU-FIZ: Quadra - B
TSA: 37
Location: Puntledge
Latitude: 49°40'53"
Longitude: 125°05'46"
UTM Zone: 10
UTM Easting: 348800
UTM Northing: 5505300
Mapsheet: 092F.065
Declination (UTM): 20° East
Map Scale: 1:15,000
Date: December 6, 2006
Drawn By: HRC (BV)

Legend

- Woodlot Boundary
- Road
- Logged Area
- Index Contour
- Contour
- Depression
- Penstocks
- Spillway
- Transmission Line
- Pipeline
- Swamp/Wetland
- Streams
- Penstock Watershed

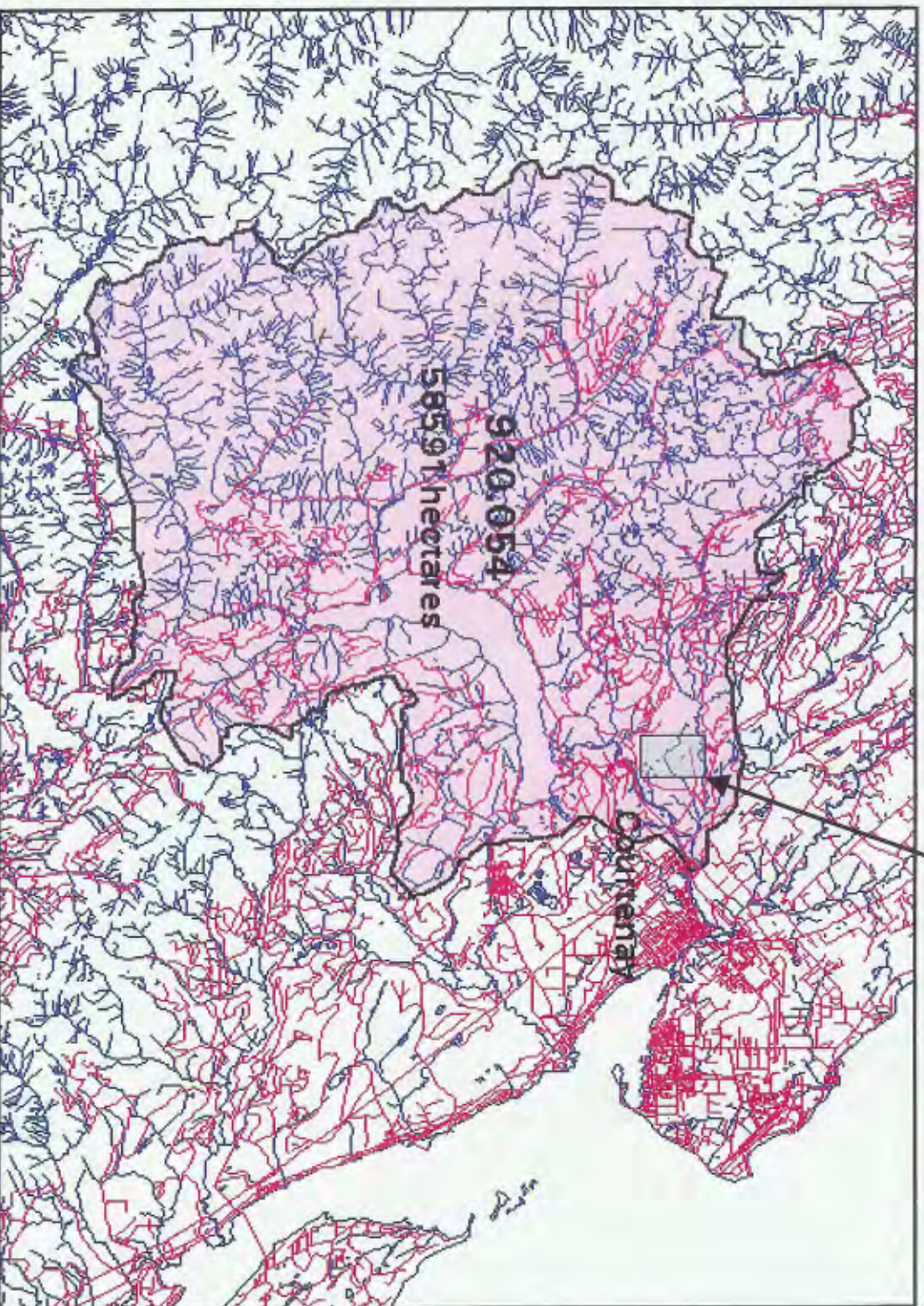
Contaminant Risk Classification

- High Contaminant Risk (300 m)
- Moderate Contaminant Risk (1 km)
- W1466 Moderate Risk Area



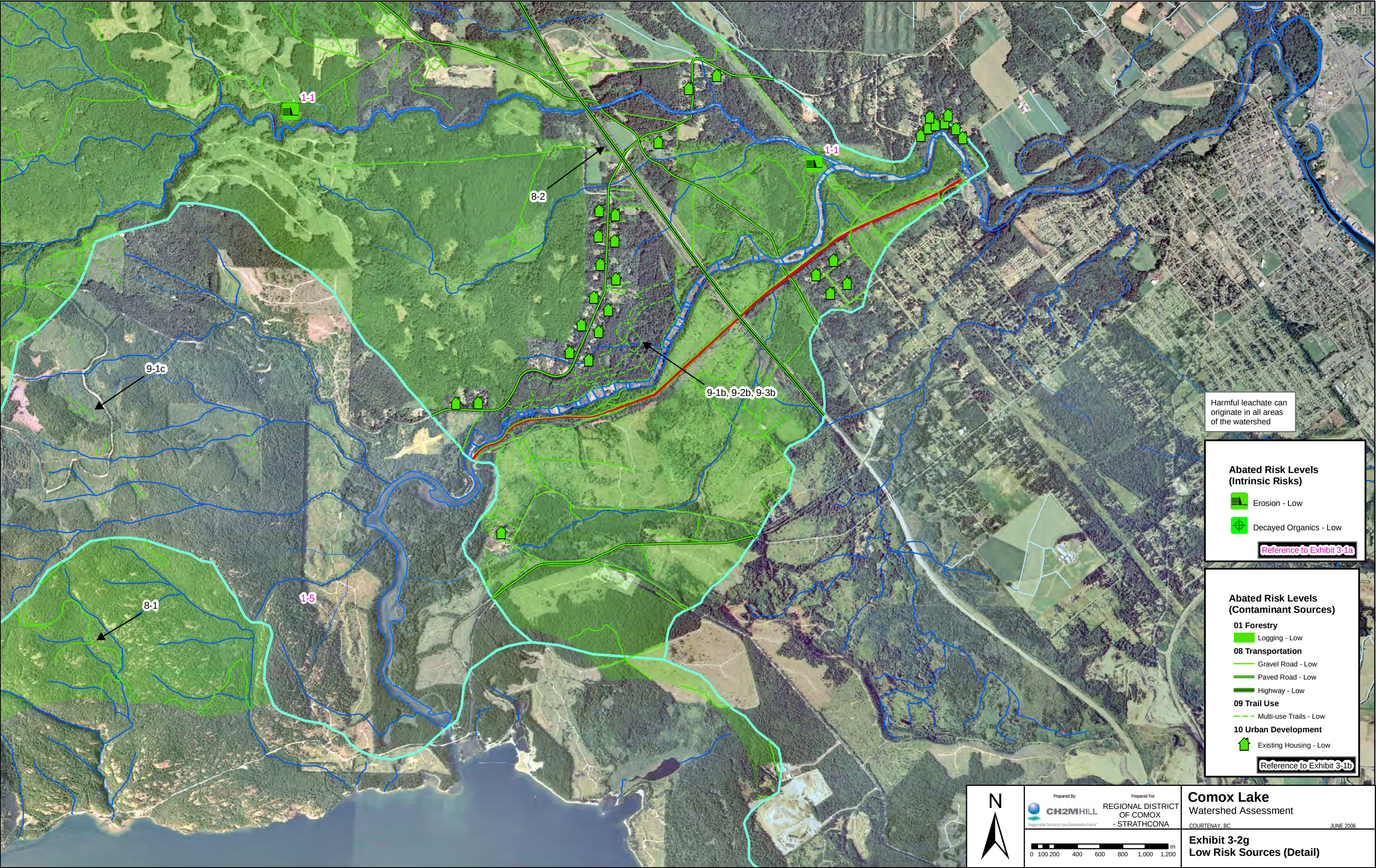
Notes:

- Watershed contaminant risk classification based on Comox Lake Watershed Assessment – Technical Memorandum 4, Section 3. This publication is available from the Regional District of Comox-Strathcona.
- Penstock Watershed line derived by inspection of TRIM 20 m contour coverage, provided by the Land and Resource Data Warehouse (Gov't of BC).
- All unclassified areas within the woodlot are low risk watershed contaminant sources, being within the Browns River watershed, downstream of the penstocks.



Puntledge Community Watershed

Watershed # 920.054



Harmful leachate can originate in all areas of the watershed

**Abated Risk Levels
(Intrinsic Risks)**

-  Erosion - Low
-  Decayed Organics - Low

[Reference to Exhibit 3-1a](#)

**Abated Risk Levels
(Contaminant Sources)**

- 01 Forestry**
 -  Logging - Low
- 08 Transportation**
 -  Gravel Road - Low
 -  Paved Road - Low
 -  Highway - Low
- 09 Trail Use**
 -  Multi-use Trails - Low
- 10 Urban Development**
 -  Existing Housing - Low

[Reference to Exhibit 3-1b](#)



Prepared By

**CH2MHILL**

Prepared For

REGIONAL DISTRICT
OF COMOX
- STRATHCONA

0 100 200 400 600 800 1,000 1,200

m

Comox Lake
Watershed Assessment

COURTENAY, BC

JUNE 2006

Exhibit 3-2g
Low Risk Sources (Detail)

Water Licences Report

Scroll to bottom of page for unique count of licences and/or applications found in your search

<u>Licence No</u>	<u>WR Map/ Point Code</u>	<u>Stream Name</u>	<u>Purpose</u>	<u>Quantity</u>	<u>Units</u>	<u>Qty Flag</u>	<u>Rediv Flag</u>	<u>Licensee</u>	<u>Water District/Precinct</u>	<u>Licence Status</u>	<u>Process Status</u>	<u>Priority Date</u>	<u>Issue Date</u>
C030585	92.F.068.4.2 D (PD45639)	Staaf Creek	Domestic	1000	GD	T	N	STAAF HERBERT F RR 1 VAN ANDA BC V0N3K0	VAN - TEXADA	Current	N/A	19650428	0
C120529	92.F.068.4.2 D (PD45639)	Staaf Creek	Domestic	1000	GD	T	N	RAIRIE MERVIN G & DARCYNE Y BOX 221 VAN ANDA BC V0N2K0	VAN - TEXADA	Current	N/A	19650428	20050322

Total number of Licences and/or Applications found is 2

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Water Licences Report

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<u>Licence No</u>	<u>WR Map/ Point Code</u>	<u>Stream Name</u>	<u>Purpose</u>	<u>Quantity</u>	<u>Units</u>	<u>Qty Flag</u>	<u>Rediv Flag</u>	<u>Licensee</u>	<u>Water District/Precinct</u>	<u>Licence Status</u>	<u>Process Status</u>	<u>Priority Date</u>	<u>Issue Date</u>
C024579	92.F.068.4.3 F (PD45634)	Ball Park Creek	Waterworks Local Auth	182500	GY	T	N	GILLIES BAY IMPROVEMENT DISTRICT C/O J PARSONS PO BOX 102 GILLIES BAY BC V0N1W0	VAN - TEXADA	Current	N/A	19580829	0

Total number of Licences and/or Applications found is **1**

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Huock Forests Ltd. Texada OCP Water Resources

