



REQUEST FOR PROPOSAL
Vegetation Management Contract Area 3 (40.7 hectares)
Alberni Valley Regional Airport (CBS8)
Alberni Clayoquot Regional District

BACKGROUND:

The Alberni–Clayoquot Regional District is looking for submissions for the Removal of Obstacle Limitation Surface (OLS) penetrations on the approach to the runway at the Alberni Valley Regional Airport (AVRA). The work will primarily consist of tree removal within the AVRA lands, Crown Lands under a Licence to Cut and Cutting Permit.

SCOPE:

- Individual trees and tree clusters are identified in OLS charts provided (Appendix A).
- The Vegetation management will consist of:
 - tree topping and tree felling within the boundaries of Woodlot W1479 as identified on Cutting Permit 'AL' (Appendix B). All topped and felled trees will be left on site. Tree topping will involve trimming efforts to retard crowning. Obstacles have been identified on Appendix A within W1479, but new growth not identified on the OLS charts may be present.
 - tree removal within 'Licence to Cut A93271' area (Appendix C). Removal of all conifers (Merchantable and non-merchantable timber), and deciduous (Cottonwood, Alder, Maple, Willow). Merchantable timber will be decked and loaded to an agreed upon scale site. Timber must be marked in the prescribed manner prior to being transported from harvest area. Brush and debris must be piled for burning in accordance with the *Open Burning Smoke Control Regulation*.
 - tree removal within AVRA lands South West of Runway (Appendix A). Removal of all conifers (Merchantable and non-merchantable timber), and deciduous (Cottonwood, Alder, Maple, Willow). Merchantable timber will be decked and loaded to an agreed upon scale site. Timber must be marked in the prescribed manner prior to being transported from harvest area. Brush and debris may be either piled for burning in accordance with the *Open Burning Smoke Control Regulation* or chipped.

Note: The vegetation management indicated in Appendix A has been carried out in the past, new growth not identified on the OLS charts may be present. All efforts to remove growth penetrating the OLS will be mandatory.

Effort to maintain existing shrub understory will be encouraged where practicable.

SPECIFICATIONS:

Work to be carried out in accordance with 'Cutting Permit AL' (Appendix B), 'Licence to Cut A93271' (Appendix C), 'Fish Habitat Assessment and Environmental Plan' (Appendix D), and 'Section 34 Nest Survey' (Appendix E).

WORKS SCHEDULE:

All works to be completed by October 2, 2015.

RFP SUBMISSION PROCEDURE:

All proposals are to be marked "Proposal – Vegetation Management Contract Area 3" and be received by 1:00 pm on or before June 26, 2015.

Note: A site viewing of the project area will be carried out on June 22 at 1pm. Please contact Heather Adair to indicate your attendance.

For budgeting purposes please break the proposal into two subsections as follows:

1. Tree removal of identified areas
2. Hourly rate schedule for crew and equipment

ENQUIRIES:

Heather Adair, RPF
Alberni-Clayoquot Regional District
3008 – 5th Avenue
Port Alberni, BC V9Y 2E3

If you have any questions regarding this Request for Proposal please contact myself at (250) 720-2712 or via email at hadair@acrd.bc.ca



**WOODLOT LICENCE
W1479
CUTTING PERMIT AL**

Ministry of
Forests, Lands and
Natural Resource Operations

PURSUANT TO Woodlot Licence W1479 (the “Licence”), this Cutting Permit is issued to:

ISLAND ROOTS FORESTRY SERVICES LTD.
10059 BLOWER ROAD
PORT ALBERNI, BRITISH COLUMBIA
V9Y 9B2
Phone: 250-724-0549
(the “Licensee”)

1.00 PERMIT AREA AND TERM

- 1.01 Subject to the Licence and the forestry legislation, the Licensee is authorized to harvest the Crown timber from the areas of land shown on the attached Exhibit “A” map(s) (the “harvest area”).
- 1.02 The term of this Cutting Permit is **four (4) years**, beginning on the date signed by the District Manager, (See Page 3).

2.00 SPECIAL CONDITIONS AND REQUIREMENTS

- 2.01 The Licensee must comply with the conditions and requirements set out in Schedule “A” to this Cutting Permit.

3.00 TIMBER MARK

- 3.01 The timber mark(s) for timber removed under this Cutting Permit from land identified as:
 - (a) Schedule “A” Land in the Agreement is: Not Applicable
 - (b) Schedule “B” Land in the Agreement is:

**WAX
FAL**

- 3.02 All timber must be marked in the prescribed manner prior to being transported from the harvest area.

- 3.03 If directed to do so by the District Manager, the Licensee must erect signs at all exits from areas of land referred to in paragraph 1.01, clearly showing the timber mark referred to in paragraph 3.01.

4.00 SCALE-BASED STUMPAGE

- 4.01 For the purpose of determining the amount of stumpage payable in respect of timber removed from the areas of Schedule “B” Land that are authorized for removal under this Cutting Permit, the volume or quantity of timber removed will be determined using information provided in a scale of the timber.
- 4.02 The Licensee must ensure that:
- (a) all timber removed from the harvest area is scaled; and
 - (b) the scale of the timber is conducted properly in accordance with the requirements of the *Forest Act* and the regulations made under that Act.

5.00 ROADS

- 5.01 Subject to the Licence and the forestry legislation, the Licensee may use, construct, maintain or deactivate roads on the area covered by this Cutting Permit.

6.00 TIMBER HARVEST AND WASTE ASSESSMENT

- 6.01 The timber described in Schedule “B” is specified as reserved timber and the Licensee must not fell standing timber, and must not buck or remove felled or dead and down timber, as the case may be, of the species and description set out in Schedule “B”.

7.00 MISCELLANEOUS

- 7.01 The Schedules and Exhibit “A” map(s) are deemed to be part of this Cutting Permit.
 - 7.02 This Cutting Permit is deemed to be part of the Licence.
 - 7.03 The Licence will govern the interpretation of this Cutting Permit.
 - 7.04 The Licensee must notify the District Manager in writing in a form acceptable to the District Manager, when primary logging is complete and again when removal is complete.
-

SCHEDULE “A”

SPECIAL CONDITIONS AND REQUIREMENTS

1.00 TIMING OF OPERATIONS

The Licensee must ensure that all phases of timber harvesting and related operations under or associated with this Cutting Permit are synchronized.

2.00 ORDERLY CONDITION

The Licensee shall, concurrently with harvesting operations, leave all areas in an orderly and sanitary condition.

3.00 DANGEROUS TREES

3.01 The Licensee may fell trees outside of the cutblock boundary(s) identified on the attached map as Exhibit “A”, for the purposes of tree felling to eliminate a safety hazard, if the person conducting tree felling or rigging tail hold/anchor trees determines that the tree is a dangerous tree according to Work Safe BC regulations and it is within 50 metres beyond the cutting authority area.

3.02 Trees felled under paragraph 3.01 shall be subject to the Waste Assessment Policy 13.6 found in *the Ministry of Forests and Range Policy Manual* Volume 1 Chapter 13.

3.03 No authorization is given to fell, damage, alter or utilize timber located outside of the boundaries of Crown land associated with W1479.

4.00 TIMBER MARKS

4.01 In reference to paragraph 3.02 of the Cutting Permit, the Licensee must erect timber mark signs at all exits from the area of land or at changes of timber marks within the area of land referred to in the Cutting Permit paragraph 1.01, clearly showing the appropriate timber marks.

4.02 Harvesting operations must be conducted in a manner ensuring the accurate application of timber marks to timber to the satisfaction of the District Manager.

5.00 OTHER OCCUPIERS OF LAND

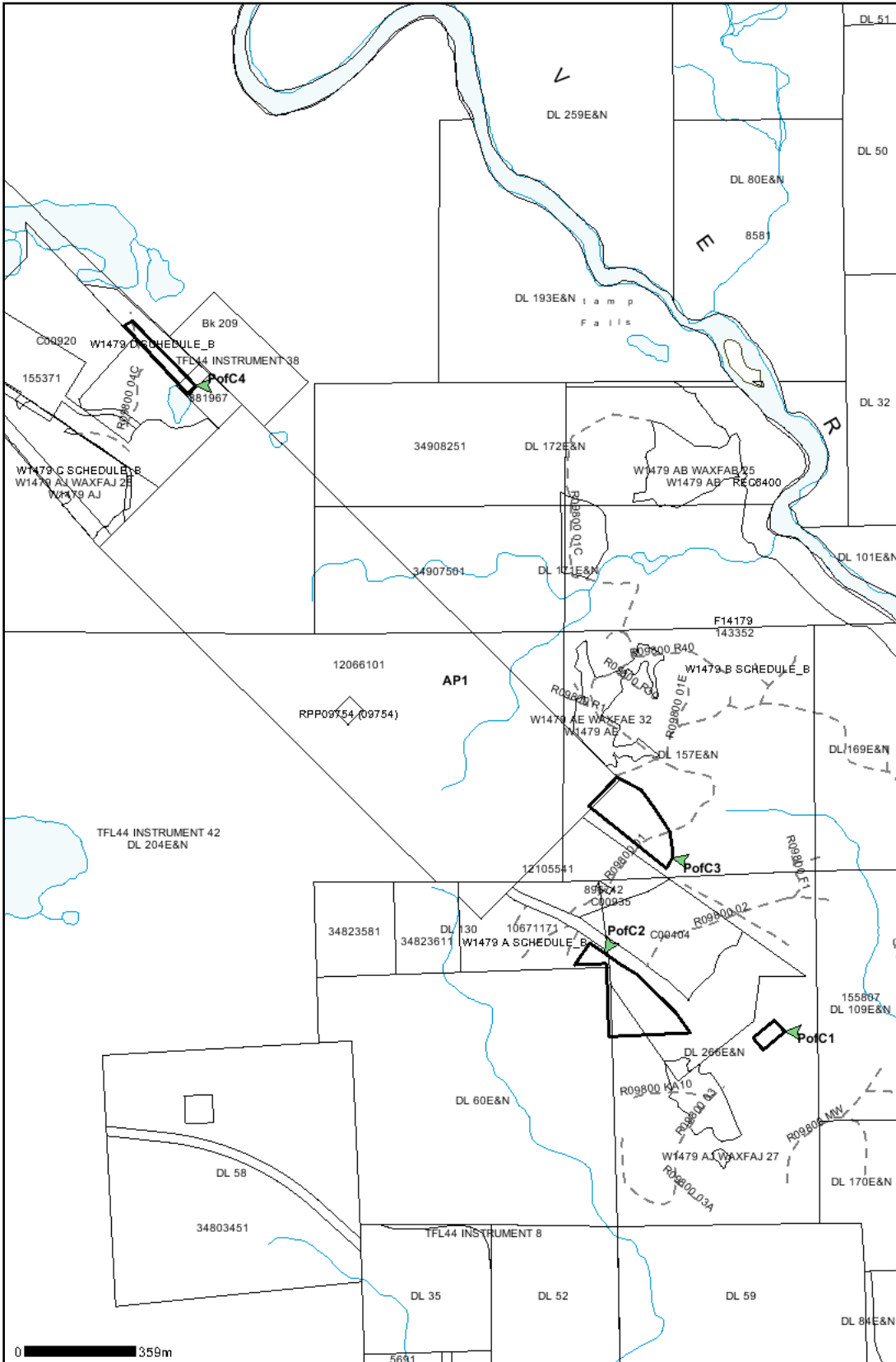
The rights granted under this Permit are subject to other rights of use and occupation and the Licensee must not interfere with exercise of those rights.

SCHEDULE “B”

1.00 RESERVED TIMBER

1.01 The following is reserved timber under this Cutting Permit: Not Applicable

MAP OF : W1479 CP AL (shown in bold black)			
FOREST REGION : RWC FOREST DISTRICT : DSI	TSA : 38 LAND DISTRICT : ALBERNI DISTRICT	PULPWOOD AGREEMENT :	MGT UNIT TYPE : Woodlot MGT UNIT NO :
ESF SUBMISSION ID : 1375049 BCGS MAPSHEET NO : 92F.036	SCALE : 1:20000 at A Size Area (Ha): 9.405	UTM : 10 NAD : NAD 83	DRAWN BY : FTA DATE : Dec 17, 2014



Legend	
	Tenure Application
	Tenure Road Application
	Retired Tenure Road
	P of C
	P of T
	Tenure Feature
	Range
	TFL
	Provincial Forest
	Forest Service Road
	Highway
	Municipal Road
	Non Status Road
	Recreation Trails
	Road Permit
	SUP Road
	Right of Way
	Schedule B CP Road
	Mineral Tenure Points
	Cities
	Waterbodies
	River/Stream
	Coastline / Island

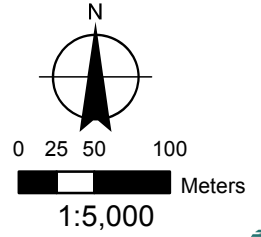
AP1 (9.405 Ha)
 PofC1 UTM10 360997, 5463712
 PofC2 UTM10 360429, 5463988
 PofC3 UTM10 360659, 5464285
 PofC4 UTM10 359192, 5465864

Ministry of Forests
South Island Forest District

Woodlot Licence
W1479
Stamp River

Harvest Plan Map
Block AP1 & 28

Licensee: Greenmax Resources,
Island Roots Forestry Services Ltd.
Reference Map: 092F036
Datum, UTM Zone: NAD 83, 10
TSA: Arrowsmith
TSB: A
FIZ: B
P.S.Y.U.: 235 E&N
Inv. Reg.: 7
Comp.: 14D
Drafted: Feb 17, 2015
By:



MINIMIZE DAMAGE TO EXISTING REGEN WHEN FALLING/TOPPING

TREES ARE MARKED WITH A BLUE RIBBON AND AN ORANGE OR BLUE PAINTED NUMBER

**Trees in Blk AP1-A, B, C & D
Timbermark WAX-FAL**

**Trees in Blk 28
Timbermark WAX-FAJ**

**Cutting Permit AJ
is active until
May 3, 2015**

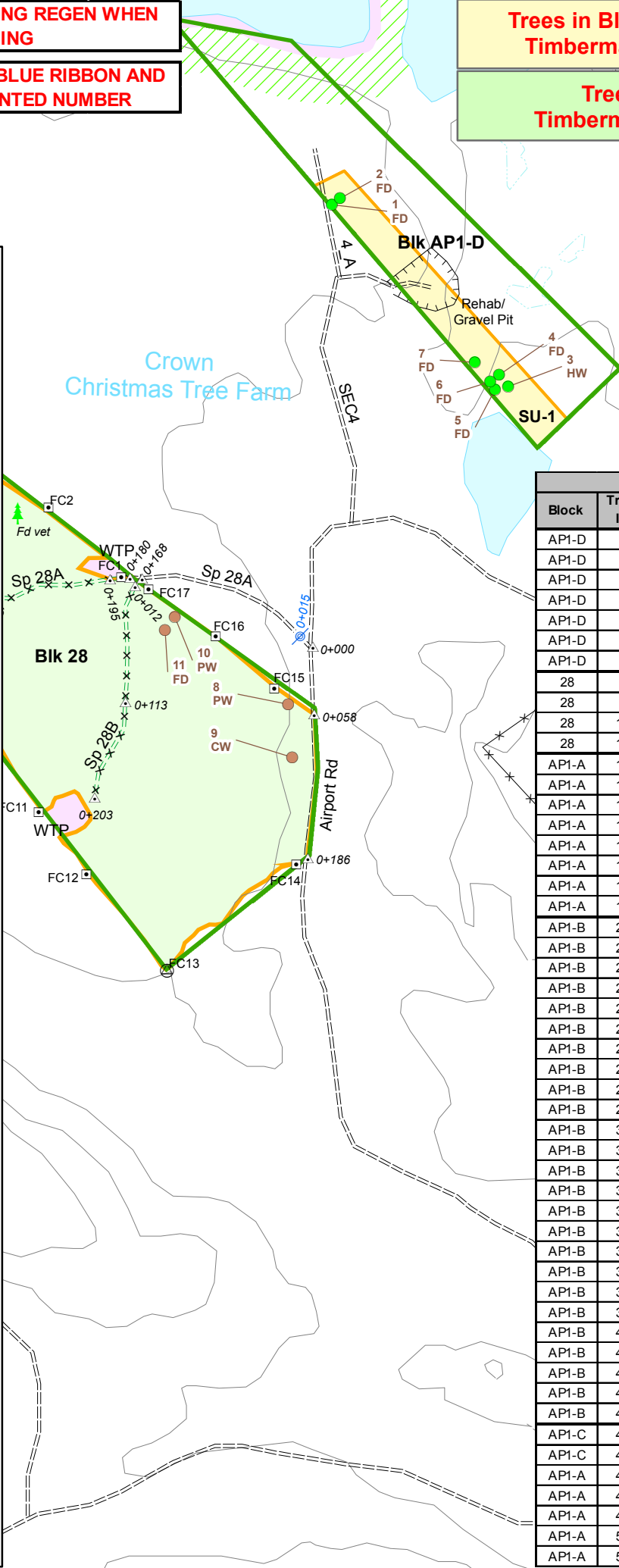
Single Tree

- Fall & Leave
- Fall & Yard
- Top Tree

Area under CP-AL
Area under existing CP-AJ

- Falling Corner
- Permanent Landing
- Temporary Landing
- Turnout
- Station
- Culvert
- RP
- Bridge, Crossing
- Washout, Bridge out
- Swamp
- Leave Tree
- Den
- Gate/Barrier
- Fish Sighting

Block
Main Road
Existing Woodlot Road
Engineered Road
Debuilt Woodlot Road
Old Grade
Hiking Trail
S1-S4 Fish Creek
S5-S6 Creek
NCD non-classified Drainage
Not Classified Creek
Fence
Gravel Pit
Steep Terrain
10m Contour Interval
Forest Cover
Hydro Line
Opening
Lake/River
Wetland
WTP / Reserve
Management Zone
Provincial Park
Block, Existing
Woodlot Boundary



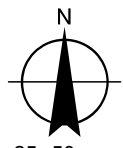
Marked Trees				
Block	Tree ID	Tree Species	Activity	Timber mark
AP1-D	1	FD	Fall & Yard	WAX-FAL
AP1-D	2	FD	Fall & Yard	WAX-FAL
AP1-D	3	HW	Fall & Yard	WAX-FAL
AP1-D	4	FD	Fall & Yard	WAX-FAL
AP1-D	5	FD	Fall & Yard	WAX-FAL
AP1-D	6	FD	Fall & Yard	WAX-FAL
AP1-D	7	FD	Fall & Yard	WAX-FAL
28	8	PW	Top	WAX-FAJ
28	9	CW	Top	WAX-FAJ
28	10	PW	Top	WAX-FAJ
28	11	FD	Top	WAX-FAJ
AP1-A	12	FD	Top	WAX-FAL
AP1-A	13	FD	Top	WAX-FAL
AP1-A	14	FD	Top	WAX-FAL
AP1-A	15	FD	Top	WAX-FAL
AP1-A	16	FD	Top	WAX-FAL
AP1-A	17	FD	Top	WAX-FAL
AP1-A	18	FD	Top	WAX-FAL
AP1-A	19	FD	Top	WAX-FAL
AP1-B	20	FD	Top	WAX-FAL
AP1-B	21	HW	Top	WAX-FAL
AP1-B	22	FD	Top	WAX-FAL
AP1-B	23	FD	Top	WAX-FAL
AP1-B	24	FD	Top	WAX-FAL
AP1-B	25	FD	Top	WAX-FAL
AP1-B	26	FD	Top	WAX-FAL
AP1-B	27	FD	Top	WAX-FAL
AP1-B	28	FD	Top	WAX-FAL
AP1-B	29	FD	Top	WAX-FAL
AP1-B	30	MB	Fall & Leave	WAX-FAL
AP1-B	31	MB	Fall & Leave	WAX-FAL
AP1-B	32	FD	Top	WAX-FAL
AP1-B	33	FD	Top	WAX-FAL
AP1-B	34	FD	Top	WAX-FAL
AP1-B	35	FD	Top	WAX-FAL
AP1-B	36	FD	Top	WAX-FAL
AP1-B	37	FD	Fall & Leave	WAX-FAL
AP1-B	38	FD	Fall & Leave	WAX-FAL
AP1-B	39	FD	Fall & Leave	WAX-FAL
AP1-B	40	FD	Fall & Leave	WAX-FAL
AP1-B	41	FD	Fall & Leave	WAX-FAL
AP1-B	42	FD	Fall & Leave	WAX-FAL
AP1-B	43	FD	Fall & Leave	WAX-FAL
AP1-B	44	FD	Fall & Leave	WAX-FAL
AP1-C	45	FD	Top	WAX-FAL
AP1-C	46	FD	Top	WAX-FAL
AP1-A	47	FD	Fall & Yard	WAX-FAL
AP1-A	48	FD	Fall & Yard	WAX-FAL
AP1-A	49	FD	Fall & Yard	WAX-FAL
AP1-A	50	FD	Fall & Yard	WAX-FAL
AP1-A	51	FD	Fall & Yard	WAX-FAL

Ministry of Forests
South Island Forest District

Woodlot Licence
W1479
Stamp River

Harvest Plan Map
Block AP1

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Drafted: Feb 17, 2015
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0 25 50 100
Meters

1:5,000



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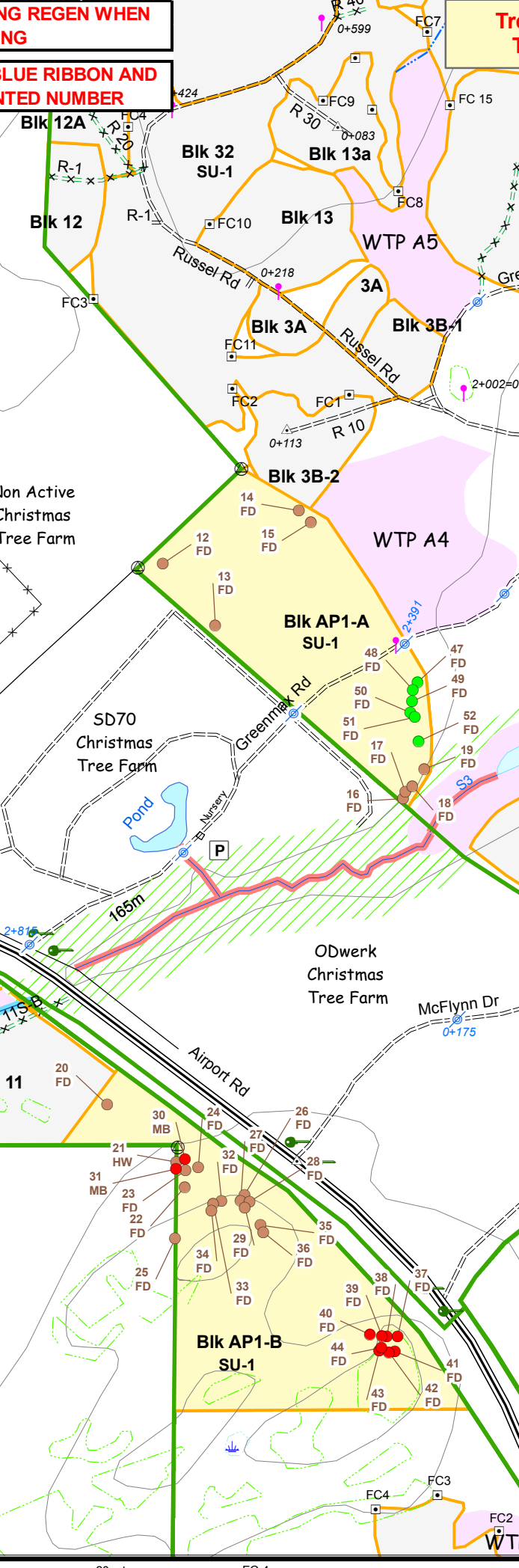
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Timbermark WAX-FAL**

Single Tree

- Fall & Leave
- Fall & Yard
- Top Tree
- Area under CP-AL
- Area under existing CP-AJ

□ Falling Corner
 ⊙ Permanent Landing
 ⊙ Temporary Landing
 ⊙ Turnout
 ⊙ Station
 ⊙ Culvert
 ⊙ RP
 ✕ Bridge, Crossing
 ✕ Washout, Bridge out
 ⊙ Swamp
 ⊙ Leave Tree
 ⊙ Den
 ⊙ Gate/Barrier
 ⊙ Fish Sighting

Block
 Main Road
 Existing Woodlot Road
 Engineered Road
 Debuilt Woodlot Road
 Old Grade
 Hiking Trail
 S1-S4 Fish Creek
 S5-S6 Creek
 NCD non-classified Drainage
 Not Classified Creek
 Fence
 Gravel Pit
 Steep Terrain
 10m Contour Interval
 Forest Cover
 Hydro Line
 Opening
 Lake/River
 Wetland
 WTP / Reserve
 Management Zone
 Provincial Park
 Block, Existing
 Woodlot Boundary



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28	9	CW	Top	WAX-FAJ
28	10	PW	Top	WAX-FAJ
28	11	FD	Top	WAX-FAJ
AP1-A	12	FD	Top	WAX-FAL
AP1-A	13	FD	Top	WAX-FAL
AP1-A	14	FD	Top	WAX-FAL
AP1-A	15	FD	Top	WAX-FAL
AP1-A	16	FD	Top	WAX-FAL
AP1-A	17	FD	Top	WAX-FAL
AP1-A	18	FD	Top	WAX-FAL
AP1-A	19	FD	Top	WAX-FAL
AP1-B	20	FD	Top	WAX-FAL
AP1-B	21	HW	Top	WAX-FAL
AP1-B	22	FD	Top	WAX-FAL
AP1-B	23	FD	Top	WAX-FAL
AP1-B	24	FD	Top	WAX-FAL
AP1-B	25	FD	Top	WAX-FAL
AP1-B	26	FD	Top	WAX-FAL
AP1-B	27	FD	Top	WAX-FAL
AP1-B	28	FD	Top	WAX-FAL
AP1-B	29	FD	Top	WAX-FAL
AP1-B	30	MB	Fall & Leave	WAX-FAL
AP1-B	31	MB	Fall & Leave	WAX-FAL
AP1-B	32	FD	Top	WAX-FAL
AP1-B	33	FD	Top	WAX-FAL
AP1-B	34	FD	Top	WAX-FAL
AP1-B	35	FD	Top	WAX-FAL
AP1-B	36	FD	Top	WAX-FAL
AP1-B	37	FD	Fall & Leave	WAX-FAL
AP1-B	38	FD	Fall & Leave	WAX-FAL
AP1-B	39	FD	Fall & Leave	WAX-FAL
AP1-B	40	FD	Fall & Leave	WAX-FAL
AP1-B	41	FD	Fall & Leave	WAX-FAL
AP1-B	42	FD	Fall & Leave	WAX-FAL
AP1-B	43	FD	Fall & Leave	WAX-FAL
AP1-B	44	FD	Fall & Leave	WAX-FAL
AP1-C	45	FD	Top	WAX-FAL
AP1-C	46	FD	Top	WAX-FAL
AP1-A	47	FD	Fall & Yard	WAX-FAL
AP1-A	48	FD	Fall & Yard	WAX-FAL
AP1-A	49	FD	Fall & Yard	WAX-FAL
AP1-A	50	FD	Fall & Yard	WAX-FAL
AP1-A	51	FD	Fall & Yard	WAX-FAL

**Blk AP1-C
SU-1**



**FORESTRY LICENCE
TO CUT
A93271**

Ministry of
Forests, Lands and
Natural Resource Operations

ALBERNI CLAYOQUOT REGIONAL DISTRICT 3008 5 TH AVENUE PORT ALBERNI, BRITISH COLUMBIA V9Y 2E3 (the "Licensee")	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, as represented by the DISTRICT MANAGER, Ministry of Forests, Lands and Natural Resource Operations SOUTH ISLAND REGIONAL DISTRICT 4885 CHERRY CREEK ROAD PORT ALBERNI, BRITISH COLUMBIA V9Y 8E9 (the "District Manager")
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The Licensee and the District Manager agree as follows:

A. AUTHORITY AND STUMPAGE

1. The Licensee and the District Manager or Forest Officer authorized by the District Manager have entered into this Licence pursuant to section 47.6 of the *Forest Act* to allow the Licensee to harvest the volume and type of the Crown timber described in paragraph C.1. The timber is located within the area shown outlined on the attached Exhibit "A" map(s) ("the licence area"). In return for this timber, the Licensee will pay the Crown stumpage as per the applicable appraisal manual (\$/m³), as amended from time to time, multiplied by the volume harvested. Payment will be due upon receipt of invoice. Before commencing any work under this Licence, the Licensee will provide the Crown with \$ N/A to be held on deposit (the "deposit") to be used in accordance with this Licence.

B. TERM

1. The term of this Licence begins on **March 24, 2015** and expires on the earlier of **March 23, 2020** or when the District Manager gives notice to the Licensee that all contractual and legislative obligations associated with this Licence have been completed.
2. Unless the District Manager specifies otherwise in writing, the Licensee must take all reasonable steps to commence harvesting operations within a reasonable period of time following the commencement of the term and no later than **six (6) months** following the commencement of the term.

C. TIMBER

1. The Licensee may harvest **150 m³** (Maximum 500 m³) from the licence area during the term limited to the following:
 - (a) Live interspersed timber identified in the professional application, dated February 18, 2015
2. Timber of the following species and grades is specified as reserved: N/A

D. HARVESTING

1. The Licensee must comply with the following conditions respecting using of equipment:
 - (a) Unless otherwise authorized by a Forest Officer the Licensee must use only:
 - (i) N/A
2. The Licensee may only harvest in accordance with the following conditions:
 - (a) None

E. TIMBER MARKING

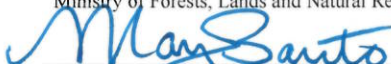
1. The Licensee must mark all timber with the following timber mark:

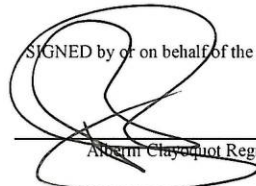
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F. OTHER CONDITIONS AND EXEMPTIONS

1. The Licensee must comply with any conditions and exemptions set out in Schedule "A" of this Licence.

This Licence is entered into on the understanding that failure by the Licensee to carry out any of its conditions may subject this Licence to suspension and cancellation by the District Manager. The parties, intending to be legally bound, have executed this agreement as of the 7th day of April, 2015

SIGNED on behalf of
Ministry of Forests, Lands and Natural Resource Operations by

 Mary Bauto, A/District Manager
 South Island Forest District

SIGNED by or on behalf of the Licensee by

 Alberni Clayoquot Regional District, Licensee

<p>1.00 OPERATIONS</p> <p>1.01 The Licensee or its designate must have this document in its possession when active on the licence area and a copy of this document must be in any vehicle transporting timber from the licence area.</p> <p>1.02 The Licensee must ensure that all timber harvested under this Licence is scaled and that the scale of the timber is conducted properly in accordance with the requirements of the <i>Forest Act</i> and regulations under that Act.</p> <p>1.03 The Licensee must not fell or utilize timber if the timber is specified in C.2 as reserved timber. The District Manager may, in a notice given to the Licensee, require the Licensee to pay, an assessment of costs associated with the damage for young growth or timber specified in C.2 as reserved that is damaged during the process of logging.</p> <p>1.04 The Licensee may only construct roads in accordance with the written directions of the District Manager.</p> <p>1.05 The Crown reserves the right to grant rights-of-way across, through or over the licence area to other parties on such terms and conditions as the Crown deems advisable provided, however, that such authorization granted to others must not be used in such a way as to unreasonably impede or obstruct the rights granted by this Licence.</p> <p>1.06 Nothing in this Licence authorizes the Licensee to in any way restrict the Crown's access to the licence area, or the right-of-way of any other authorized entrant, user or occupier of these lands.</p> <p>1.07 The Licensee acknowledges that any information released to the Licensee by the District Manager or the Government about the nature of the licence area or the quality or quantity of timber, is an estimation only and is not binding upon the District Manager, and that the Licensee informed itself about such matters prior to executing this Licence. Execution of this Licence by the Licensee is an absolute release by the Licensee of the District Manager and the Crown from any claim that the Licensee may have in respect of the nature of the licence area or the quality or quantity of timber.</p> <p>1.08 The Licensee must contact the District Manager or designate before start up and completion of operations.</p> <p>1.09 The Licensee must complete a load description slip (FS649) before transporting timber from the licence area.</p> <p>2.00 WASTE</p> <p>2.01 Subject to Paragraph 1.03, all standing or felled timber that meets or exceeds the merchantability specifications set out in the Logging Residue and Waste Assessment Manual ("Waste Manual") and that could have been cut and removed by the Licensee under this Licence, but which was not cut and removed will be dealt with as if it had been cut and removed for the purposes of determining the volume harvested under Paragraph C.1 and in calculating stumpage under Paragraph A.1.</p> <p>2.02 The District Manager may, in accordance with the Waste Manual, carry out an assessment of the volume of waste left on the licence area.</p> <p>2.03 The District Manager, in a notice given to the Licensee, may require the Licensee to pay in respect of the volume of timber determined under Paragraph 2.02, a monetary assessment for all timber whether standing or felled, that could have been cut and removed under this Licence, but is not cut and removed, and that meets or exceeds the merchantability specifications as set out in the Waste Manual.</p> <p>3.00 ABORIGINAL RIGHTS</p> <p>3.01 Notwithstanding any other provision of this Licence, the District Manager, in a notice given to the Licensee, may vary or suspend this Licence, in whole or in part, to be consistent with a court determination, or directions from the appropriate Crown agency related to aboriginal rights, aboriginal title, treaty rights or negotiations.</p> <p>4.00 NOTICE</p> <p>4.01 A notice given under this Licence must be in writing and must be delivered in accordance with this part to the address set out at the top of Page 1 of this Licence.</p> <p>4.02 A notice given under this Licence may be delivered by hand and it will be deemed to have been given on the date it is delivered by hand, or sent by mail and it will be deemed to have been given on the eighth day after its deposit in a Canada Post Office at any place in Canada.</p> <p>4.03 Either party may, from time to time, advise the other party by notice in writing, of any change of address of the party giving such notice and, from and after the giving of such notice, the address specified will, for purposes of this Licence, be considered to be the address of the party giving such notice.</p> <p>5.00 FINANCIAL MATTERS</p> <p>5.01 If the Licensee fails to perform an obligation under this Licence, the District Manager, after at least two weeks notice, may take from the deposit an amount equal to the reasonable costs to perform the obligation and may perform the obligation on the Licensee's behalf.</p>	<p>5.02 If the District Manager takes from the deposit under Paragraph 5.01, the Licensee must pay to the government on demand an amount sufficient to replenish the deposit or this Licence may be terminated by the District Manager.</p> <p>5.03 The deposit will be refunded to the Licensee when all the conditions of this Licence are met.</p> <p>6.00 LEGISLATION</p> <p>6.01 All interests, rights and privileges granted in this Licence are subject to the <i>Forest Act</i> and the <i>Forest and Range Practices Act</i> and the regulations and standards made under those Acts.</p> <p>6.02 The Licensee must comply with the requirements of all legislation applicable to activities or operations under or associated with this Licence, including but not restricted to the legislation described in 6.01 and the <i>Workers Compensation Act</i>.</p> <p>6.03 If there is a conflict between the <i>Workers Compensation Act</i> or a regulation under that Act, and a provision of this Licence, the <i>Workers Compensation Act</i>, or the regulation made under that Act, prevails, and the Licensee must immediately notify the District Manager of the conflict and follow any direction given by the District Manager with respect to the conflict, provided such direction is consistent with the <i>Workers Compensation Act</i> and the regulations under that Act.</p> <p>7.00 LIABILITY</p> <p>7.01 The Crown and District Manager are not liable to the Licensee for injuries, losses, expenses, or costs incurred or suffered by the Licensee as a result, directly or indirectly, of an act or omission of a person who is not a party to this Licence, including but not restricted to an act or omission of a person disrupting, stopping or otherwise interfering with the Licensee's operations under this Licence by road blocks or other means.</p> <p>7.02 The Licensee will indemnify the Crown and District Manager against and will save it harmless from all claims, demands, suits, causes of action, costs, expenses and losses faced, incurred or suffered by the Crown as a result, directly or indirectly, of wrongful acts and omissions on the licence area of the Licensee and/or an employee of the Licensee and/or a person who performs work directly or indirectly under contract with the Licensee and/or any other person who carries on timber harvesting or related operations on the licence area with the consent of the Licensee. The Licensee is not responsible to indemnify the Crown for the actions of a servant or agent of the Crown, or any person who uses or occupies the licence area under right granted by the Crown, acting within the scope of his or her duties.</p> <p>8.00 TERMINATION</p> <p>8.01 If this Licence expires or is cancelled or is otherwise terminated, title to all improvements, including roads and bridges, fixed on Crown land in the licence area and all timber, including logs and special forest products, located on the licence area, will vest in the Crown, without right of compensation to the Licensee.</p> <p>9.00 MISCELLANEOUS</p> <p>9.01 Licence is the entire agreement between the parties as to the matters set out in this Licence, and all previous promises, representations or agreements between the parties, whether oral or written, are deemed to have been replaced by this Licence.</p> <p>9.02 Unless otherwise defined in this Licence, if a word or phrase used in this Licence is defined in the legislation described Paragraph 6.01, the definition in the Act applies to this Licence, and where the word or phrase in the Act is replaced by a new word or phrase, this Licence is deemed to have been amended accordingly.</p> <p>9.03 Any power conferred or duty imposed on the District Manager under this Licence may be exercised or fulfilled by any person authorized to do so by the District Manager.</p> <p>9.04 Time is of the essence in this Licence.</p> <p>9.05 If any provision in this Licence is found to be invalid or unenforceable by a court of law, the remainder of this Licence is separately valid and enforceable to the fullest extent permitted by law.</p> <p>9.06 This Licence is not replaceable under the <i>Forest Act</i>.</p> <p>9.07 No extension will be granted to the term of this Licence.</p> <p>9.08 This Licence will enure to the benefit of, and be binding on, the parties and their respective heirs, executors, successors and permitted assigns.</p> <p>9.09 Any Schedules, Exhibits or attachments referenced in, or attached to this Licence are an integral part of this agreement as if set out in the body of this agreement, and the Licensee will comply with all the terms in the Schedules.</p> <p>9.10 The licensee, excluding those holding the licence in their individual capacity or as a First Nation recorded in Aboriginal Affairs and Northern Development Canada Registration System, must be registered to do business under the Business Corporations Act, and the licensee maintain such registration in good standing throughout the term of the licence.</p> <p>9.11 This document contains the entire agreement and no additional terms are to be implied.</p>
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SCHEDULE "A"

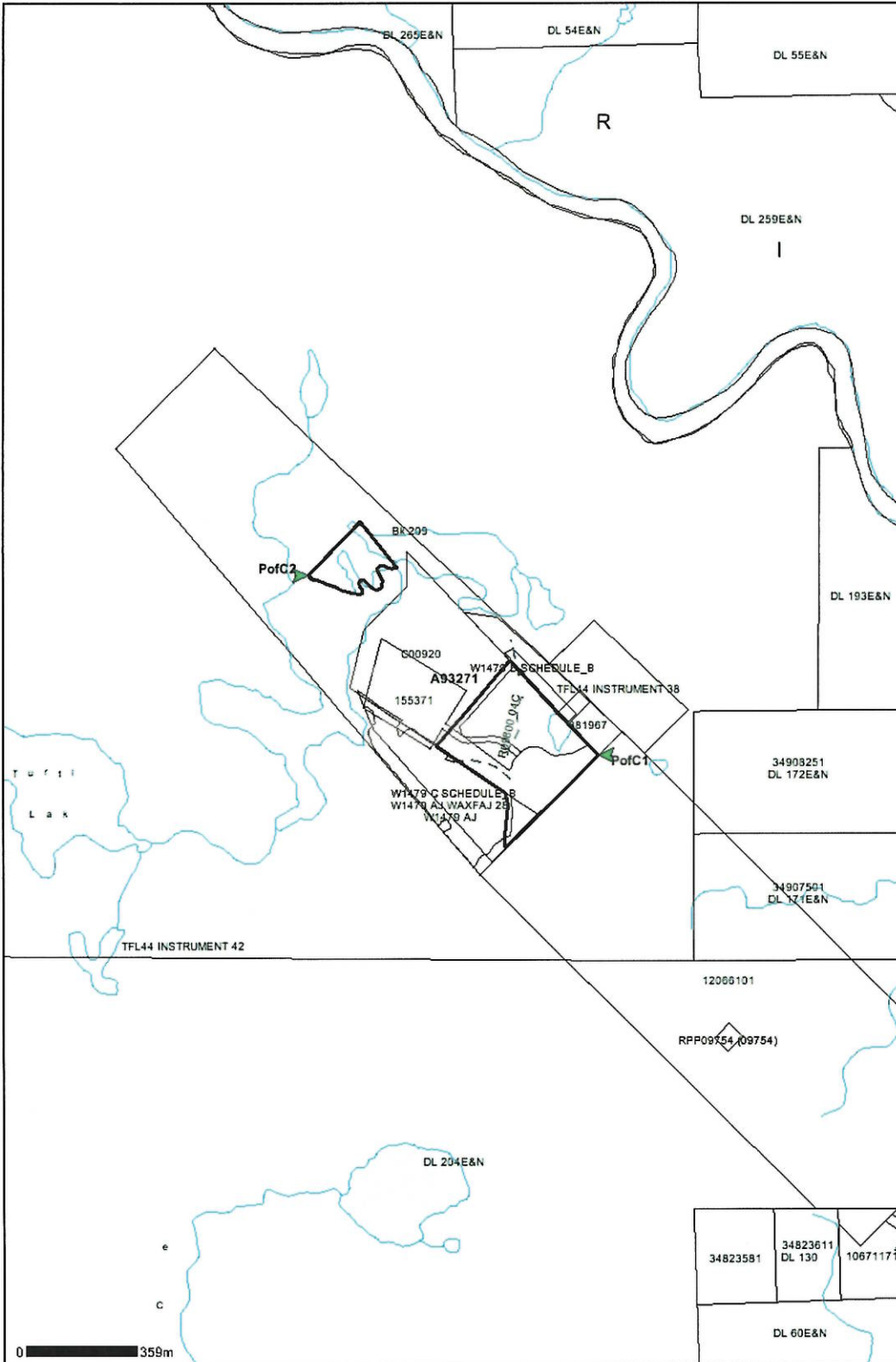
A. OTHER CONDITIONS and EXEMPTIONS:

- I. In addition to the terms and conditions set out in the body of this Licence, the Licensee will also comply with the following:
 - (a) None

- I. Notwithstanding the terms and conditions of this Licence the District Manager grants the following exemptions:
 - (a) Pursuant to section 84 (5) of the *Forest Act*, the Licensee is exempt from the marking requirements of sections 84 (1) and (3) of the *Forest Act* on the condition that the correct timber mark must be legibly and conspicuously applied to the timber removed or transported on at least two log ends at the front, two log ends at the back, and on each side of the load using paint or crayon.
 - (b) The licensee must not erect or operate a sawmill or wood processing plant on the area of land referred to in the attached Exhibit A.
 - (c) The licensee must not allow the manufacture of timber on the area of land described in the attached Exhibit A.
 - (d) Leave the salvage area, after the operations are concluded, in a clean condition with all of the wood either removed, or piled neatly out of the ditch lines.
 - (e) DANGEROUS TREES (May Utilize)

The Licensee may fell trees outside of the harvest area boundary(s) identified on the attached map as Exhibit "A", for the purposes of tree felling to eliminate a safety hazard, if the person conducting tree felling or rigging tail hold/anchor trees determines that the tree is a dangerous tree according to Work Safe BC regulations and it is within 30 metres beyond the cutting authority area.

MAP OF : A93271 (shown in bold black)			
FOREST REGION : RWC FOREST DISTRICT : DSI	TSA : 38 LAND DISTRICT : ALBERNI DISTRICT	PULPWOOD AGREEMENT :	MGT UNIT TYPE : TIMBER SUPPLY AREA MGT UNIT NO : 38
ESF SUBMISSION ID : 1403682 BCGS MAPSHEET NO : 92F.036	SCALE : 1:20000 at A Size Area (Ha): 17.058	UTM : 10 NAD : NAD 83	DRAWN BY : FTA DATE : Mar 13, 2015



Legend	
	Tenure Application
	Tenure Road Application
	Retired Tenure Road
	P of C
	P of T
	Tenure Feature
	Range
	TFL
	Provincial Forest
	Forest Service Road
	Highway
	Municipal Road
	Non Status Road
	Recreation Trails
	Road Permit
	SUP Road
	Right of Way
	Schedule B CP Road
	Mineral Tenure Points
	Cities
	Waterbodies
	River/Stream
	Coastline / Island

A93271 (17.058 Ha)
 PofC1 UTM10 359260, 5465726
 PofC2 UTM10 358350, 5466346

0 359m



Alberni Valley Airport

Fish Habitat Assessment and Environmental Plan - April 2015

Prepared for

Alberni-Clayoquot Regional District
3008 Fifth Avenue, Port Alberni, B.C.
V9Y 2E3

April 30, 2015

By

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Summary:

The Alberni – Clayoquot Regional District requested a fish habitat assessment of the flight line of the Alberni Valley Airport with respect to planned vegetation removal in the approach path. The objectives of this study were to assess the fish and wildlife habitat values in the work areas, identify the possible clearing effects and provide instruction on protection of the habitat during the maintenance procedures.

This report will be presented in two parts:

- 1.) A fisheries survey attached with drainages and environmental management,
- 2.) A separate wildlife report (later to accommodate bird presence and nesting protocols)

The Fish Habitat survey found permanent, seasonal and ephemeral waterways in the airport area. None of the current waterways will be significantly altered by removal of the overstory vegetation, as all had been previously cleared and the understory plant community is brush dominated. The brush/shrub riparian area of these drainages is much lower in height and except for directly under the flight line, there will be little change in riparian values from the vegetation management.

Environmental procedures for brushing and clearing the flight line must follow guidelines to limit impacts to the aquatic habitats. The primary recommendations of the procedures will be to limit small wood debris introduction to the waterways and require hand cleaning debris near/in fish bearing waterways. The recommended procedures will result in no serious harm to fish habitat.

The recommendations in this report are tailored to the type of habitat in the work areas.

- In non-fish areas generally of the north west side airport ditches and channels with no fish access or habitat; the treatment is to cut and fall away from the channel center line. Channel cleaning of transportable debris is still required with some special areas of higher transport near culverts required.
- In the east side airport drainages where there are almost all fish accessible/fish bearing habitat in perennial wetlands with seasonal connecting drainages. These locations require the cutting to be directed away from the water bodies. All material must be hand cleaned to above the high water mark.
- There must be a pre-work instruction with written environmental procedures as well as a follow-up inspection before the falling crew leave will be done to ensure quality control.

1.0) Introduction:

The Alberni Clayoquot Regional District (ACRD) requested a fish habitat assessment of the flight line of the Alberni Valley Regional Airport (AVRA) with respect to the planned falling of trees in the airport glide path. The objectives of this study were to assess the fish habitat values in the work areas, identify the possible clearing effects and provide instruction on protection of the fish habitat during the maintenance procedures. The tree falling plan is for total removal of the trees identified in the attached plan (noted as red dots on attached map Fig. 1). The lands in grey on the 'Clearing Project Final Map' are the lands that needed to be assessed for the following values;

- Aquatic Survey & Bird Survey, and associated recommendations for managing species present (Bird Survey is a separate report by Joe Materi, RPBio)
- Field Review all lands within ACRD private land boundary (56 ha's)
- Identify strategies to improve/maintain drainage
- Identify any concerns with airport operations on Water Quality
- Identify riparian buffers around watercourses & settling ponds
- Identify strategies within riparian buffers to remove/reduce vegetation without negatively impacting streams and ponds

Removal of the trees could affect fish habitat in many ways. Wood debris could affect direct physical damage of habitat, or accumulations of debris that cause erosion and jam the channel flow.

- The first objective is to determine fish species presence, access and utilization .
- The second objective is to advise on falling practices – areas of high sensitivity and the limitations of activity and timing.

The report has been divided into two sections, the biological assessment and then a discussion of calling/clearing aspects with respect to the biological findings from the survey and other references.

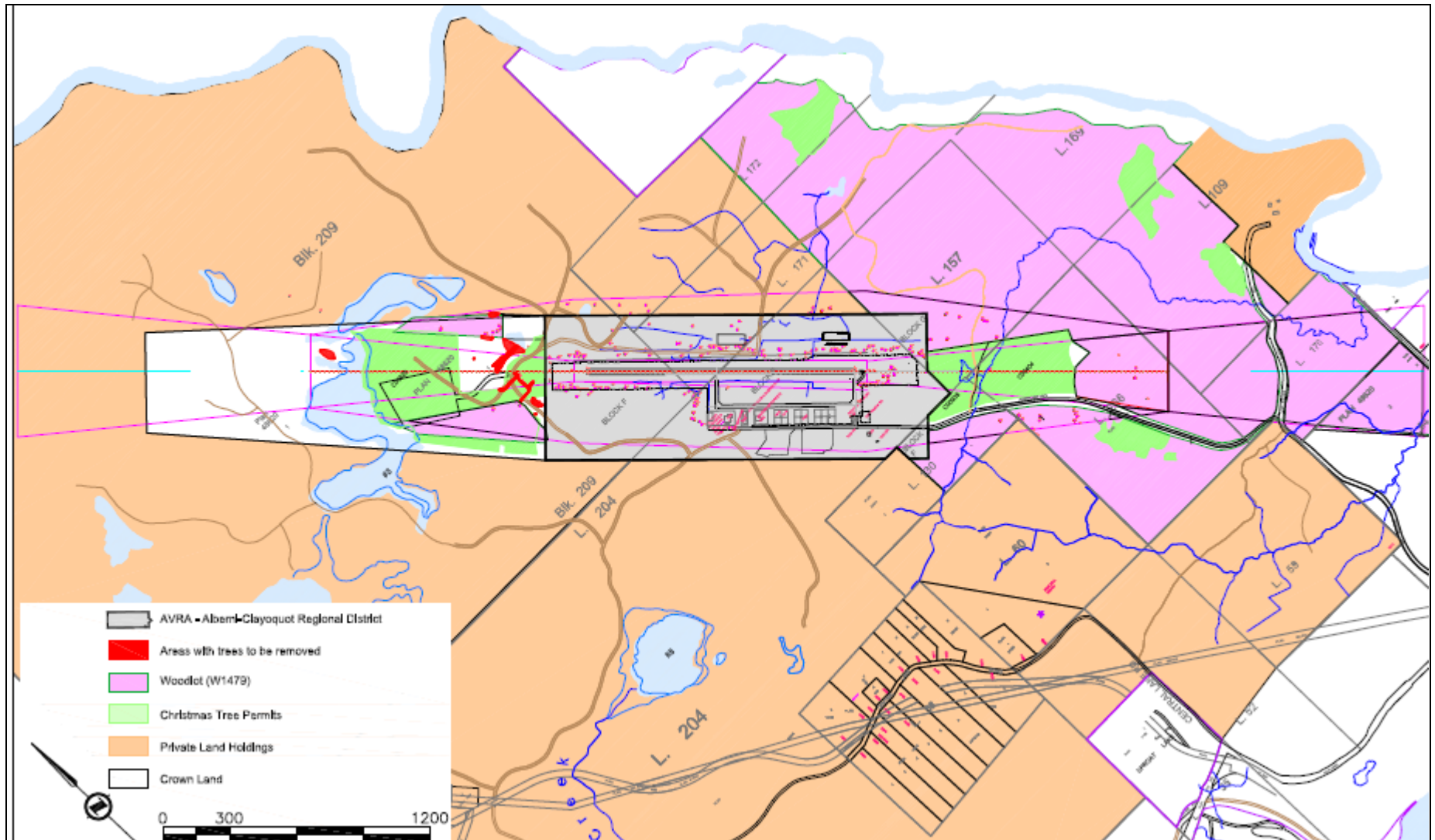
2.0) Methods:

The survey areas were assessed by D.R. Clough, RPBio and Brad Remillard, RPBio on April 7, 2015. A fish habitat inventory and determination of fish presence or utilization was conducted. Habitat was assessed to determine fish access or suitability for resident or migratory populations. The clearing area water bodies were walked and drainages identified and then measured for habitat characteristics and determination of fish utilization (access, spawning, feeding, rearing). There was no fish capture required as there was adequate indication from the habitat to determine the fish presence potential of each segment. The drainage segment maps were verified with a handheld GPS.

3.0) Survey Area:

The survey area is in the watershed of the Stamp River, which joins the Somass River downstream and then enters Alberni Inlet approximately 13.0 km downstream to the estuary. The Airport is situated approximately 1.0 km west of the Stamp River. All the airport drainages enter the Stamp River. The significant water bodies in the survey area enter Debbie Creek, a smaller tributary to the Stamp. There are other drainages in the flight line but outside the survey area such as McFlynn Creek to the south and Turtle Lake and Wetlands to the north. The 56 ha survey area in Fig. 1 is owned by the AVRA –ACRD. The surrounding land consists of Woodlot, Crown and Private Land and Christmas Tree permits. The survey area is identified in Fig. 1.

Figure 1 Alberni Airport Falling Plan and Location Map.



4.0) Inventory Results:

There were multiple types of channels in the survey area. Each was walked and assessed according to its fish habitat characteristics and vegetation management plans.

Debbie Creek Mainstem:

This is the main creek channel draining the survey area. It is approximately 1800m from the airport via the stream to the Stamp River. Debbie Creek is inaccessible to anadromous salmon due to the steep canyon walls of the Stamp River. Resident trout have permanent residence in the deeper pools of Debbie Creek. The main channel is outside the airport property in a confined small valley that is crossed by a logging road approximately halfway to the Stamp River. The 4.0 m wide channel offers both deep pools for rearing as well as riffles with gravel for spawning. The riparian canopy consists of second growth Douglas Fir, Red Alder, and Western Hemlock. This is the highest value fish habitat in the area and it lies outside the riparian treatment area.

Debbie Creek North East Tributaries and Features:

These headwater drainages of Debbie Creek originate along the north- east side of the airport runway and gravel pit. They drain a **Beaver Pond** and an airport perimeter ditch line; **Ditch 4** (Figure 2). The drainages then join at **Settling Pond 2** and out over a beaver dam to cross an old logging road. The North drainage then joins the South at the property line and then become Debbie Creek mainstem. The Beaver Pond and manmade Settling Pond 2 are the two most significant water bodies in the section. They are both over 1.5m deep and have open water areas not penetrated by substrate anchored vegetation in the middle.

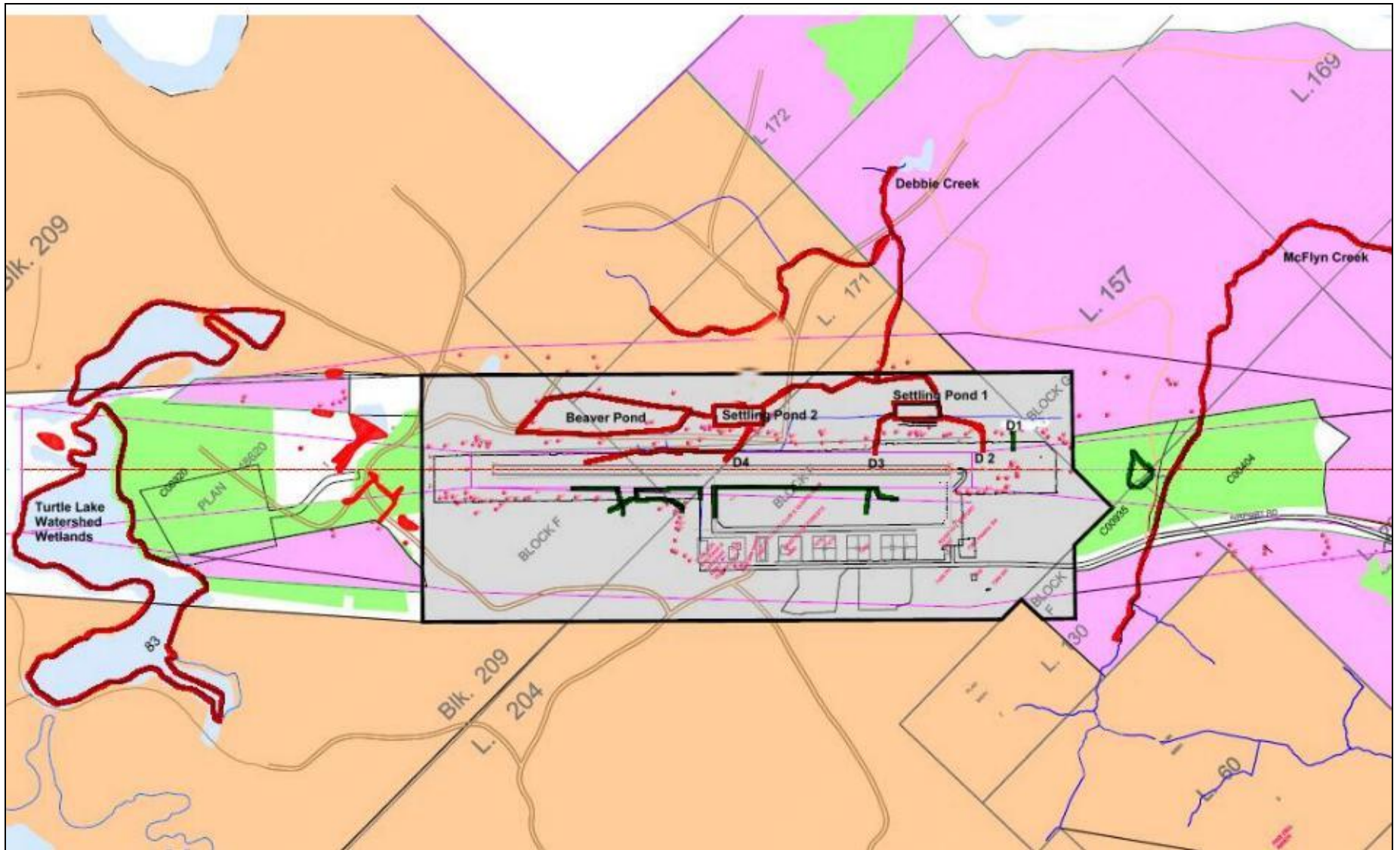
Beaver Pond:

The largest naturalized catchment of Debbie Creek in the survey area. This area has several beaver dams along its approximate 400m length and ranges in width from 5.0 to 50m. The series of dams along its length have flooded the adjacent riparian area and killed some trees through flooding. The airport side is lower relief and there is some water leaking from the pond edges over and across the Airport perimeter road and into the Ditch 4 circuit. The beaver appear to be attempting to plug this leak so they can maintain the pond depth. The beavers have flooded a band of Red Alder along this pond and are actively falling the trees for food and dam material. The riparian area of the Beaver Pond is surrounded with a 5-10m wide band of Red Alder, a few second growth Douglas Fir and a thick Salmonberry/Willow shrub line as well.

Ditch 4:

This circuit drains the north perimeter Airport Runway as well as collecting Debbie Creek West drainages from under the runway. This is a seasonal manmade drainage from airport construction. It has limited fish values as it is entirely ditch and dries in summer. There are no barriers to deter fish access into the ditch line as during the April inspection the water level was only a few inches above the receiving catchment of Settling Pond 2. There was a submerged metal (600mm diameter) culvert under the perimeter service road between Ditch 4 and the Settling Pond 2. The ditch drains 120m from the runway culvert to the culvert at the Beaver Pond. There is very low amount of riparian canopy over the Ditch 4 catchment; it consists of invasive species such as Scotch Broom, Himalayan Blackberry as well as Reed Canary Grass, small sedges and rushes.

Figure 2) Survey Drainages April 2015



Settling Pond 2:

The Beaver Pond and Ditch 4 drainages join and enter this man made 125m by 45m wide pond with a 2.0m depth. This gravel bed pond is perennial wetted habitat. There is a small grove of second growth Fir on the airport side as well as a ring of Alder and a dense surround of shrubbery. The Fir trees on the airport side are destined for falling, these trees offer south shade to the pond with 25-30 m height. The understory Alder are 10-15m height. The drainage leaves the Pond 2 and passes across a logging road and then joins the South Debbie Creek drainages at the property exit.

Debbie Creek North West Tributaries:

The north west side of the Airport is identified as the area just past the locked gate by the terminal buildings to the end of the runway. There are several culverts under the road that pass natural drainages and head directly to the Airport Runway. These drainages all pass under the runway through culverts. Most of the flow on the West side appears to enter Ditch 4. Before the airport was built and cut off these channels, there might have been some fish utilization. The culverts and ditches downstream are fish barriers. All these upper drainages are seasonal flow and will not support resident fish. The riparian area around these drainages is primarily low growing wetland species between the road and runway but there are exceptions in the better drained areas adjacent the runway where there are second growth Alder and Fir planned to be cleared. Removal of these trees will not affect the fish habitat downstream significantly.

Debbie Creek South East:

Located across the runway opposite the terminal building area, these drainages collect from culverts under the runway, then join Ditch 2 and 3 then down into Settling Pond 1. Ditch 1 is a small drainage that does not connect to them and is non-fish accessible.

Ditch 2:

It collects drainage under the runway from the terminal building area and sends it down to Settling Pond 1. It has fish access but is poor habitat for fish due to seasonal flow and poor habitat characteristics from ditching. Ditch 2 is bounded by a riparian area of grasses and Hardhack. As it approaches the settling pond, scrub Red Alder also contribute to the riparian. There are a small patch of taller trees marked for removal in this region .

Ditch 3

Similar to Ditch 2 and draining the runway culvert to a ditched channel 2.0 m wide that travels approximately 80m to Settling Pond 1. The riparian is all grass for the first 40m and then increases in height as Red Alder and the occasional Douglas Fir appear. The taller trees are marked for removal. The understory along the approach to the Pond is Hardhack, willow spp and Salmonberry. The ditch has seasonal flow.

Settling Pond 1

This is a machine dug pond that is perennially wetted. It is 30m wide and 110m long. It is approximately 1.5m deep and has open water segments as well as floating and emergent vegetation along the margins. The pond offers year round wetted habitat. There is a band of taller trees growing on the side cast mound of dug pond sediments between the pond and the runway. These trees are marked for removal.

Other Drainages and Features:

Outside the airport ownership lands, there are other water bodies are planned to be part of the falling plan.

Turtle Lake Wetlands:

Located at the north end of the runway, there is a large perennial wetland complex of approximately 10 ha. These waterbodies are fish accessible from Turtle Lake. They are high value aquatic habitat. The

Riparian zone is a sedge/sphagnum band around the wetted perimeter with a succession of height as the drainage improves. There are second growth White Pine, Red Alder and Douglas Fir (tallest) in the riparian area. There is a polygon of Douglas fir in one location directly under the flight path to be cleared.

McFlynn Creek

Located on the south end of the runway. This fish bearing stream channel crosses in a confined draw for 400m under the flight path. It is located in a Christmas Tree farm where the tree heights are all managed. There had been recent falling of small trees (3-5m ht) in the creek draw. There are no other trees to be felled in this area as they are managed for short heights by the tree farm.

Table 1) Stream Segment Summary, Alberni Airport.

Segment	Length (m)	Flow Regime	Fish access/ present	Riparian Characteristics	Habitat Quality
Debbie Creek Mainstem	1800	Seasonal with perennial pools	Yes, year round	Second growth forest	High
Beaver Pond	400	Perennial pools	Yes, but warm in summer	Beaver ponds with mixed shrubs and shorter trees	Moderate
Ditch 4	120	Seasonal	Yes, limited	Ditched with grasses	Low
Settling Pond 2	75	Perennial	Yes, year round	Dug pond with steep sidewalls limiting shoreline plants	High
Debbie Creek North West	400	Seasonal	No	Mostly lower shrub except along runway	Low
Ditch 1	60	Ephemeral	No	Grasses	Low
Ditch 2	80	Seasonal	Yes, limited	Grasses to trees	Low
Ditch 3	80	Seasonal	Yes, limited	Grasses to trees	Low
Settling Pond 1	110	Perennial	Yes, possibly year round	Trees and shrubs	High
Turtle Lake Wetlands	10 ha	Perennial	Yes, Year Round	Shrubs outwards to trees	High
McFlynn Creek	400	Seasonal with perennial pools	Yes, year round	Christmas trees	High

6.0) Discussion

Ecological Values

This is an altered area due to the airport development and logging. Both historic activities altered the landscape considerably in the study area. The remaining ecological areas are altered and it is doubtful any areas were unaltered. The channels of the waterways were moved to accommodate the runway and the logging removed the historic forest. The current Beaver Ponds and settling Ponds offer large perennial wetted habitat. Water being a key ingredient for many organisms life cycle, these ponds are the highest ecological value in the study area. The fact that the two settling ponds are man made is a bonus and offer most of the characteristics of a natural wetland. They are limited in the steep sides that are a product of being machine cut, this reduces the opportunity for shoreline vegetation to establish. The Beavers are taking advantage of the altered landscape and creating ponds as well. The disturbance results in pioneering Red Alder and willow species, this attracts the Beavers to the site. They will eat the young successional forests until they become conifer stands which are unpalatable. The beavers may stay in this area for a longer time as there is a constant re-set of the ecological clock back to early succession as the tall conifers were cut due to logging and airport clearances.

The beavers may plug culverts and drainages. They are backing up the waterways and possibly flooding the airport runway. This was evident at Ditch 4 where water from the adjacent Beaver dam was spilling across the service road and into the ditch that leads down to settling Pond 2 through a culvert under the road. If the Beavers plug this culvert, the runway may flood. This culvert is already undersized and placed improperly, such that it should be replaced with a larger pipe or bridge. A beaver baffle may be required to prevent the uncontrolled plugging of the culvert. There are several designs of metal grilles that could be applied.

Rare and Endangered Species

The BC Ecosystems Explorer was used to investigate the plant communities and species in each kingdom that are listed as threatened, endangered or extirpated from the Alberni Valley. Note the explorer tool is specific only to the entire Alberni Clayoquot Region in the data base and many species and plant communities may not exist in the airport location.

The airport survey area sits in the CWHvm1 Biogeoclimatic zone which is defined as Coastal Western Hemlock very wet maritime submontane variant (MOF Research Branch map 1994).

The results of the Explorer indicate there are 119 species listed in various kingdom categories. There are 28 vertebrates (Appendix 1) 60 vascular plants, 22 invertebrates 6 non vascular plants and 3 lichens.

Riparian Management Recommendations

The riparian management plans are to protect or avoid hazards with the aquatic resource; these values are dependent on the protection of; Fish and Wildlife, Water Quality and Instream Habitat. In conversation with airport manager Mark Fortune it was identified that all trees in their plan are to be felled, not topped. The plan identified all the taller trees closest to the runway glide path. These species include mostly second growth Douglas Fir that are now 40 to 80 years old and 25 to 40m tall. There are approximately 250 to 300 trees identified in the dots and polygons on the map.

The loss of these trees will have some impact on the ecological values of the area by reducing the shade, nutrients and habitat in the area. To limit the negative impact, the falling and cleanup strategies must;

- 1.) employ measures to protect the environment from unwarranted impacts and
- 2.) utilize opportunities to improve other environmental characteristics.

- Protective falling measures include falling and yarding away to protect streams from damage.
- The forests were historically logged and burned, there is little Coarse Woody Debris (CWD) lying on the forest floor. This material is habitat for amphibians and their food, as well as forest mammals and birds. Material that can be felled away from waterbodies and left on the ground is recommended to increase the coarse woody debris in the forest. The trunks may be bucked to settle on ground. The loading of wood in this method may include as much wood as permitted under fire safety guidelines for wood density as identified by an RPF.
- The waterways lack Large Woody Debris (LWD) that provided habitat for aquatic life. It is recommended that LWD be created using trees felled in water bodies if they can be made flood stable. Dropping long branched stems into the ponds with their ends self ballasted or cable anchored to the stumps would offer LWD biodiversity used for fish cover, bird perches and amphibian nesting anchors. An example would be Settling Pond 1 and 2 are very cover deficient and could receive trees to mimic natural windfall. Spacing of natural wood is 5-10m along the shoreline, trees could be dropped to mimic that frequency. This prescription must first be approved and identified before fallers undertake.
- Small Woody debris from falling that deposits into waterways must be hand cleaned to above high water. This small debris could transport and form jams that create erosion, migration barriers and plug culverts. Piling the wood debris in the forest limits its impact on native understory plants and creates detritus that attract scavenger beetles and initiates a food chain.

Pre-Work Riparian Management Checklist for Falling Crew.

Below is the checklist for the falling and clearing crew to use for riparian habitat protection.

- 1.) The fallers must be equipped with a map and proper instruction for each treatment area and understand where all the high value environmental areas are located.
- 2.) All segments must be flagged and numbered in the field to correspond to the falling maps.
- 3.) No falling/topping material must be dropped into the water bodies unless otherwise specified for habitat purposes by the management plan.
- 4.) In the event small material is inadvertently dropped into the water bodies, it must be pulled out with a pike pole or other tool to minimize disturbance.
- 5.) Small material is defined as branches and wood debris one is able to move by hand.
- 6.) Small material must not lie within the high water mark.
- 7.) Large material that inadvertently falls or cannot be avoided entering water bodies requires consultation with the project management on whether it stays or is removed (notify your supervisor).
- 8.) Large material dropped to the forest floor for biodiversity should be minimally limbed & bucked to encourage large pieces of wood in contact with the ground.
- 9.) Protect understory vegetation from damage of falling debris.
- 10.) Debris may be piled on the forest floor to create biodiversity piles.
- 11.) Avoid harm to remaining trees as much as safety permits.
- 12.) Dead trees that are dangerous are encouraged to be cut high rather than at the stump and cavities created for wildlife.
- 13.) Use all foot trails and avoid carrying saws and fuel through the water bodies, and do not refuel saws near water.
- 14.) A spill kit capable of saw fuel containment must be on site. (Minimum 20 pads, 15' boom, garbage bag & gloves)

There are three channel segment types identified in the survey; perennial, seasonal and ephemeral. Each segment can be protected from the topping and falling operations with good planning. Table 2 identifies the management plans for each segment.

Table 2: Riparian Management Summary

Segment	Flow Regime	Habitat Quality	Woody Debris Management
Debbie Creek Mainstem	Seasonal with perennial pools	High	Avoid water entry, remove to above high water mark
Beaver Pond	Perennial pools	Moderate	Leave any accidental dropped trunks in water.
Ditch 4	Seasonal	Low	Avoid water entry, remove to above high water mark
Settling Pond 2	Perennial	High	Follow LWD addition plan otherwise avoid water.
Debbie Creek North West	Seasonal	Low	Avoid water entry, remove to above high water mark
Ditch 1	Ephemeral	Low	Avoid water entry, remove to above high water mark
Ditch 2	Seasonal	Low	Avoid water entry, remove to above high water mark
Ditch 3	Seasonal	Low	Avoid water entry, remove to above high water mark
Settling Pond 1	Perennial	High	Follow LWD addition plan otherwise avoid water
Turtle Lake Wetlands	Perennial	High	Avoid water entry, remove to above high water mark
McFlynn Creek	Seasonal with perennial pools	High	Avoid water entry, remove to above high water mark

7.0) Conclusion

These practices are to protect aquatic habitat and enhance riparian ecological values. There is a lack of woody debris in the forest floor of the area due to past logging practices of burning slash. Leaving the trees on the forest floor will increase the coarse woody debris in the forest. This creates food and habitat for insects, small mammals and birds. If permitted, additional trees in the man made ponds will greatly increase their biological values as well. The overall impact on the aquatic areas of the Airport are expected to be low. The contribution the identified trees had to shade values over water were reasonably low. Their values to aquatic and forest life as downed wood can be a different but equally important benefit.

Yours truly,



David R. Clough, RPBio

Figure 3) Photo Page 1.



1.) Debbie Creek mainstem below airport.



3.) Ditch 4 submerged culvert under service road.



2.) Beaver Pond area - 400m long



4.) Settling Pond 2 - machine dug perennial water.

Figure 4) Photo Page 2.



5.) Ditch 1 from Runway - no fish access.



7.) Ditch 2 - leading to Settling Pond 1



6.) Ditch 2 - from Runway - with fish access.



8.) Ditch 3 at runway culvert and end fish access.

Figure 5) Photo Page 3



9.) Ditch 4/Beaver Pond overflow on road.



11.) Turtle Lake wetland - trees in flight line



10.) Beaver dam - one of five along north east.



12.) McFlynn Creek - recently felled trees in creek

Appendix 1 – BC Species and Ecosystems Explorer Search Results – 119 species

Status							
Scientific Name	English Name	Provincial	BC List	COSEWIC	SARA	Global	CF Priority
<i>Abronia latifolia</i>	yellow sand-verbena	S2S3 (2011)	Blue			G5 (1988)	1
<i>Abronia umbellata</i> var. <i>breviflora</i>	pink sand-verbena	S1 (2005)	Red	E (2004)	1-E (2005)	G4G5T2 (2014)	2
<i>Accipiter gentilis laingi</i>	Northern Goshawk, <i>laingi</i> subspecies	S2B (2010)	Red	T (2013)	1-T (2003)	G5T2 (2008)	1
<i>Allium geayeri</i> var. <i>tenerum</i>	Geyer's onion	S2S3 (2005)	Blue			G4G5T3T5 (2002)	3
<i>Anagallis minima</i>	chaffweed	S3 (2008)	Blue			G5 (1984)	2
<i>Anarta edwardsii</i>	Edwards' Beach Moth	S1 (2009)	Red	E (2009)	1-E (2011)	GNR	1
<i>Anaxyrus boreas</i>	Western Toad	S3S4 (2010)	Blue	SC (2012)	1-SC (2005)	G4 (2008)	2
<i>Aneides vagrans</i>	Wandering Salamander	S3S4 (2010)	Blue	SC (2014)		G4 (2005)	2
<i>Anemone drummondii</i> var. <i>drummondii</i>	alpine anemone	S2S3 (2000)	Blue			G4T4 (1997)	3
<i>Ardea herodias fannini</i>	Great Blue Heron, <i>fannini</i> subspecies	S2S3B,S4N (2009)	Blue	SC (2008)	1-SC (2010)	G5T4 (1997)	1
<i>Asplenium adulterinum</i>	corrupt spleenwort	S2 (2013)	Red			G3? (2011)	2
<i>Bidens amplissima</i>	Vancouver Island beggarticks	S3 (2008)	Blue	SC (2001)	1-SC (2003)	G3 (1988)	1
<i>Bolboschoenus fluviatilis</i>	river bulrush	S1 (2013)	Red			G5 (1984)	1
<i>Botrychium simplex</i> var. <i>compositum</i>	least moonwort	S2S3 (2013)	Blue			G5TNR	
<i>Brachyramphus marmoratus</i>	Marbled Murrelet	S3B,S3N (2010)	Blue	T (2012)	1-T (2003)	G3 (2013)	1
<i>Butorides virescens</i>	Green Heron	S3S4B (2009)	Blue			G5 (1996)	4
<i>Callophrys eryphon sheltonensis</i>	Western Pine Elfin, <i>sheltonensis</i> subspecies	S3 (2013)	Blue			G5TNR	4
<i>Callophrys johnsoni</i>	Johnson's Hairstreak	S1S2 (2013)	Red			G3G4 (2004)	2
<i>Calystegia soldanella</i>	beach bindweed	S3 (2008)	Blue			G5 (1988)	2
<i>Carex feta</i>	green-sheathed sedge	S2S3 (2012)	Blue			G5 (1990)	2
<i>Carex gmelinii</i>	Gmelin's sedge	S2S3 (2000)	Blue			G4G5 (1994)	2
<i>Carychium occidentale</i>	Western Thom	S2S3 (2008)	Blue			G3G4 (2002)	2
<i>Castilleja ambigua</i> ssp. <i>ambigua</i>	paintbrush owl-clover	S2S3 (2007)	Blue			G4T3T4 (2002)	2

<i>Castilleja miniata</i> var. <i>dixonii</i>	Dixon's scarlet paintbrush	S2S4 (2012)	Blue			G5T2T4 (1998)	
<i>Ceratophyllum echinatum</i>	spring hornwort	S3 (2002)	Blue			G4? (1995)	4
<i>Cercyonis pegala incana</i>	Common Wood-nymph, <i>incana</i> subspecies	S2 (2013)	Red			G5T4T5 (2003)	2
<i>Cervus elaphus roosevelti</i>	Roosevelt Elk	S3S4 (2010)	Blue			G5T4 (1997)	2
<i>Chamaesyce serpyllifolia</i> ssp. <i>serpyllifolia</i>	thyme-leaved spurge	S2S3 (2000)	Blue			G5T5 (2001)	2
<i>Chrysemys picta</i> pop. 1	Painted Turtle - Pacific Coast Population	S2 (2012)	Red	E (2006)	1-E (2007)	G5T2 (2007)	2
<i>Contopus cooperi</i>	Olive-sided Flycatcher	S3S4B (2009)	Blue	T (2007)	1-T (2010)	G4 (2008)	2
<i>Corynorhinus townsendii</i>	Townsend's Big-eared Bat	S3 (2013)	Blue			G3G4 (2014)	2
<i>Cuscuta campestris</i>	field dodder	S2S3 (2000)	Blue			G5 (2007)	2
<i>Danaus plexippus</i>	Monarch	S3B (2013)	Blue	SC (2010)	1-SC (2003)	G5 (2011)	2
<i>Dendragapus fuliginosus</i>	Sooty Grouse	S3S4 (2009)	Blue			G5 (2007)	2
<i>Dicranodontium asperulum</i>		S3 (2011)	Blue			G4G5 (1991)	3
<i>Diphyscium foliosum</i>		S2S3 (2014)	Blue			G5 (1991)	3
<i>Ditrichum schimperi</i>		S2S3 (2011)	Blue			G3G5 (2000)	3
<i>Elatine rubella</i>	three-flowered waterwort	S2S3 (2000)	Blue			G5 (1988)	2
<i>Eleocharis parvula</i>	small spike-rush	S2S3 (2000)	Blue			G5 (1984)	3
<i>Eleocharis rostellata</i>	beaked spike-rush	S2S3 (2000)	Blue			G5 (2000)	3
<i>Epilobium glaberrimum</i> ssp. <i>fastigiatum</i>	smooth willowherb	S2S3 (2000)	Blue			G5T4T5 (2004)	3
<i>Erigeron philadelphicus</i> var. <i>glaber</i>	salt marsh Philadelphia fleabane	S1 (2013)	Red			G5T1	
<i>Eucephalus paucicapitatus</i>	Olympic mountain aster	S3 (2006)	Blue			G3? (2000)	2
<i>Eumetopias jubatus</i>	Steller Sea Lion	S3B,S4N (2013)	Blue	SC (2013)	1-SC (2005)	G3 (2011)	2
<i>Euphyes vestris</i>	Dun Skipper	S2 (2013)	Red	T (2013)	1-T (2003)	G5 (2006)	2
<i>Falco peregrinus pealei</i>	Peregrine Falcon, <i>pealei</i> subspecies	S3B (2010)	Blue	SC (2007)	1-SC (2003)	G4T3 (1997)	1
<i>Festuca rubra</i> ssp. <i>mediana</i>	dwarf red fescue	S2S4 (2012)	Blue			G5TNR	
<i>Fratercula cirrhata</i>	Tufted Puffin	S3B,S4N (2011)	Blue			G5 (2003)	2

<i>Fraxinus latifolia</i>	Oregon ash	S1S2 (2013)	Red			G5 (1990)	1
<i>Githopsis specularioides</i>	common bluecup	S2 (2013)	Red			G5 (1994)	2
<i>Glaucidium gnoma swarthi</i>	Northern Pygmy-Owl, <i>swarthi</i> subspecies	S3 (2009)	Blue			G4G5T3Q (1996)	1
<i>Glehnia littoralis</i> ssp. <i>leiocarpa</i>	American glehnia	S3 (2003)	Blue			G5T5 (1991)	2
<i>Gulo gulo vancouverensis</i>	Wolverine, <i>vancouverensis</i> subspecies	SH (2010)	Red	SC (2014)		G4TH (2010)	2
<i>Haliotis kamtschatkana</i>	Northern Abalone	S2 (2002)	Red	T (2000)	1-T (2003)	G3G4 (2010)	2
<i>Hemphillia dromedarius</i>	Dromedary Jumping-slug	S2 (2008)	Red	T (2014)	1-T (2005)	G3G4 (2005)	2
<i>Hemphillia glandulosa</i>	Warty Jumping-slug	S2S3 (2008)	Blue	SC (2013)	1-SC (2005)	G3G4 (2005)	2
<i>Hesperia colorado oregonia</i>	Western Branded Skipper, <i>oregonia</i> subspecies	S1 (2013)	Red	E (2013)		G5T3T4 (2000)	2
<i>Heterodermia sitchensis</i>	seaside centipede	S1 (2007)	Red	E (2006)	1-E (2003)	G1 (2010)	1
<i>Hirundo rustica</i>	Barn Swallow	S3S4B (2009)	Blue	T (2011)		G5 (1996)	2
<i>Hydroprogne caspia</i>	Caspian Tern	S3B (2011)	Blue	NAR (1999)		G5 (1996)	2
<i>Hypericum scouleri</i> ssp. <i>nortoniae</i>	western St. John's-wort	S2S3 (2000)	Blue			G5T3T5 (2002)	3
<i>Jaumea carnosa</i>	fleshy jaumea	S2S3 (2000)	Blue			G4G5 (2000)	2
<i>Juncus brevicaudatus</i>	short-tailed rush	S1 (2013)	Red			G5 (1998)	6
<i>Juncus oxymersis</i>	pointed rush	S2S3 (2000)	Blue			G5 (1993)	3
<i>Lasthenia maritima</i>	hairy goldfields	S2S3 (2000)	Blue			G4 (1998)	3
<i>Lathyrus littoralis</i>	grey beach peavine	S2 (2003)	Red	T (2013)		G3G4 (2013)	2
<i>Leioderma sorediatum</i>	felted elf	S2S3 (2010)	Blue			G4 (2005)	3
<i>Lilaea scilloides</i>	flowering quillwort	S2S3 (2000)	Blue			G5? (1998)	3
<i>Meconella oregana</i>	white meconella	S1 (2005)	Red	E (2005)	1-E (2006)	G2G3 (2013)	1
<i>Megascops kennicottii kennicottii</i>	Western Screech-Owl, <i>kennicottii</i> subspecies	S3 (2009)	Blue	T (2012)	1-SC (2005)	G5T4 (2003)	1
<i>Mimulus dentatus</i>	tooth-leaved monkey-flower	S2S3 (2013)	Blue			G5 (1990)	3
<i>Mitellastra caulescens</i>	leafy mitrewort	S2S3 (2001)	Blue			G5 (1990)	2
<i>Monadenia fidelis</i>	Pacific Sideband	S3S4 (2008)	Blue			G4G5 (2002)	2
<i>Montia chamissoi</i>	Chamisso's montia	S2S3 (2001)	Blue			G5 (1985)	2
<i>Montia diffusa</i>	branching montia	S1 (2001)	Red			G4 (1994)	2

<i>Mustela erminea anguinae</i>	Ermine, <i>anguinae</i> subspecies	S3 (2010)	Blue			G5T3 (1996)	2
<i>Myotis keenii</i>	Keen's Myotis	S2S3 (2013)	Blue	DD (2003)	3 (2005)	G2G3 (2012)	1
<i>Myrica californica</i>	California wax-myrtle	S3 (2003)	Blue			G5 (1990)	4
<i>Myriophyllum quitense</i>	waterwort water-milfoil	S2S3 (2000)	Blue			G4? (1995)	3
<i>Myriophyllum ussuriense</i>	Ussurian water-milfoil	S3 (2002)	Blue			G3 (1998)	4
<i>Oncorhynchus clarkii clarkii</i>	Cutthroat Trout, <i>clarkii</i> subspecies	S3S4 (2004)	Blue			G4T4 (1997)	2
<i>Ophioglossum pusillum</i>	northern adder's-tongue	S2S3 (2000)	Blue			G5 (2011)	3
<i>Orthotrichum rivulare</i>		S3 (2011)	Blue			G4 (1999)	2
<i>Oxalis oregana</i>	redwood sorrel	S2S3 (2006)	Blue			G5 (1990)	3
<i>Pachydiplax longipennis</i>	Blue Dasher	S3S4 (2004)	Blue			G5 (2008)	4
<i>Parnassius clodius claudianus</i>	Clodius Parnassian, <i>claudianus</i> subspecies	S3S4 (2013)	Blue			G5TNR	6
<i>Parnassius smintheus olympianus</i>	Rocky Mountain Parnassian, <i>olympiannus</i> subspecies	S2S3 (2013)	Blue			G5T4 (2001)	2
<i>Paspalum distichum</i>	knotgrass	S1S3 (2013)	Red			G5 (1989)	
<i>Patagioenas fasciata</i>	Band-tailed Pigeon	S3S4B (2009)	Blue	SC (2008)	1-SC (2011)	G4 (2000)	2
<i>Phalacrocorax penicillatus</i>	Brandt's Cormorant	SHB,S4N (2011)	Red			G5 (1999)	1
<i>Platyhypnidium riparioides</i>		S3? (2011)	Blue			G4 (2004)	2
<i>Plebejus icarioides blackmorei</i>	Boisduval's Blue, <i>blackmorei</i> subspecies	S3 (2013)	Blue			G5T3 (2006)	3
<i>Pleurospora fimbriolata</i>	fringed pinesap	SH (2000)	Red			G4 (1994)	2
<i>Pleuropogon refractus</i>	nodding semaphoregrass	S3 (2001)	Blue			G4 (1997)	2
<i>Pohlia pacifica</i>		S1S2 (2011)	Red			GU (2000)	2
<i>Polygonum paronychia</i>	black knotweed	S3 (2005)	Blue			G5 (1990)	2
<i>Pristiloma johnsoni</i>	Broadwhorl Tightcoil	S2S3 (2008)	Blue			G3 (2013)	2
<i>Prophysaon vanatta</i>	Scarletback Taildropper	S3S4 (2008)	Blue			G4 (2002)	4
<i>Prosartes smithii</i>	Smith's fairybells	S3 (2000)	Blue			G5 (1990)	2
<i>Pseudocypbellaria rainierensis</i>	oldgrowth specklebelly	S2S3 (2010)	Blue	SC (2010)	1-SC (2012)	G3G4 (2006)	2
<i>Psilocarphus elatior</i>	tall woolly-heads	S1 (2000)	Red	E (2001)			1

					1-E (2003)	G4Q (2001)	
<i>Ptychoramphus aleuticus</i>	Cassin's Auklet	S2S3B,S4N (2005)	Blue	SC (2014)		G4 (1996)	2
<i>Rana aurora</i>	Northern Red- legged Frog	S3S4 (2010)	Blue	SC (2004)	1-SC (2005)	G4 (2008)	1
<i>Rubus nivalis</i>	snow bramble	S3? (2008)	Blue			G4? (1990)	2
<i>Rupertia physodes</i>	California-tea	S3 (2001)	Blue			G4 (1985)	2
<i>Selaginella oregana</i>	Oregon selaginella	S1S3 (2005)	Red			G4 (2011)	2
<i>Sericocarpus rigidus</i>	white-top aster	S2 (2008)	Red	SC (2009)	1-SC (2003)	G3 (2007)	1
<i>Sidalcea hendersonii</i>	Henderson's checker-mallow	S3 (2001)	Blue			G3 (2004)	2
<i>Sorex palustris brooksi</i>	American Water Shrew, <i>brooksi</i> subspecies	S2 (2010)	Red			G5T2 (1996)	1
<i>Sparganium fluctuans</i>	water bur-reed	S2S3 (2000)	Blue			G5 (1984)	3
<i>Speyeria zerene bremnerii</i>	Zerene Fritillary, <i>bremnerii</i> subspecies	S2 (2013)	Red			G5T3T4 (1998)	2
<i>Stygobromus quatsinensis</i>	Quatsino Cave Amphipod	S2S3 (2001)	Blue			G2G3 (2005)	1
<i>Sympetrum vicinum</i>	Autumn Meadowhawk	S3S4 (2004)	Blue			G5 (1985)	4
<i>Triglochin concinna</i>	graceful arrow- grass	S2 (2000)	Red			G5 (1990)	3
<i>Trillium ovatum</i> var. <i>hibbersonii</i>	dwarf trillium	S2 (2008)	Red			G5T2Q (2009)	1
<i>Uria aalge</i>	Common Murre	S2B,S4N (2005)	Red			G5 (2003)	2
<i>Verbena hastata</i> var. <i>scabra</i>	blue vervain	S2S3 (2012)	Blue			G5T5 (2002)	2
<i>Viola howellii</i>	Howell's violet	S2S3 (2000)	Blue			G4 (1988)	2
<i>Zonitoides nitidus</i>	Black Gloss	S3S4 (2008)	Blue			G5 (2003)	2

Search Summary

Time Performed Thu Apr 30 14:11:32 PDT 2015

Results 119 records.

Search Criteria Search Type: Plants & Animals
AND BC Conservation Status:Red (Extirpated, Endangered, or Threatened) OR Blue (Special Concern)
AND Forest Districts:South Island Forest District (DSI) (Restricted to Red, Blue, and Legally designated species)
AND Regional Districts: Alberni-Clayoquot (ACRD) (Restricted to Red, Blue, and Legally designated species)
AND BGC Zone:CWH
Sort Order:Scientific Name Ascending

Notes 1. Citation: B.C. Conservation Data Centre. 2015. BC Species and Ecosystems Explorer. B.C. Minist. of Environ. Victoria, B.C. Available: <http://a100.gov.bc.ca/pub/eswp/> (accessed Apr 30, 2015).
2. Forest District, MoE Region, Regional District and habitat lists are restricted to species that breed in the Forest District, MoE Region, Regional District or habitat (i.e., species will not be placed on lists where they occur only as migrants).



Ursus Environmental

Wildlife & Environmental Resource Consulting
600 Castle Way, Parksville, B.C. V9P 2R1
Ph./Fax: 250-248-1918 E-mail: ursusnanaimo@shaw.ca

Date: May 14th, 2015.

To: Heather Adair, Jr. Planner/ Bylaw Enforcement Officer
Alberni Clayoquot Regional District
3008 Fifth Avenue
Port Alberni, B.C. V9Y 2E3

Subject: Section 34 Nest Survey for Planned Clearing of Obstacles Impacting Transitional & Approach Surfaces at Alberni Valley Regional Airport.

Dear Heather:

As requested, a search for nests of species protected under Section 34 of the B.C. Wildlife Act (i.e. Bald Eagle, Osprey, Great Blue Heron) and other raptorial birds was conducted along and adjacent to the Alberni Valley Regional Airport (AVRA) on May 13th. The areas searched were based on the work zone map provided to me by the Regional District in April of 2015.

The nest survey involved foot reconnaissance and 20-minute stand-watches from eight locations near the proposed work zone (stars on Figure 1). At each stand-watch location, all tree lines in the vicinity were initially glassed using 10 x 50 binoculars. Larger trees and snags were scrutinized more closely using a 20x to 60x spotting scope. While traversing between stand-watch stations, searches for raptor/heron activity were made, along with searches for nest structures or related sign (e.g. whitewash, prey remains, fallen nest material).

Documented Raptor & Heron Nests in the Vicinity of the Off-ramp

A recent check of the Wildlife Tree Stewardship (WITS) Nest Inventory database shows only one Bald Eagle nest within a 5 km radius of AVRA. This nest (Ref. No. BAEA 107-022) is located approximately 4.5 km to the northwest of the airport, near the confluence of the Stamp River and Ash River. No Osprey or Great Blue Heron nests are indicated on the WITS database or within the Conservation Data Centre (CDC) Rare Element Occurrence database within 5 km of the work zone.

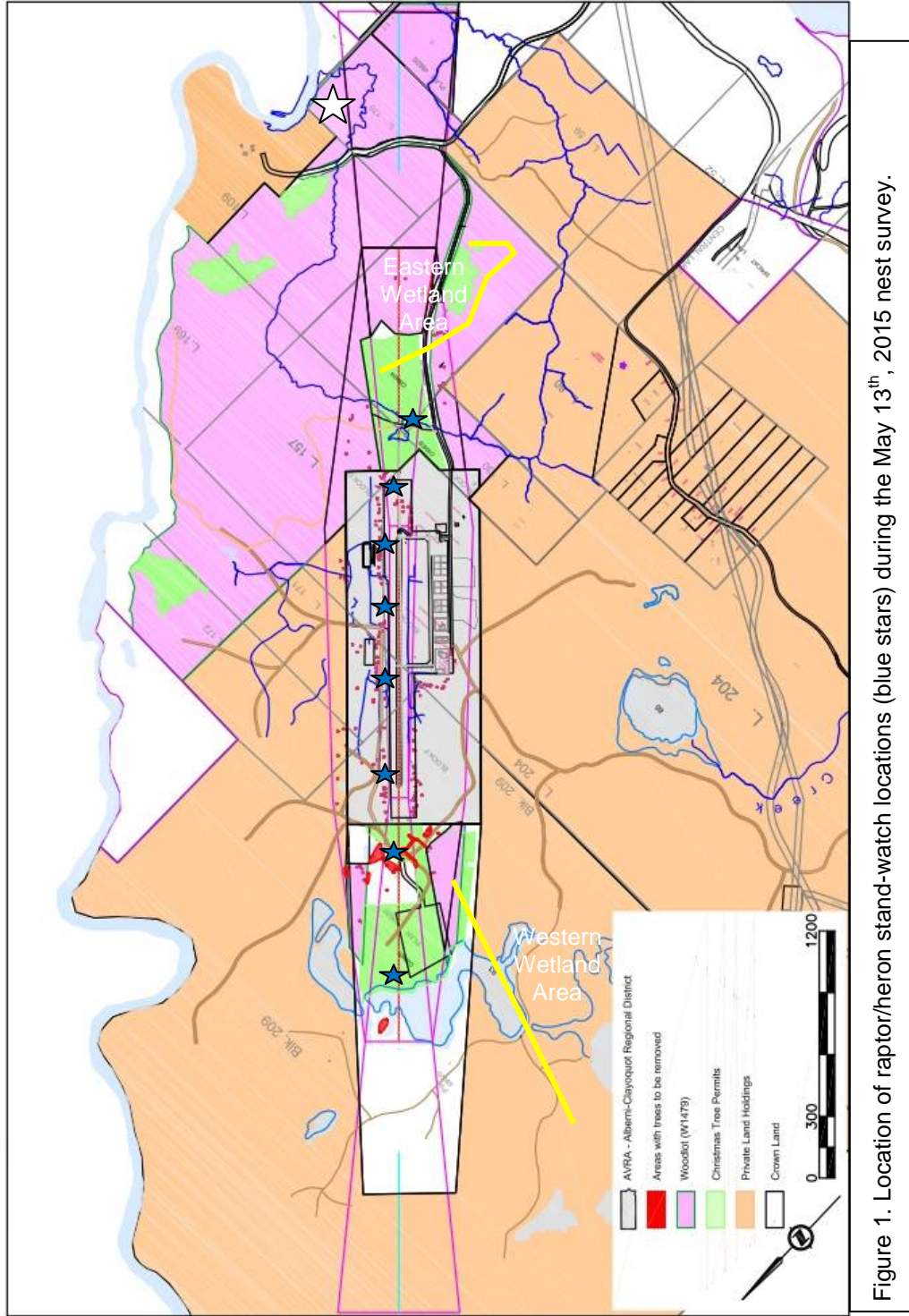


Figure 1. Location of raptor/heron stand-watch locations (blue stars) during the May 13th, 2015 nest survey.

Site Inspection

While the proposed work area is fairly extensive, there are relatively few trees with characteristics suitable for the large and heavy nests typically constructed by Bald Eagles. Mature Douglas-fir trees with some potential for this species were identified near the southeastern end of the runway, and at the opposite end of the work zone, adjacent to Turtle Lake. However, no eagle nests were found at either location. A lone adult eagle was observed briefly on a tall snag just outside the southeastern part of work zone (Figure 2), and likely hunts around the AVRA grounds on occasion. This was the only raptor activity detected within or near the work zone.

Several clusters of medium-sized Black Cottonwood trees along the north side of the runway have some potential to support nesting by Great Blue Herons or Red-tailed Hawks, but neither species was observed during the fieldwork. At 10 km from tidewater, the AVRA airport is outside the optimal distance for heron foraging during the breeding season (< 7 km). At any rate, few heron nests have historically been recorded on the western side of Vancouver Island, and fewer still close to an occasionally noisy location such as this.



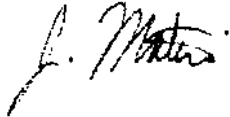
Figure 2. A perched adult Bald Eagle was recorded in the southeastern part of the work zone (red arrow), but no evidence of nesting by this species was found during the fieldwork.

Conclusions and Recommendations

No raptor or heron nests requiring protection under the BC Wildlife Act occur within the proposed tree falling locations. At a distance of 4.5 km, the nearest documented Bald Eagle nest in the area is sufficiently far away from the work zone that it will not be impacted by falling operations.

As falling trees during the breeding bird season has the potential to damage active nests of other bird species, particularly where clusters of trees are scheduled for cutting, I plan to conduct pre-clearing nest searches for passerine (perching) birds once a date for clearing has been arranged. If possible, please provide me with two weeks' notice once the start date for tree falling is known. Many thanks.

It has been a pleasure to complete this work on your behalf.

A handwritten signature in black ink, appearing to read "J. Materi". The signature is written in a cursive, slightly slanted style.

Joe Materi, R.P.Bio. No. 1128.