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# DESCRIPTION OF THE ASPEN COMMUNITY OF LANNAN FOREST

NORTHEAST QUARTER, DISTRICT LOT 206, COMOX LAND DISTRICT

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Prepared for: The Comox Valley Land Trust  
January 28, 2004

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## **DESCRIPTION OF THE ASPEN COMMUNITY OF LANNAN FOREST**

### **Introduction**

Several communities have been identified as potentially rare or threatened in the Lannan Forest (Northeast quarter, District Lot 206, Comox Land District). One such community is the Aspen-crabapple-slough sedge assemblage. The following is a description of this wetland community that was requested by the Comox Valley Land Trust. The site was visited on January 23 and 25, 2004 and assessed using the methodology outlined in *Describing Ecosystems in the Field* (BC MELP and BC MOF, 1990) and the *Field Manual for Describing Terrestrial Ecosystems* (BC MELP and BC MOF, 1998).

### **Site Description**

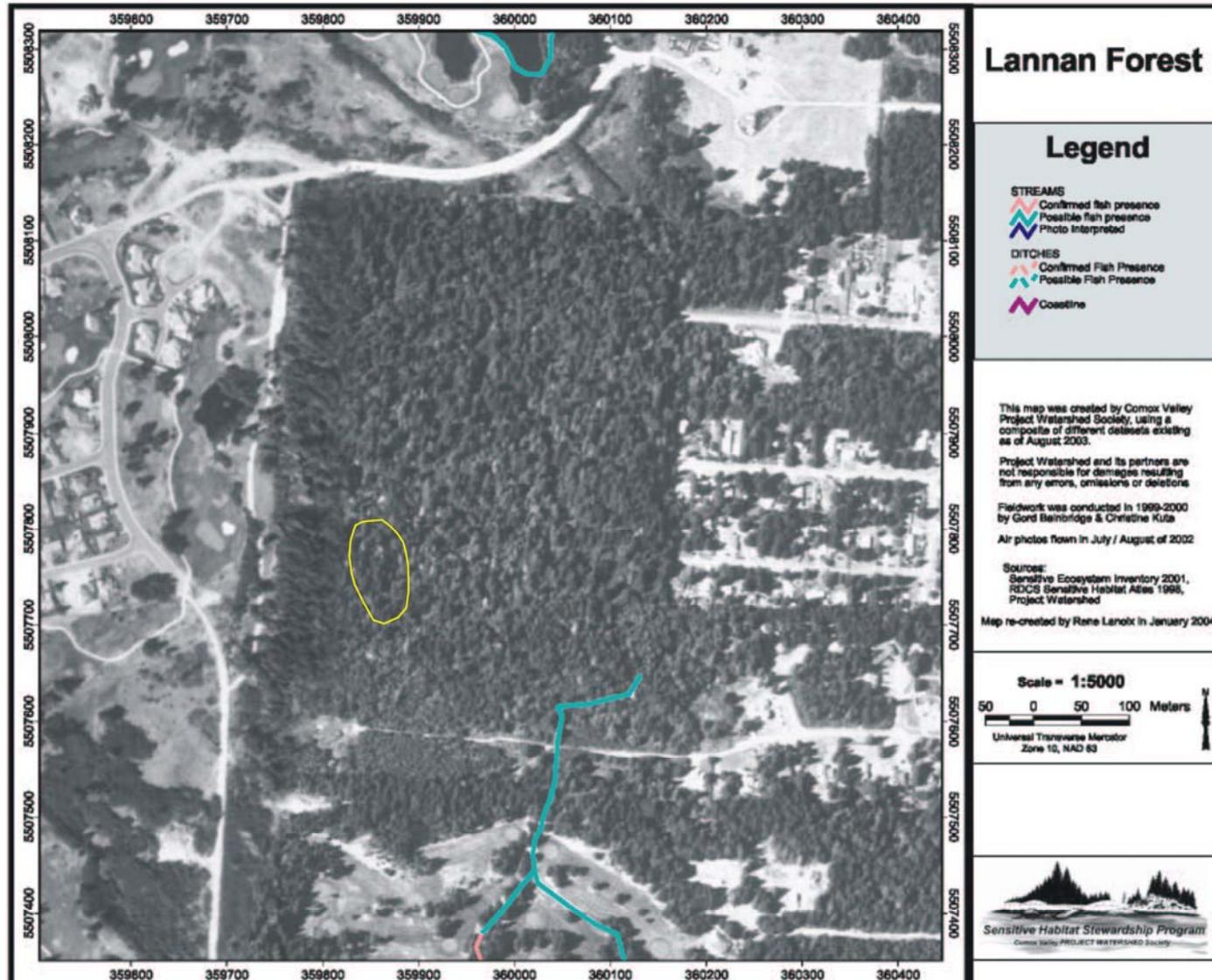
#### **Overview**

The southern part of the Lannan Forest contains a series of treed wetlands. They are roughly continuous but do form distinct communities. The Aspen wetland is located in the southwestern quadrant of the forest (Figure 1).

This community would be classed as a forested wetland or a treed swamp (Warner and Rubec, 1997). A wetland is defined as an area that is inundated at least once a year, has vegetation adapted to saturated conditions, and soil that has altered to account for a saturated state (Warner and Rubec, 1997). It is unusual to observe a forested wetland or treed swamp supporting a mature aspen stand in this area (Figure 2). This geographically rare site was found to be larger (approximately 0.75 ha) and in slightly different areas than that described in the Walther survey (Walther, 2003b). Therefore, the plant community make-up appears to be slightly different than that recorded in Walther's survey. All field data collected in this survey is found in Appendix One. Latin names and codes for plants used in this report are found in Appendix Two.

#### **Vegetation**

The main canopy was about 32 meters in height (taken with a Vertex hypsometer). There were Douglas firs that were over 36 meters in height. Most of the deciduous trees were young to mature and few were found in the understory. The coniferous trees ranged from



**Figure 1.** Yellow line represents the approximate location of the aspen-crabapple-slough sedge community in the Lannan Forest.



**Figure 2.** Aspen wetland community with mature aspens in the background and heavy fern cover.



**Figure 3.** Snags and coarse woody debris were found throughout the site.

young to mature, but there were several found in the shrub layer as well as germinants found on the forest floor or on woody substrates.

There were two distinct layers in the canopy. The aspen and mature conifers were generally the tallest trees. The lower canopy was composed of red alder with a few crabapples. There was a diverse assortment of coarse woody debris in all stages of decay throughout this community. Much of the mounding found in the site was remnant of downed trees, both coniferous and deciduous. Also found in the site were snags. Evidence of bird and insect use was evident (Figure 3). Tree frogs were heard in the site.

The tall shrub layer (2-10 meters in height) was open at this time of year, consisting of predominantly deciduous shrubs such as oceanspray, red huckleberry and crabapple. Below two meters in height, there were few shrubs. Of those found, the red huckleberry and Oregon grape were heavily browsed. Recent deer scat was found throughout the community. Most of the understory was dominated by sword fern and slough sedge. These two species did not generally mix but occurred in distinct patches (Figures 2 and 4). Salal was only found on woody substrates in this community. Few bryophytes grew on the soil substrate.

Due to the timing of this survey, none of the deciduous plants had leaves. The red alders were just beginning to set catkins. Some discrepancies in cover values may be due to the

timing of the survey. Many herbs were not visible and others, such as water parsley, wall lettuce, and herb-Robert, were just emerging. There were two grass species, neither had flowering parts used for identification. The first was a short grass that grew along one of the channels and in standing water. The other grass was much taller and grew in slightly dryer areas.



**Figure 4.** Slough sedge dominated the understory in parts of the community.



**Figure 5.** Area of standing water colonized by sedges.

### **Site**

Although in the Coastal Western Hemlock – extra dry maritime (CWHxm1) biogeoclimatic zone and subzone, there was no site series for this community type (Cadrin, 2004). Similar sites have been found in the Coastal Douglas Fir (CDFmm) zone but this is the first one noted in this area.

The site was only very slightly sloped (2-3%) but it was evident that water moved in a southeasterly direction. The region directly west of the northern part of this community was very wet with standing water throughout most of the site. Water flows through this treed swamp into adjacent wetlands, eventually flowing out of the southeastern section of Lannan Forest (Figure 1).

The heavily mounded microtopography observed in this wetland appeared to be an important factor influencing the area's hydrology and plant communities. There were subtle depressional areas that had standing water as well as other areas that had water that flowed. Regions having the most water were generally colonized by the sedges (Figure 5). The flowing areas rarely had any kind of channel. If so, the channel only existed for a few meters and then the water spread out into the understory (Figure 6).

### **Soils**

Two of the past studies were completed in the summer when water levels were low. Although there had not been any precipitation in the days prior to this survey, there was standing water present throughout much of the community. The water table was near or above the substrate level and there were areas of flowing water. Other areas had matted vegetation where flows would travel during rainfall events.

Throughout the site, occasional cobbles with the sporadic larger rock (>25 cm diameter) were found. They tended to be covered in moss or exposed in areas of inundation. Where flowing water was observed, mineral substrate was often exposed. Most of this substrate consisted of sands and gravels.

Two soil pits were excavated in this community. One pit was dug in an area dominated by slough sedge. The other pit was dug in a slightly higher area, near mature aspen and grand fir. Due to the presence of the water table, neither pit was excavated to the root restricting layer described in previous reports. Tests for pH were not performed.

The water table in the first pit was encountered within the first 2.5 centimeters below the beginning of the mineral horizons (bmh). The surface substrate was organic, including decaying wood. The soil in the pit consisted of sands and silts with some gravels and only a few cobbles. Mottles were found beginning at 10 cm (bmh), indicating periods of anaerobic conditions in the soil.

The second pit, located in a slightly higher position, had a humus form typically found in dryer locations. There was very little accumulated litter and some fungal mycelium was found in the humus (mor-moder). Fewer coarse fragments were found in the mineral soil but otherwise the textures were similar to the first pit. Seepage was encountered at 10 cm and mottles were found starting at 15 cm deep (bmh).



**Figure 6.** Water flowed in some areas in indistinct channels.

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**APPENDIX ONE:  
FIELD RESULTS**

## VEGETATION FIELD DATA

Common and Latin names for the codes below are listed in Appendix Two.

<b>% COVER BY LAYER</b>	<b>TREE (A)</b> 85%			<b>SHRUB (B)</b> 15%		<b>HERB (C)</b> 80%	<b>MOSS/LICHEN (D)</b> 2%	
	<b>A1</b>	<b>A2</b>	<b>A3</b>	<b>A LAYER</b>		<b>B1</b>	<b>B2</b>	<b>B LAYER</b>
<b>TREES</b>								
POPUTRE		45	10	<b>55</b>				
PSEUMEN2	5			<b>5</b>				
ABIEGRA	4			<b>4</b>		0.1	0.1	<b>0.2</b>
PICESIT	3			<b>3</b>				
TSUGHET	1			<b>1</b>		0.1	5 H	<b>0.1</b>
ALNURUB			15	<b>15</b>				
ACERMAC			4	<b>4</b>				
MALUFUS			3	<b>3</b>		5		<b>5</b>
RHAMPUR			0.5	<b>0.5</b>		0.3		<b>0.3</b>
<b>SHRUBS</b>								
HOLODIC						10	0.5	<b>10</b>
VACCPAR						2	0.5	<b>2.5</b>
RUBUSPE							1	<b>1</b>
ROSANUT						1	0.1	<b>1</b>
GAULSHA							1	<b>1</b>
MAHONER							0.5	<b>0.5</b>
SYMPALB							5 H	<b>&gt;1</b>
ILEX							5 T	<b>&gt;1</b>
<b>HERBS</b>				<b>C LAYER</b>				
POLYMUN				65				
CAREOBN				15				
RUBUURS				1				
OENASAR				1 H				
POACEAE1				1 H				
POACEAE2				5 T				
LINNBOR				2 T				
GERAROB				2 T				
HERB				1 T				
LACTMUR				1 T				
GALITRF								
<b>MOSS / LICHEN / SE EDLING</b>								<b>D LAYER</b>
EURHORE								1
HYLOSPL								0.1
LEUCACA								1 H
RHYTLOR								5 T
PLAGINS								5 T
ABIEGRA								2 T
TSUGHET								1 T

**NOTES:** Herb appeared to be HYPEANA but it was just emerging.

**SITE DESCRIPTION DATA**

 <b>BRITISH COLUMBIA</b> MINISTRY OF FORESTS BC ENVIRONMENT		<b>ECOSYSTEM FIELD FORM</b>		DATE		Y   M   D 04   01   23	PLOT NO.
				PROJECT ID.		FIELD NO.	SURVEYOR(S) Michele Jones Julie Micksch
<b>LOCATION</b>							
GENERAL LOCATION West side of Lannon Forest (N.E. 1/4, D.L., 206, Comox Land District)							
FOREST REGION VAN	MAPSHEET 92F 076	UTM ZONE 10	LAT./ NORTH.	5507755	LONG./ EAST.	359855	
AIRPHOTO NO.	X CO-ORD.	Y CO-ORD.	MAP UNIT				
<b>SITE INFORMATION</b>							
PLOT REPRESENTING At-crabapple-slough sedge treeed swamp							
BGC UNIT CWHxm1	NUTRIENT REGIME D-E	SITE SERIES 999	SUCCESS. STATUS MS	TRANS./ DISTRIB. SS1 (1)	ECOSECTION NAL	STRUCT. STAGE 6/tm	REALM/ CLASS Vws
MOISTURE REGIME 07	SLOPE 2 %	ASPECT 120 °	MESO SLOPE POS. MD	SURFACE TOPOG. ST.st.hmk	EXPOS. TYPE NA	PHOTO ROLL	FRAME NOS.
ELEV. 80 m.	<b>NOTES</b>						
The site was flat, with water visible in lower depressions. Water was flowing in several area, but without distinct channels. Old coarse woody debris eventually became the hummocks within the site. Most of the rocks were gravels and cobbles, rarely larger than 25 cm in diameter.							
		ORG. MATTER 87	ROCKS 0.5				
		DEC. WOOD 5	MINERAL SOIL 0.5				
		BEDROCK	WATER 7				

FS882 (1) HRE 98/5 rarely larger than 25 cm in diameter.



**SOIL DESCRIPTION DATA: Soil Pit Two**

**Pit #2**

SOIL DESCRIPTION														
GEOLOGY		BEDROCK		NA	C. F. LITH.		mx	SURVEYOR(S)		M. Jones/J. Micksch		PLOT NO.		
TERRAIN		TEXTURE		1   d	SURFICIAL		M	SURFACE		1   j	GEOMORPH.		1   U	PROFILE DIAGRAM
SOIL CLASS.		HUMUS FORM		RD	HYDROGEO.		U	WATER SOURCE		G	DRAINAGE		p	
ROOTING DEPTH		cm		ROOT RESTRICT. LAYER		DEPTH		cm	SEEPAGE		10	FLOOD RG.		AW-AM
ORGANIC HORIZONS/LAYERS														
HOR/LAYER	DEPTH	FABRIC STRUCTURE	vPOST	MYCEL. AB.	FECAL AB.	ROOTS AB.	ROOTS SIZE	pH	COMMENTS (consistency, character, fauna, etc):					
L	3.0	W	NM	X	X	X	X							
F	2.8	M	CM	C	F	F/P	F/M							
H	0.5	S	CM	F	F	F/P	F/M							
MINERAL HORIZONS/LAYERS														
HOR/LAYER	DEPTH	COLOUR	ASP.	TEXT.	% COARSE FRAGMENTS		ROOTS		STRUCTURE		pH		COMMENTS (mottles, clay films, effervesc., etc):	
Ah	2.5			SL	G	C	S	AB.	SIZE	CLASS	KIND			
Bg	20.0			LS	10	5	0	15	S	S	VF	GR		Mottles were present in B horizon at 15cm.
NOTES: Mor-moder humus form with white mycelium present. The water table began seeping at 10cm and quickly filled the pit to 5cm. Due to the presence of the water table, the pit was only excavated to 20cm. Soil was mostly sandy with a high silt content, few clays were present.														

FS882 (2) HRE 98/5

**APPENDIX TWO:  
PLANT NAMES AND THEIR CODES**

## PLANT NAMES AND THEIR CODES (TREES AND SHRUBS)

CODE	LATIN NAME	COMMON NAME
<b>TREES</b>		
ABIEGRA	<i>Abies grandis</i>	Grand fir
ACERMAC	<i>Acer macrophyllum</i>	Bigleaf maple
ALNURUB	<i>Alnus rubra</i>	Red alder
MALUFUS	<i>Malus fusca</i>	Pacific crabapple
PICESIT	<i>Picea sitchensis</i>	Sitka spruce
POPUTRE	<i>Populus tremuloides</i>	Trembling Aspen
PSEUMEN2	<i>Pseudotsuga menziesii var. menziesii</i>	Douglas fir
RHAMPUR	<i>Rhamnus purshiana</i>	Cascara
TSUGHET	<i>Tsuga heterophylla</i>	Western hemlock
<b>SHRUBS</b>		
GAULSHA	<i>Gaultheria shallon</i>	Salal
HOLODIC	<i>Holodiscus discolor</i>	Oceanspray
ILEX	<i>Ilex spp.</i>	Holly (introduced)
MAHONER	<i>Mahonia nervosa</i>	Dull Oregon grape
ROSANUT	<i>Rosa nutkana</i>	Nootka rose
RUBUSPE	<i>Rubus spectabilis</i>	Salmonberry
SYMPALB	<i>Symphoricarpos albus</i>	Snowberry
VACCPAR	<i>Vaccinium parvifolium</i>	Red huckleberry

## PLANT NAMES AND THEIR CODES (HERBS AND MOSSES)

CODE	LATIN NAME	COMMON NAME
<b>HERBS or HERB-LIKE</b>		
CAREOBN	<i>Carex obnupta</i>	Slough sedge
GALITRF	<i>Galium triflorum</i>	Sweet-scented bedstraw
GERAROB	<i>Geranium robertianum</i>	Herb-Robert
LACTMUR	<i>Lactuca muralis</i>	Wall lettuce
LINNBOR	<i>Linnaea borealis</i>	Twinsflower
OENASAR	<i>Oenanthe sarmentosa</i>	Pacific water-parsley
POACEAE		Grass family
POLYMUN	<i>Polystichum munitum</i>	Sword fern
RUBUURS	<i>Rubus ursinus</i>	Trailing blackberry
<b>MOSSES AND LICHENS</b>		
EURHORE	<i>Eurhynchium oreganum</i>	Oregon beaked-moss
HYLOSPL	<i>Hylocomium splendens</i>	Step moss
LEUCACA	<i>Leucolepis acanthoneuron</i>	Menzies' tree moss
PLAGINS	<i>Plagiomnium insigne</i>	Coastal leafy moss
RHYTLOR	<i>Rhytidiadelphus loreus</i>	Lanky moss