

Fraser River Islands Ecological Reserve # 76

Summary of observations made from 1985 to 1992



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February 2007

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Introduction

This report summarizes observations made on Ecological Reserve #76 between 1985 and 1992 by Anthea Farr (warden at that time), Dan Rempel (previous warden), Ray Gurr (naturalist) and assorted other naturalists and biologists. During this period, 8 visits to the reserve were made on the following dates: April 21/85, Sept 22/86, May 3/87, Nov 29/87, June 12/88, Aug 12/88, Oct 29/89 and Sept 27/92. The reserve was reached via canoe or the Federal Fisheries' jet boat.

For those who ask "Why now?" regarding the timing of this report, the endeavor was stimulated by a phone call from the new warden in 2006. Questions were asked and it became apparent that the new warden had no knowledge of the whereabouts of past wardens' reports.

My hope is that this report will:

- answer some of the relevant questions
- summarize past ER #76 observations in a new and useful way
- help to safeguard historical data

Anthea Farr

February, 2007



Langley Field Naturalists Ray Gurr (left) and Dan Rempel (right) provided invaluable assistance on every trip to the reserve.

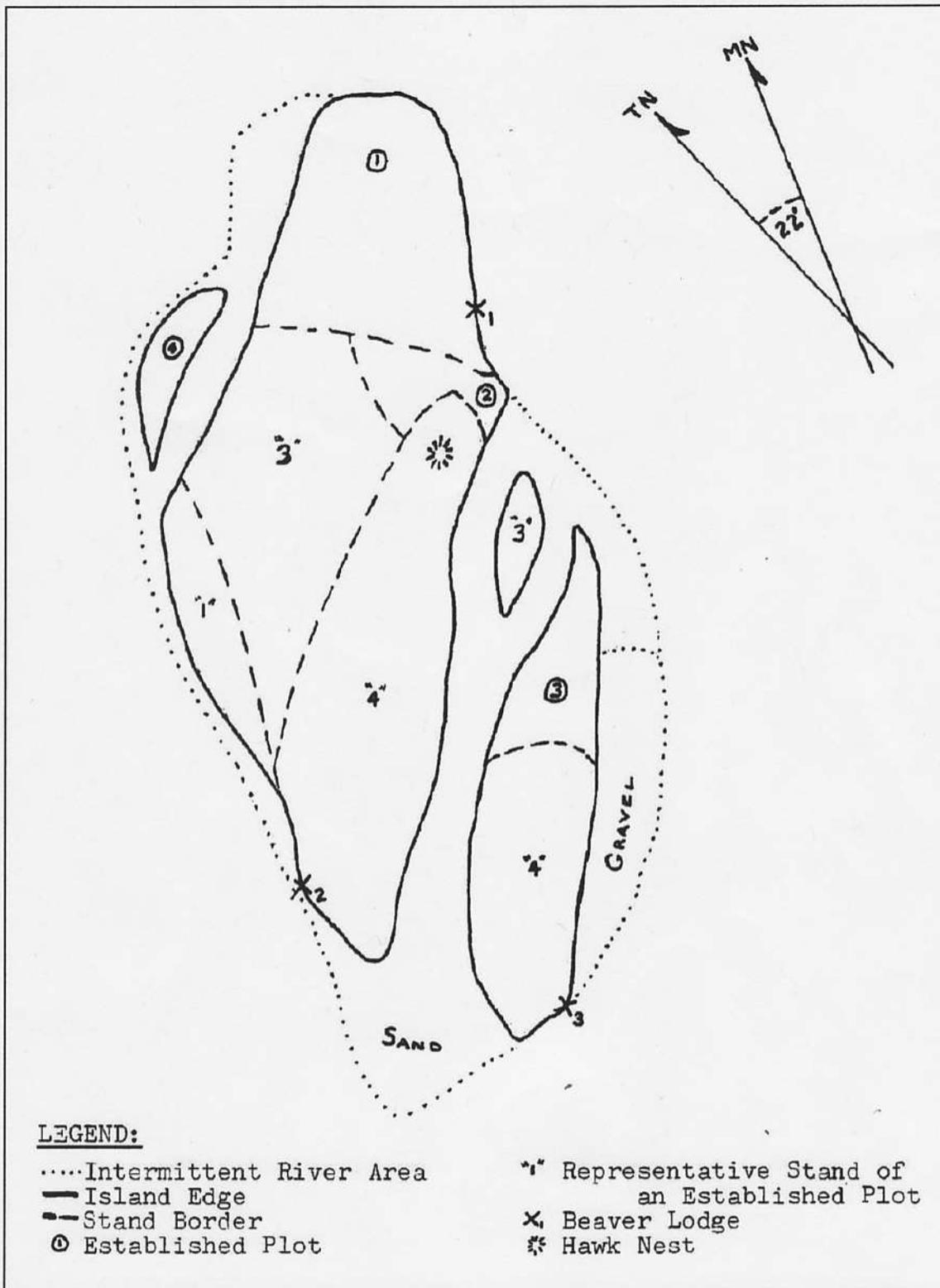


Figure 1. Map of the islands that constituted ER #76 in the 1980's (from Liner et al. 1983). The three main islands shown are referred to in this report as "Big Island", "Small Island" and "Tiny Island" (where Plot #4 is). Today (2007) the reserve includes additional land (Island 22).

adjacent upriver islands, but NOT island 22

Species Lists

Bird Species

A total of 54 bird species were seen on or near the reserve (Table 1). Five of these, the Red-tailed Hawk, Canada Goose, Wood Duck, Tree Swallow and Downy Woodpecker, were known to breed on the reserve. Adult red-tailed hawks were seen on every visit to the reserve: their nest location is shown in Fig. 1. Of particular interest was the observation (May 3/87) of two different species nesting in the same snag. The snag was a cottonwood on the west end of the tiny island. About 11 m up was a hole where Downy Woodpeckers were nesting; approximately 2 meters further up the trunk was a hole occupied by Tree Swallows.

In addition to the 5 breeding species noted, many of the songbirds seen in June on the reserve were also likely breeding there.



Common Goldeneyes (top: male,
bottom: female)



Food for eagles? Pink Salmon spawn on
the reserve every second year.

Table 1. Ecological Reserve #76 – List of Bird Species (1985 – 1992)¹

Species	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Double-crested Cormorant				(X)								
Great Blue Heron				X	X				X		X	
Swan Sp.											(X)	
* Canada Goose				X	X				X	(X)	(X)	
Mallard				X	X	X				(X)	X	
* Wood Duck					X							
Common Goldeneye				(X)							X	
Bufflehead				(X)								
Common Merganser											(X)	
Turkey Vulture									(X)			
* Red-tailed Hawk			X	X	X	X			X	X	X	
Bald Eagle			X	(X)	(X)				X	X	X	
Northern Harrier						X				(X)	X	
Cooper's Hawk									X			
Osprey					(X)							
Ruffed Grouse			X		X							
Killdeer				X	X				X			
Spotted Sandpiper						X						
Gull Sp.				(X)	(X)					X	(X)	
Rufous Hummingbird				X								
Belted Kingfisher				X						(X)	X	
Northern Flicker				X					X			
Hairy Woodpecker					X				X			
* Downy Woodpecker			X		X	X						
(Western Flycatcher?)					X							
Violet-green Swallow				X	X	X						
* Tree Swallow				X	X	X						
Barn Swallow					X	X						
Cliff Swallow					(X)							
Swift Sp.					(X)	(X)						
Common Raven					(X)	(X)			(X)	(X)	(X)	
Northwestern Crow				X	X	X						
Steller's Jay									X			
Black-capped Chickadee					X	X			X	X	X	
Golden-crowned Kinglet									X			
Winter Wren					X				X		X	
Bewick's Wren					X						X	
American Robin				X	X	X			X		X	
Swainson's Thrush						X						
Water Pipit									X			
Cedar Waxwing						X						
Northern Shrike											X	
European Starling					X	X					X	
Yellow Warbler						X						
Yellow-rumped Warbler					X				X			
Warbler Sp. # 3					X							
Brown-headed Cowbird					X							
(Black-headed Grosbeak?)						X						
(Purple Finch?)					X							
American Goldfinch					X	X						
Spotted Towhee				X	X	X					X	
Dark-eyed Junco				X							X	
White-crowned Sparrow				X	X	X			X			
Song Sparrow				X	X				X	X	X	

^{1/} Observed by A. Farr, R. Gurr & D. Rempel, with the exception of March observations by Liner et al. (1983). August observations (1988) were not located so are absent from this table.

* = Breeding (X) = Seen in vicinity of reserve

Other Species

A list of "Other Species observed" is presented in Table 2. No attempt was made to systematically inventory any of these (note the absurdly small list of insects). The mammal list is probably the most complete one, as tracks abound in the soft sand.

Terrestrial snails were observed and photographed, but expertise on snail identification was lacking at the time. Further investigation could shed light on whether or not the endangered Oregon Forestsnail occurs on the reserve.



Beaver tracks on the reserve



A terrestrial snail (Oregon Forestsnail?)



Beetles foraging on willow (*Salix* sp.)

Table 2. Ecological Reserve #76 – Other species observed (1985 – 1992)¹Mammals

Beaver	- tracks & trails seen on all visits, seen swimming near lodge June 88
Black-tailed Deer	- tracks seen on all visits
Coyote	- tracks and/or scat seen on all visits
Black Bear	- tracks and scat seen Oct 89
River Otter	- tracks seen Sept 92
Mole sp.	- hills seen Nov 87
Vole sp.	- holes seen April 85
Deer Mouse	- live-trapped March 83

Amphibians

Pacific Tree Frog	- seen or heard Sept 86, Sept 92, tadpoles seen in swamp June 88
Western Toad	- seen Sept 92

Reptiles

Garter Snake sp.	- seen Oct 89, Sept 92
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Insects

Red Admiral Butterfly	- seen Sept 92
Craneflies	- May 87
Beetles	- (see photo) Sept 86, May 87
Wasp sp.	- Sept 86 (dead & dying & nest found)

Other

Millipedes	- May 87
Land Snails	- (see photo) May 87
Pink Salmon	- spawn every second year

^{1/} Observed by Anthea Farr, with the exception of the deer mice live-trapped by Liner et al. (1983).

Plant Species

The vegetation of ER #76 is surprisingly diverse (Table 3), even if exotics are discounted. Table 3 is a combination of old and new records, with each "new" record (by A. Farr) indicated by an asterisk. As noted by J. Pojar *in* Liner et al. (1983), several species on the reserve are usually associated with interior plant communities. These include Smooth Scouring-rush (*Equisetum laevigatum*), Western Willow Aster (*Aster hesperius*), Brown-eyed Susan (*Gaillardia aristata*) and Wire-stem Muhlenbergia (*Muhlenbergia mexicana*).

Although Liner et al. (1983) write: "we can conclude with certainty that there is no Sitka spruce on the islands", the size of the Sitka spruce found by A. Farr (Nov 29/87) on the small island suggests that perhaps this spruce tree was just not encountered on earlier visits. This underscores the problem of determining whether or not any "new" species is in fact a new arrival, or if it was simply not found on earlier visits.



ER # 76 flora: Top left: Cottonwoods dominate; Bottom left: Brown-eyed Susan (*Gaillardia aristata*); Top right: Common Red Paintbrush (*Castilleja miniata*) & Oxeye Daisy (*Leucanthemum vulgare*); Bottom right: Four species of *Equisetum* occur on the reserve.

Table 3. Ecological Reserve #76 – List of Plant Species

* Denotes species added by Anthea Farr to the original list (Original list compiled by Liner et al. 1983 & Pojar)

Trees

Western Redcedar	<i>Thuja plicata</i>
Western Hemlock	<i>Tsuga heterophylla</i>
Douglas-fir	<i>Pseudotsuga menziesii</i>
Black Cottonwood	<i>Populus trichocarpa</i>
Red Alder	<i>Alnus rubra</i>
Bigleaf Maple	<i>Acer macrophyllum</i>
Paper Birch	<i>Betula papyrifera</i>
Pacific Dogwood	<i>Cornus nuttallii</i>
*Sitka Spruce	<i>Picea sitchensis</i>

Shrubs & Small Trees

Vine Maple	<i>Acer circinatum</i>
Beaked Hazelnut	<i>Corylus cornuta</i>
Cascara	<i>Rhamnus purshiana</i>
Hooker's Willow	<i>Salix hookeriana</i>
Pacific Willow	<i>Salix lasiandra</i>
Rigid Willow	<i>Salix rigida</i>
Soft-leaved Sandbar Willow	<i>Salix sessilifolia</i>
Sitka Willow	<i>Salix sitchensis</i>
Red Elderberry	<i>Sambucus racemosa</i>
Common Snowberry	<i>Symphoricarpos albus</i>
Himalayan Blackberry	<i>Rubus discolor</i>
Salmonberry	<i>Rubus spectabilis</i>
Trailing Blackberry	<i>Rubus ursinus</i>
Nootka Rose	<i>Rosa nutkana</i>
Red-osier Dogwood	<i>Cornus stolonifera</i>
Black Twinberry	<i>Lonicera involucrata</i>
Pacific Ninebark	<i>Physocarpus capitatus</i>
White Clematis	<i>Clematis ligusticifolia</i>
*Thimbleberry	<i>Rubus parviflorus</i>
*Hardhack	<i>Spiraea douglasii</i>
*English Holly	<i>Ilex aquifolium</i>
*Black Hawthorn	<i>Crataegus douglasii</i>
*Alpine-azalea (?)	<i>Loiseleuria procumbens (?)</i>
*Pacific Crab Apple	<i>Malus fusca</i>

Table 3, con't. Ecological Reserve #76 – List of Plant Species

* Denotes species added by Anthea Farr to the original list (Original list compiled by Liner et al. 1983 & Pojar)

Ferns

Licorice Fern	<i>Polypodium glycyrrhiza</i>
Sword Fern	<i>Polystichum munitum</i>
*Lady Fern	<i>Athyrium filix-femina</i>

Forbs

Pearly Everlasting	<i>Anaphalis margaritacea</i>
Western Willow Aster	<i>Aster hesperius</i>
Douglas Aster	<i>Aster subspicatus</i>
Bull Thistle	<i>Cirsium vulgare</i>
Brown-eyed Susan	<i>Gaillardia aristata</i>
Sweet-scented Bedstraw	<i>Galium triflorum</i>
Western St. John's-wort	<i>Hypericum formosum</i>
White Sweet Clover	<i>Melilotus alba</i>
One-sided Wintergreen	<i>Orthilia secunda</i>
Canada Goldenrod	<i>Solidago Canadensis</i>
Hawksbeard (?)	<i>Crepis sp. (?)</i> ¹
*Field Mint	<i>Mentha arvensis</i>
*Wall Lettuce	<i>Lactuca muralis</i>
*Black Medic	<i>Medicago lupulina</i>
*Common Dandelion	<i>Taraxacum officinale</i>
*Stinging Nettle	<i>Urtica lyalli</i>
*Fireweed	<i>Epilobium angustifolium</i>
*Yellowcress sp.	<i>Rorippa sp.</i>
*Mouse-ear Chickweed	<i>Cerastium vulgatum</i>
*Lesser Starwort	<i>Stellaria graminea</i>
*Tansy sp.	<i>Tanacetum sp.</i>
*Vetch or Peavine	<i>Vicia or Lathyrus</i>
*European Bittersweet	<i>Solanum dulcamara</i>
*Perennial Sow-thistle	<i>Sonchus arvensis</i>
*Common Red Paintbrush	<i>Castilleja miniata</i>
*Yarrow	<i>Achillea millefolium</i>
*Buttercup sp.	<i>Ranunculus sp.</i>
*Hawkweed sp. (?)	<i>Hieracium (?) (yellow flower)</i>
*Ox-eye Daisy	<i>Leucanthemum vulgare</i>
*Strawberry sp.	<i>Fragaria sp.</i>

^{1/} listed by Liner et al. (1983) as *C. occidentalis*

Table 3, con't. Ecological Reserve #76 – List of Plant Species

* Denotes species added by Anthea Farr to the original list (Original list compiled by Liner et al. 1983 & Pojar)

Horsetails

Common Horsetail	<i>Equisetum arvense</i>
Scouring-rush	<i>Equisetum hymenale</i>
Smooth Scouring-rush	<i>Equisetum laevigatum</i>
Meadow Horsetail	<i>Equisetum pratense</i>

Grasses

Bentgrass sp.	<i>Agrostis</i> sp.
Bluejoint Reed Grass	<i>Calamagrostis canadensis</i>
Tufted Hairgrass	<i>Deschampsia cespitosa</i>
Wire-stem Muhlenbergia	<i>Muhlenbergia mexicana</i>

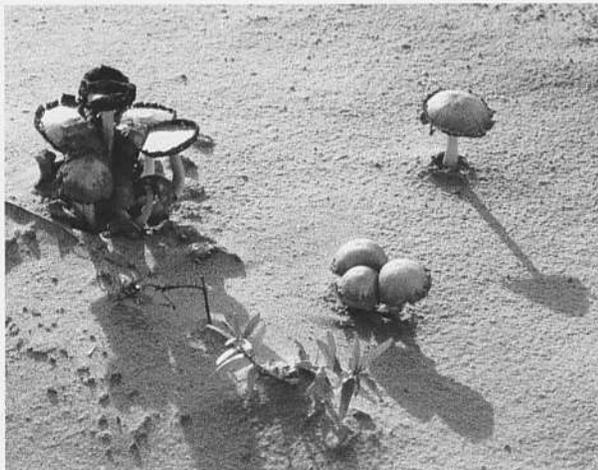
Mosses

Short-capsuled Moss sp.	<i>Brachythecium</i> sp.
Broom Moss sp.	<i>Dicranum</i> sp.
Oregon Beaked Moss	<i>Eurhynchium oreganum</i> ¹
Cat-tail Moss	<i>Isothecium stoloniferum</i> ²
Menzies' Tree Moss	<i>Leucolepis menziesii</i> ³
Badge Moss	<i>Plagiomnium insigne</i>
Lanky Moss	<i>Rhytidiadelphus loreus</i>

^{1/} also known as *Stokesiella oregana* and *Kindbergia oregana* (Pojar & MacKinnon, 1994)

^{2/} also known as *Isothecium myosuroides* (Pojar & MacKinnon, 1994)

^{3/} also known as *Leucolepis acanthoneuron* (Pojar & MacKinnon, 1994)



A variety of fungi also exist on the reserve, including Inky Cap (*Coprinus* sp.).

Beaver Activity

Three beaver lodges were identified and mapped by Liner et al. (1983) (Fig. 1). Only two of these appeared to be active, with Lodge #1 rated as the best lodge. In the period from 1985 to 1992, Lodge #1 again appeared to be the most favourable and actively used site. Lodge #3 faced a strong current, and Lodge #2 was, at low river levels, well removed from the water's edge. However, beaver activities (trails or cuttings) were at times observed in the vicinity of all three sites.

Cottonwood felling by beavers is a fact of life on the reserve. For example, on Nov 29/87, we observed beavers had recently felled 10 large cottonwoods at the west end of the small island. However, Liner et al. (1983) believed that beavers did not pose a threat to the islands' integrity. They concluded: "the river poses the only real threat to the islands' stability."



Above: The reserve's first warden, Dan Rempel, beside a beaver-felled cottonwood. Top right: Beaver lodge. Bottom right: Erosion by the river.

Human use/Outreach

In the 1980's, educating the public about ecological reserves and their purpose was deemed to be important. As stated by the Ministry of Environment & Parks (1987), wardens "serve a valuable public information role" and "inform the local public about reserves in their area". Community outreach re: ER #76 was prompted by this, and by observations of illegal activities. We documented several illegal or questionable activities: shot gun shells (April/85), a campsite (Sept/92), tree cutting by humans (along the bank, April/85, Sept/86), (survey swath about 100m long on big island, Nov/87).

Visits were made to mainland residents whose homes overlooked the reserve (on Chilliwack Mt. Rd. & Old Orchard Rd.). ER pamphlets were distributed and the reserve was discussed at length, whenever possible. Most residents showed genuine interest; only one showed no interest and would not take a pamphlet.

Through this process, useful information was obtained about human use of the reserve. First Nations people hunt deer on the islands; they probably also built the campsite structure. One concerned resident phoned the RCMP about the hunting; he was told the RCMP would take no action against First Nations. Residents had also seen a gill-netter tied up there, canoes, and a gray "government" outboard motor boat. From conversations with a Scott Paper employee, we eventually learned that the tree cutting along the banks was done by the Dept. of Public Works, to prevent trees falling into the river and becoming hazards to boats. Only the survey swath remained a mystery.



One of 85 trees cut by Public Works Dept.



Survey swath cut for unknown reasons



Campsite found on the reserve (Sept/92)

Permanent Plots

Four circular permanent plots, each with a radius of 5.5 meters, were established by Liner et al. (1983). They recorded all tree diameters and minor species within each plot (Appendix I). Attempts were made to locate these plots on most visits to the reserve between 1985 and 1992. The challenge to find them was greater when the vegetation was fully leafed out. Liner et al. (1983) gave compass bearings to Plots 1, 2 and 3 from the adjacent bank, but they did not specify exactly where on the bank. Their bearing to Plot 4 was taken from a posted ER sign.

We placed metal tags on trees from which bearings and distances to plot centers were recorded for Plots 1, 3 and 4. No large trees existed near Plot 2, so a bearing and distance from Beaver Lodge #1 were recorded (Appendix II). Also included in Appendix II is our list of plot species (Liner et al. were only able to record species in February and March).



Plot # 1



Plot # 2



Plot # 3



Plot # 4

Recommendations

- If possible, locate the permanent plots to measure tree diameters and record understory species. This would provide useful information on natural succession.
- Re-establish contact with neighbouring residents whose homes overlook the reserve. They can provide a year-round account of human activity on the islands and can report incidents of concern.
- Identify snail species on the reserve.



The need to post new ER signs is ongoing!

Appendix I. Original Plot Data (from Liner et al. 1983)

STAND TABLE FOR COTTONWOOD

Dia. Class (cm)	Stems / 0.04 ha. plot				Total/ class
	Plot 1	Plot 2	Plot 3	Plot 4	
2.6-5.0		109		1	110
5.1-7.5	2	18			20
7.6-10.0		3	2		5
10.1-12.5	2		4		6
12.6-15.0	2		5	3	10
15.1-17.5			4	8	12
17.6-20.0	1		2	2	5
20.1-22.5	1		4	4	9
22.6-25.0			6	5	11
25.1-27.5	1		1	5	7
27.6-30.0			5	4	9
30.0-32.5			1	4	5
32.6-35.0					
35.1-37.5					
37.6-40.0				2	2
40.1-42.5				1	1
42.6-45.0					
45.1-47.5					
47.6-50.0				2	2
50.1-52.5				1	1
Total/ Plot	9	130	34	42	

Appendix I., con't. Original Plot Data (from Liner et al. 1983)

STAND TABLE FOR RED ALDER & (R.O. DOGWOOD)

Dia. Class (cm)	Stems / 0.04 ha. Plot				Total/ class
	Plot 1	Plot2	Plot3	Plot4	
2.6-5.0	7 (16)	1		8	16 (16)
5.1-7.5	5			5	10
7.6-10.0				2	2
10.1-12.5				2	2
Total/ Plot	12 (16)	1		17	

Appendix II. Additional Plot Data: Plot Locations

	from metal tree tag in plot	from metal tree tag near bank	from ER sign near bank	from Lodge #1
Plot #1	245° 9.3 m	253° 45 m		
Plot #2				247° 45 - 50 m (approx.)
Plot #3	186° 4.15 m		326° 43 m	
Plot #4	318° 1.1 m		138° 13 m	

Table i. Distances and bearings to the four permanent vegetation plots.



Plot #4 in winter

Appendix II, con't. Additional Plot Data: Plant Species in Plots 1 & 2

* Denotes species added by Anthea Farr to the original plot list compiled by Liner et al. (1983)
Plot 1 additions recorded Sept/86; Plot 2 additions recorded Oct/89.

Plot #1

Black Cottonwood	<i>Populus trichocarpa</i>
Red Alder	<i>Alnus rubra</i>
*Western Hemlock	<i>Tsuga heterophylla</i>
Willow spp.	<i>Salix</i> spp.
Red-osier Dogwood	<i>Cornus stolonifera</i>
*Thimbleberry	<i>Rubus parviflorus</i>
*Hardhack	<i>Spiraea douglasii</i>
*Himalayan Blackberry	<i>Rubus discolor</i>
Pearly Everlasting	<i>Anaphalis margaritacea</i>
*Thistle	<i>Cirsium</i> sp.(?)
*Western St. John's-wort	<i>Hypericum formosum</i>
*Canada Goldenrod	<i>Solidago Canadensis</i>
*Hawksbeard (?)	<i>Crepis</i> sp. (?)
*Black Medic	<i>Medicago lupulina</i>
*Common Dandelion	<i>Taraxacum officinale</i>
Common Horsetail	<i>Equisetum arvense</i>
*Lanky Moss	<i>Rhytidiadelphus loreus</i>

(& various other mosses & grasses)

Plot #2

Black Cottonwood	<i>Populus trichocarpa</i>
Red Alder	<i>Alnus rubra</i>
Willows	<i>Salix</i> spp.
Red-osier Dogwood	<i>Cornus stolonifera</i>
*Pacific Crab Apple	<i>Malus fusca</i>
*Black Twinberry	<i>Lonicera involucrata</i>
*Common Snowberry	<i>Symphoricarpos albus</i>
Hawksbeard (?)	<i>Crepis</i> sp.(?)
One-sided Wintergreen	<i>Orthilia secunda</i>
Common Horsetail	<i>Equisetum arvense</i>

(& various mosses & grasses)

Appendix II, con't. Additional Plot Data: Plant Species in Plots 3 & 4

* Denotes species added by Anthea Farr to the original plot list compiled by Liner et al. (1983)
Plot 3 & 4 additions recorded Sept/86.

Plot #3

Black Cottonwood	Populus trichocarpa
Red-osier Dogwood	Cornus stolonifera
Common Snowberry	Symphoricarpos albus
*Black Hawthorn	Crataegus douglasii
Pearly Everlasting	Anaphalis margaritacea
*Thistle	Cirsium sp.(?)
*Canada Goldenrod	Solidago Canadensis
*Aster	Aster sp.
*Black Medic	Medicago lupulina
*White Sweet Clover	Melilotus alba
*unid. yellow flower	(Asteraceae family)
Common Horsetail	Equisetum arvense
*Lanky Moss	Rhytidiadelphus loreus

(& various other mosses & grasses)

Plot #4

Black Cottonwood	Populus trichocarpa
Red Alder	Alnus rubra
Cascara	Rhamnus purshiana
Common Snowberry	Symphoricarpos albus
Salmonberry	Rubus spectabilis
Red-osier Dogwood	Cornus stolonifera
*Black Twinberry	Lonicera involucrata
*White Clematis	Clematis ligusticifolia
*Thimbleberry	Rubus parviflorus
*Licorice Fern	Polypodium glycyrrhiza
Hawksbeard (?)	Crepis sp.(?)
Common Horsetail	Equisetum arvense

(& various mosses & grasses)
