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SKAGIT  
ECOLOGICAL RESERVES COLLECTION  
GOVERNMENT OF BRITISH COLUMBIA  
VICTORIA, B.C.  
V8V 1X4

E. THE FLORA

excerpt from report by M. Easton, Nov 1975

Whitford and Craig (1918) first recognized the transitional nature of the vegetation in the Skagit Valley between the dry Interior Forest Zone and the wetter Coastal Forest Zone. They placed the major portion of the Skagit Valley within the latter Forest Zone. Evidence for the ecotonal (transitional) nature of the Skagit Valley is based on range limitations of various tree species in or near the Recreation Area; for example, the eastern limit of broadleaf maple (Acer macrophyllum) (Plate 6), Sitka spruce (Picea sitchensis), amabilis fir (Abies amabilis), yellow cedar (Chamaecyparis nootkatensis) (except for small isolated population in the Selkirk Mountains); and the western limit of Engelmann spruce (Picea engelmannii) and Ponderosa pine (Pinus ponderosa) (Plate 7) at this latitude. This area is also the eastern limit for coastal populations of grand fir (Abies grandis), western hemlock (Tsuga heterophylla) and western white pine (Pinus monticola).

More recently, Krajina (1965, 1969) has mapped the Skagit Valley as an eastern extremity of the Coastal Douglas fir (Pseudotsuga meniesii) Zone, separated from the main zone by elements of the Western Hemlock, Mountain Hemlock (Tsuga mertensiana) and Alpine Tundra Zones. Salal (Gaultheria shallon) and sword fern, normally abundant in the Coastal Douglas-fir Zone, are sporadic in occurrence in the Valley. One factor which may account for the differences in relative abundance of the plant species associated with the Coast Douglas-fir Zone in the Skagit Valley is the difference in elevation, the Valley floor being 1000 feet greater than the major portion of the Coastal Douglas-fir Zone on the Mainland and about 100 feet greater than the maximum elevation listed for this Zone on Vancouver Island.

The I.J.C. Report (1971) suggests that the lower Skagit and the Klesilkwa River are similar to the Coastal Douglas-fir Zone which is characterized by annual precipitation from 30 to 60 inches and by the occurrence of Douglas-fir, western red cedar (Thuja plicata), grand fir, Sitka spruce, white pine, lodgepole pine (Pinus contorta), bitter cherry (Prunus emarginata), black cottonwood (Populus trichocarpa), red alder (Alnus rubra), vine maple (Acer circinatum), and broadleaf maple (Krajina, 1969). Climax stands of Western hemlock occur in areas of temporary seepage, but on mesic sites Douglas-fir is the climax species.

Easton, M. 1975. Natural feature analysis of the Skagit Valley Recreation Area. Part 1. Parks Branch, Dpt Recreation and

The Coastal Douglas-fir Zone in the Skagit Valley typically occurs on the valley floor, and intergrades with the Western Hemlock Zone between 2,000 and 3,000 feet and with the Mountain Hemlock Zone between 4,000 and 5,000 feet, depending upon exposure and local climate.

Slaney (1973) argues that since moisture gradients are largely responsible for the occurrence of any particular vegetation zone in the Valley, regions which are in rain shadow tend to support the dry Interior Forest Zone. Whereas, the International Joint Commission Report considers the plants of the Dry Interior Zone to be either relics from a formerly different climatic type which occurred in the Valley but has since changed thus forcing the dry interior plants to evolve so that they may survive in a habitat that is otherwise too wet for the main populations of these species; or the dry interior plants are actual marginal populations that survive only in habitats where competition from species more adapted to the climate is lessened (i.e. on dry rocky outcroppings and in rain shadows).

The International Joint Commission Report (1971) further points out that the uniqueness of the Skagit Valley is determined by its low elevation within the Coastal-Interior transition zone.

"This allows a mixing of low-elevation plants from the Pacific Coast Forest. This type of transition is relatively uncommon for two reasons. Firstly, the usual transition between Coastal and Interior Zones occurs at Subalpine and Alpine elevations, thus keeping the low-elevation plants from the Interior and Coast spacially separated. Secondly, this type of transition is normally restricted to the Cascade or eastern Coastal Mountain Ranges in British Columbia, and, because of the limited northward extent of the Ponderosa Pine Zone, to the southern fifth of the Province.....plant growth closely reflects the transitional nature of the macroclimate.

#### PLANT ASSOCIATIONS

There are several distinct plant communities which occur in the Skagit Valley, the composition of which is determined by the moisture gradient in the soil and the composition of the soil itself. The International Joint Commission Report (1971) uses the five landform-soil units of the lower Skagit Valley to characterize the plant communities, since the woodland habitats generally coincide with the landform units, although more than one habitat may occur on some units.

The Slaney Report (1973) on the vegetation of the Skagit Valley determined the major plant associations on the basis of the successional stage and of the combination of ecologically related species.

The present report will follow the method of Slaney (1973) in using the various forest associations to show the succession stage reached after disturbance by either fire or logging. The various plant habitats are shown in Figure 4, the alpine meadow classification is not represented nor are the hemlock, mountain hemlock or the amabilis fir zones. Many of these plant associations and habitats will be discussed in greater detail with respect to their interpretative value in a later section.

A list of the flora of the Skagit Valley Recreation Area is presented in Appendix 1.

1. Deciduous Forest (more than 40' tall)

Black cottonwoods 40-50 years old provide a canopy which allows some light to reach the heavily leaf-littered forest floor. Some small cedar, grand fir and Douglas fir also grow here. At one time many of these cottonwood stands contained many large cedars which have since succumbed to shake cutters. Both large stumps and shake workings are usually evident. The shrub layer mainly consists of thimbleberry and red osier dogwood with some willow (Salix scouleri) and snowberry. There is generally little ground vegetation because of the heavy accumulation of deciduous leaf litter. The usual ground cover species include bedstraw, Pyrola (several species), horsetail (by the riverbank), baneberry, staf flower, false box, lady fern, moss, and pearly everlasting (along old roads or the forest edge.)

2. Deciduous Regeneration (less than 40' tall)















The first major tree regeneration after logging operations involves mostly red alder and black cottonwood, the former predominating initially. The shrub understory forms an almost impenetrable growth of vine maple, red osier dogwood, willow and rose with lesser amounts of snowberry, thimbleberry, red elderberry and small cedar saplings. Twin flower occurs under the alder stands, while cascara may grow in areas shaded either by alder or shrubs such as vine maple. The few ground cover species that are present include lady fern (Athyrium filix-femina), northern bedstraw, bluejoint grass (Calamagrostis canadensis) and moss.

3. Mixed Deciduous and Coniferous Forest (advanced succession)

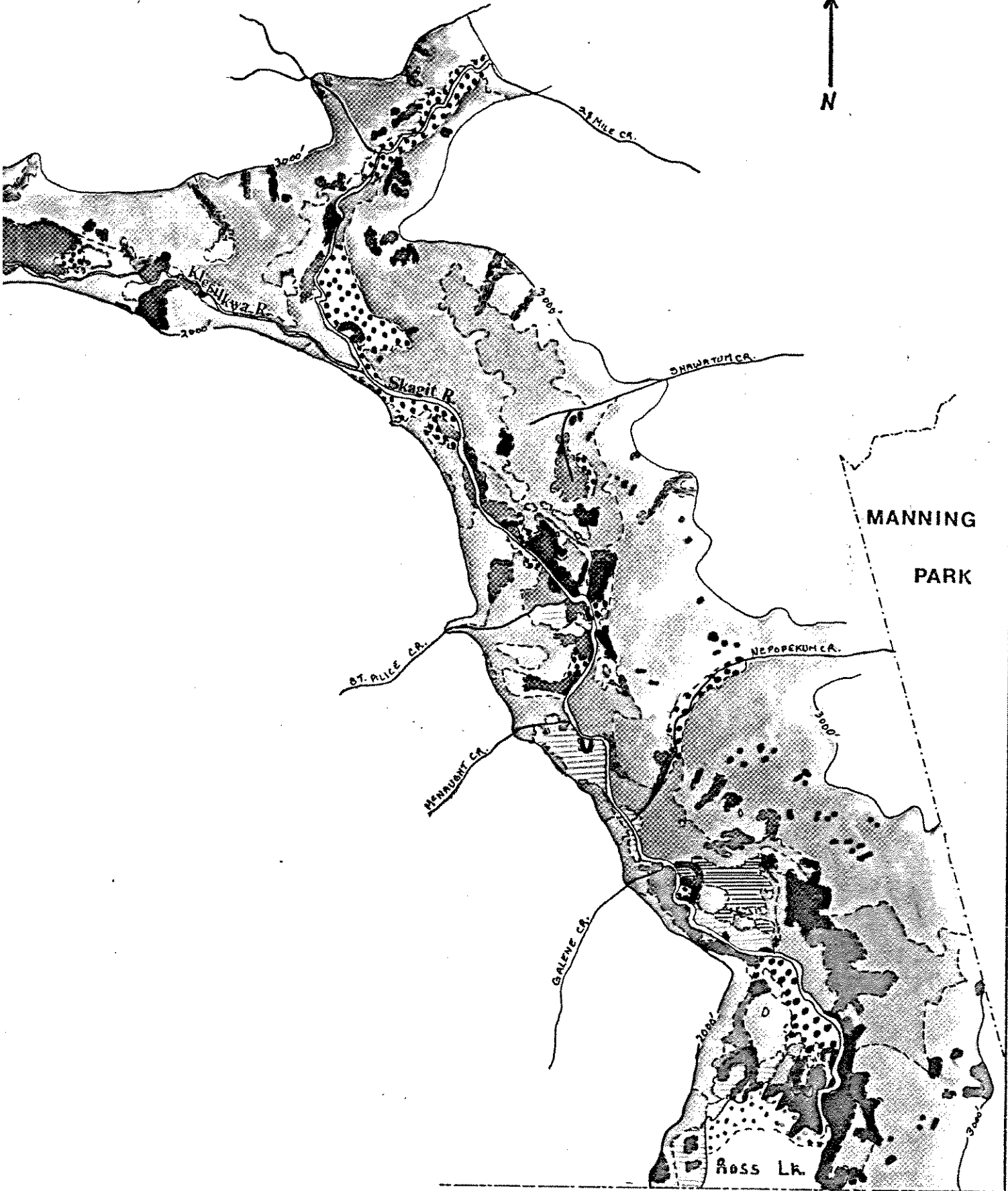
The dominant trees are cottonwood and red cedar with the understory tree being mostly cedar and some smaller cascara. The large trees reach a height of about 150 feet, the average age of the cottonwoods being roughly estimated at 100 years old. Most of these stands have been

Figure 4 - Vegetation Associations and Habitats  
(After Slaney, 1973).

KEY:

-  Deciduous
-  Mixed deciduous and coniferous advanced succession.
-  Mixed deciduous and coniferous regeneration with a canopy layer developed.
-  Mixed deciduous and coniferous regeneration with no canopy layer developed.
-  Mixed coniferous forest on mesic to wet sites.
-  Pure or mixed Douglas fir and lodgepole pine on drier sites.
-  Coniferous regeneration.
-  Rock outcrops
-  Meadow
-  Marsh
-  River riparian
-  Shrubs
-  Logged areas since 1969
-  Drawdown

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SCALE IN MILES



selectively logged for cedar. More recently, the Scott Paper Company has applied to the Forestry Branch for permission to cut 450 cottonwood trees in Timber Sale No. A00696 C.P. 3 Blk. A, which is located about 100 yards west of Chittenden's Bridge and extends north to the Skagit River. If the sale is permitted, the occurrence of the mixed deciduous and coniferous advanced succession biotic zone in the Skagit Valley would be reduced by 25 percent.

The predominant plants of the forb layer in this zone include lady fern, foam flower, stinging nettle, bleeding heart, trillium, wild ginger, starflower, starflowered Solomon's seal, Pacific mitrewort (*Mitella trifida*) and moss.

4. Mixed Deciduous and Coniferous Regeneration (canopy layer developed)

Cottonwood, western white birch, red cedar, western hemlock, bitter cherry and sitka alder form a semi-open canopy about 40 feet above the ground. The shrub layer is very dense and consists mostly of thimbleberry, vine maple, red-osier dogwood and willow with some black twinberry, red currant and swamp gooseberry. The relatively sparse ground cover includes fragrant bedstraw, horsetail, bleeding heart, twinflower, false box, Oregon grape, queen's cup, twisted stalk, lady fern and, in more open areas, cow parsnip and alumroot. These regions were logged in the early 1950's for the large Douglas fir and red cedar which were the climax species.

5. Mixed Deciduous and Coniferous Regeneration (no canopy layer developed)

The trees and shrubs are mixed in a single layer where a dense cover is formed by cottonwood, Douglas fir, red cedar, grand fir, Scouler willow, vine maple, red currant, thimbleberry, Saskatoon berry, red-osier dogwood, black twinberry, rose and snowberry. In wet areas Pacific crabapple and hawthorn are abundant. In open dry areas bracken is predominant. The ground cover is comprised of Oregon grape, star flower, bunchberry, false box and moss. Logging operations had removed the Douglas fir cover which once dominated these areas.

6. Mixed Coniferous Forest (on mesic to wet sites) (Plate 8, 9, & 10)

Here the Douglas fir is the dominant tree species forming a canopy layer 120 feet above the ground. Sixty feet below this canopy is an open understory of grand fir, red cedar and western hemlock. Saplings of red cedar, western hemlock, grand fir, white pine and Douglas fir

form medium density stands which suppress the deciduous shrubs. Some shrubs such as red huckleberry, vine maple and rose occur at low density. Oregon grape and moss account for over 50% of the ground cover, the rest is made up of starflower, bunchberry, black mountain huckleberry, twinflower, queen's cup, Prince's pine and false box.

#### 7. Pure or Mixed Douglas Fir and Lodgepole Pine Forests (on drier sites)

Fortunately, the Douglas fir and lodgepole pine forests located on the drier sites were left by the loggers because these stands were considered to be 'of poor quality.' The Douglas firs average about 100' tall and form a semi-open canopy. The understory consists mostly of younger Douglas fir and some grand fir. The shrub layer is sparse and contains vine maple, soopolallie, red huckleberry, saskatoon, hazelnut and rose. A mossy ground cover predominates with a high frequency of Oregon grape and false box and lesser amounts of Prince's pine, bunchberry, flat top spirea, twinflower, star flower, strawberry, black mountain huckleberry and kinnikinnick. The lodgepole pines, in pure stand, average about 40' in height and also form a semi-open canopy. There is no obvious understory of regenerating trees. The shrub layer is also sparse and consists of redstem ceanothus, bitter cherry, rose, saskatoon and soopolallie. The ground cover is dominated by false box, kinnikinnick and lupine with smaller amounts of flat top spirea, Oregon grape, blue huckleberry, Prince's pine, moss, lichens, bunchberry, strawberry and twinflower.

#### 8. Coniferous Regeneration

Dense thickets of Douglas Fir (averaging about 20' high) are intermixed with red cedar, grand fir, vine maple, Saskatoon, Scouler willow, red huckleberry and red currant. Ground cover is predominantly moss with lesser amounts of false box, twinflower and kinnikinnick followed by a smaller frequency of Oregon grape, Prince's pine, queen's cup, star flower and black mountain huckleberry. This type of regeneration after logging is associated with mesic and dry sites.

#### 9. Rock Outcrops and Active Slides

Rock outcrops on the valley sides are very dry with ground cover consisting mostly of thick layers of mosses and lichens. The plant communities in these areas are from the Interior Douglas-fir Zone.

The rocky outcrop in the Ponderosa Pine Ecological Reserve (Plate 11) is a typical example of such a habitat. Besides moss and lichens, the ground cover consists of steer's head (Dicentra uniflora), Hooker's onion (Allium acuminatum), small flower alumroot (Heuchera micrantha), rosy pussytoes (Antennaria rosea) and Lematium ambigium with the shrubs, rocky mountain juniper (Juniperus scopulorum) and flat-top spirea and the grasses, bluebunch wheatgrass (Agropyron spicatum) and pinegrass (Calamagrostis rubescens).

The active slides support crusty lichens and patches of moss and some forbs such as the spotted saxifrage. These slide areas are most prevalent along the upper Skagit Valley from above the 26-mile bridge to the Hope-Princeton Highway.

#### 10. Meadows (valley bottom)

Several meadows occupy dry sites in the valley bottom. Most of the meadows had been used for grazing cattle in the early 1900's. One of the floristically more interesting meadows occurs just north of the Ross Reservoir and is referred to as the Ponderosa Pine meadow (Plate 7). This 23 acre meadow, as the name implies, contains some large Ponderosa pine trees. There is also a beautiful trembling aspen (Populus tremuloides) grove along the edge of the meadow. Some of the other plants which occur here include wild rose (Rosa nutkana) (Plate 12), yarrow (Achillea millefolium), pink pussytoes, western columbine (Aquilegia formosa), tower mustard (Arabis glabra), purple pea (Lathyrus nevadensis), field chickweed (Cerastium arvense), river cinquefoil (Potentilla rivalis), timothy (Phleum pratense), Kentucky bluegrass (Poa pratensis) and pinegrass. A fuller account of this meadow is presented in the Interpretation Zone section. Another meadow of 13 acres, commonly called the Whitworth meadow, is located 2.7 miles north of the International Boundary and it too shall be discussed later.

#### 11. Meadows (alpine)

Most of the alpine meadows visible from the Valley floor are located on the east side in Manning Park.

The alpine meadows in the Recreation Area are found on the west side of Shawatum Mountain, on the south side of Silvertip Mountain, on Whitworth Peak and on the high ridges to the south of Whitworth Peak.



Most of these meadows are sub-alpine and, therefore, are dependent on fire for their existence. Only one high meadow area was visited, this being just north of the Border on the west side of the Valley at the head of Galene Creek. (Plate 13). The dominant trees were typically the alpine fir, mountain ash, white bark pine and spruce. The shrubs consisted mostly of white rhododendron, red heather, white heather and red flowering currant. Other ground cover included mountain valerian (Valeriana sitchensis), Western anemone (Anemone occidentalis), several species of penstamen, grouseberry (Vaccinium scoparium), spreading phlox, Indian hellebore (Veratrum veride), Indian paintbrush (Castilleja sp.), mountain lupine (lupinus latifolia), and meadow rue (Thalictrum occidentale.)

#### 12. Ponds and Swamps (Plates 14, 15 & 16)

The small marshes are in various stages of pond succession from being completely covered with sedges to having open water sufficient to support resident beavers. The plants characteristic to the edge of such wet open areas include skunk cabbage, stinging nettle (Urtica dioica), Pacific willow (Salix lasiandra), swamp gooseberry (Ribes lacustre), hard hack (Spirea douglasii), and red-osier dogwood. Various rushes and sedges are found advancing into the water, especially bulrush (Scirpus microcarpus), Carex rostrata and Juncus ensifolius. The floating plant community may consist of yellow water lily (Nuphar polysepalum), and water smartweed (Polygonum amphibium). The flora of certain marshes especially important for interpretation will be discussed in more detail in a later section.

#### 13. River Riparian (Plate 17)

This vegetation type is restricted to regions along the riverbank that are subject to periodic flooding. The shrub layer is formed from a dense growth of cottonwood and willow saplings, red-osier dogwood, vine maple and thimbleberry. The ground vegetation is limited to queen's cup, bleeding heart and bedstraw because of the heavy leaf litter and intense cover.

#### 14. River Bank Regeneration

After the protective cover of cedar and cottonwood were removed by logging, a very vigorous pioneer community developed making travel along the riverbanks extremely difficult. The plants along the river bank include vine maple, red-osier dogwood, black twinberry, waxberry, horsetail (Equisetum sp.), devil's club, gooseberry (Ribes sp.)

hazelnut, Saskatoon berry, thimbleberry, red alder, mountain alder, (A. tenuifolia), cottonwood, willow, wild rose, thistle (Cirsium sp.), stinging nettle, burdock (Arcitium sp.) and field chickweed.

15. Shrub

This habitat occurs on avalanche chutes and steep stream channels. Only a shrub layer is usually observed and this consists mainly of vine maple, willow, mountain alder and devil's club (the latter near streambeds only).

16. Recent Logging Slash

Any area that has been strip logged within the past five years is included in this category. The pioneer species found here include fireweed, red and white clover, dandelions, thimbleberry, thistle, burdock, field chickweed, strawberry, various grasses and red elderberry.

17. Drawdown Area (Plates 18, 19, 20, & 21)

The upper portion of the drawdown area of Ross Lake supports both aquatic and terrestrial plant communities. The terrestrial plants which include water foxtail grass, Kentucky bluegrass, curled dock, field chickweed and chamomille) are evident during April, May and June and survive the flooding during July, August and part of September. The aquatic species start growing in July after inundation.

## APPENDIX 1

Flora List of the Skagit Valley Recreation Area

## Lichens

Cladonia sp.  
 Peltigera aphthosa (L.) Willd.  
 P. canine  
 Stereocaulon tomentosum

## Musci Moss

Aulacomnium androgynum  
 Calliergon cordifolium  
 Dicranum fuscescens Turn.  
 Drepanocladus exannulatus  
 Hylocomium splendens (Hedw.) B.S.G.  
 Hypnum circinale  
 Mnium glabrescens Kindb.  
 M. insigne Mitt.  
 M. spinulosum B.S.G.  
 Plagiothecium denticulatum (Hedw.) B.S.G.  
 Pleurozium schreberi (Brid.) Mitt.  
 Polytrichum juniperinum Hedw.  
 Rhacomitrium canescens (Hedw.) Brid.  
 Rhytidiadelphus triguetris (Hedw.) Warnst.  
 Rhytidiopsis robusta (Hook.) Broth.

## Lycopodiaceae Clubmoss Family

Lycopodium annotinum L. stiff clubmoss  
 L. clavatum ground pine  
 L. complanatum ground cedar

## Equisetaceae Horsetail Family

Equisetum arvense L. common horsetail  
 E. hyemale L. common scouring-rush  
 E. telmateia Ehrh. giant horsetail

## Ophioglossaceae Adder's-tongue Family

Botrychium virginianum (L.) Swartz grapefern

## Polypodiaceae Polypody Family

Adiantum pedatum L. northern maidenhair fern  
 Athyrium filix-femina (L.) Roth. lady-fern  
 Cheilanthes gracillima lace lip-fern  
 C. siliquosa Maxon. Indian's dream  
 Cryptogramma crispa (L.) R. Br. parsley-fern  
 C. densa  
 Cystopteris fragilis (L.) Bernh. brittle bladder-fern

Dryopteris austriaca (Sacq.) Woynar	spiny wood-fern
Gymnocarpium dryopteris (L.) Newm.	oak-fern
Polypodium glycyrrhiza D.C. Eat.	Licorice fern
Polystichum lonchitis (L.) Roth	mountain holly-fern
P. munitum (Karrlf.) Presl.	western sword-fern
Pteridium aquilinum (L.) Kuhn.	bracken
Woodsia scopulina D.C. Eat.	Rocky mountain woodsia
Taxaceae	Yew Family
Taxus brevifolia	western yew
Cupressaceae	Cypress Family
Chamaecyparis nootkatensis (D. Don)	yellow cedar
Juniperus communis L.	mountain juniper
J. horizontalis Moench.	creeping juniper
J. scopulorum Sarg.	Rocky mountain juniper
Thuja plicata Donn.	western red cedar
Pinaceae	Pine Family
Abies amabilis (Dougl.) Forbes	amabilis fir
A. grandis (Dougl.) Forbes	grand fir
A. lasiocarpa (Hook.) Nutt.	alpine fir
Picea engelmannii Parry	Engelmann spruce
Pinus albicaulis Engelm.	white bark pine
P. contorta Dougl. var. latifolia Engelm.	lodgepole pine
P. monticola Dougl.	western white pine
P. ponderosa Dougl.	ponderosa pine
Pseudotsuga menziesii (Mirbel) Franco	Douglas Fir
var. menziesii	
Tsuga heterophylla (Raf.) Sarg.	western hemlock
Tsuga mertensiana (Bong.) Carr	mountain hemlock
Salicaceae	Willow Family
Populus tremuloides Michx.	trembling aspen
P. trichocarpa Torr. & Gray	black cottonwood
Salix lasiandra Benth.	Pacific Willow
S. scouleriana Barratt	Scouler willow
Betulaceae	Birch Family
Alnus rubra Bong	red alder
A. sinuata (Regel) Rydb.	sitka alder
A. incana (L.) Moench	mountain alder
Betula occidentalis Hook.	water birch
B. papyrifera Marsh.	paper birch
Corylus cornuta Marsh	hazelnut
Urticaceae	Nettle Family
Urtica dioica L. var. lyalli (Wats.) Hitchc.	stinging nettle

## Aristolochiaceae Birthwort Family

*Asarum caudatum* Lindl. wild ginger

## Polygonaceae Buckwheat Family

*Eriogonum heracleoides* Nutt. wild buckwheat  
*Polygonum coccineum* Muhl. water smartweed  
*Rumex acetosella* L. sheep sorrel  
*R. crispus* curly dock  
*R. paucifolius* mountain sorrel

## Portulacaceae Purslane Family

*Montia parviflora* (Moc.) Greene small-leaved montia  
 var. *parvifolia*  
*M. perfoliata* (Donn) Howell miner's lettuce  
*M. sibirica* (L.) Howell Siberian miner's lettuce

## Caryophyllaceae Pink Family

*Arenaria lateriflora* L. bluntleaf sandwort  
*A. macrophylla* Hook. bigleaf sandwort  
*Cerastium arvense* L. field chickweed  
*C. nutans* Rof. nodding chickweed  
*C. viscosum* L. sticky chickweed  
*C. vulgatum* L. mouse-ear chickweed  
*Dianthus armeria* L. grass pink  
*Silene Menziesii* Hook. Menzies silene  
*Spergularia rubra* (L.) Presl. red sandspurry

## Nymphaeaceae Water-lily Family

*Nuphar polysepalum* Engelm. Yellow water lily

## Ranunculaceae Buttercup Family

*Actea rubra* (Ait.) Willd. baneberry  
*Anemone lyalli* Britt. Lyall's anemone  
*Anemone occidentalis* western anemone  
*Aquilegia formosa* Fisch. western columbine  
*Delphinium nuttallianum* Pritz. upland larkspur  
 var. *lineapetalum* (Ewan) Hitch.  
*Ranunculus abortivus* L. smallflowered buttercup  
*R. acriformis* Gray sharp buttercup  
*R. acris* L. meadow buttercup  
*R. alismaefolius* Geyer water plantain buttercup  
*R. aquatilis* L. water crowfoot  
*R. flabellaris* Raf. yellow water-buttercup  
*R. flammula* L. creeping buttercup  
*R. macounii* Britt. var. *macounii* Macoun's buttercup  
*R. occidentalis* Nutt. var. *occidentalis* western buttercup  
*R. repens* L. creeping buttercup  
*R. uncinatus* D. Don. little buttercup  
*Thalictrum occidentale* Gray western meadowrue

## Berberidaceae           Barberry Family

Achlys triphylla (Smith) D.C.	vanilla leaf
Berberis aquifolium Pursh.	tall mahonia
B. nervosa Pursh.	Oregon grape
B. repens Lindl.	creeping mahonia

## Fumariaceae           Fumitory Family

Dicentra uniflora	steer's head
D. formosa (Andr.) Walp.	bleeding heart

## Cruciferae           Mustard Family

Arabidopsis thaliana (L.) Schur	mouse-ear cress
Arabis glabra (L.) Bernh.	towermustard
A. lyrata L.	lyreleaved rockcress
Barbarea orthoceras Ledeb.	American wintercress
Capsella bursa-pastoris (L.) Medic.	shepherd's- purse
Cardamine diogosperma Nutt.	Little western bittercress
C. pennsylvanica Muhl.	bittercress
Rorippa curvisiliqua (Hook) Bessey	western yellowcress
R. islandica (Oed.) Borbas	marsh yellowcress

## Crassulaceae           Stonecrop Family

Sedum sp.	stonecrop
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## Saxifragaceae       Saxifrage Family

Heuchera micrantha Dougl.	smallflowered alumroot
Mitella trifida	Pacific mitrewort
Saxifraga bronchialis L.	spotted saxifrage
S. occidentalis Wats. var. rufidula	western saxifrage
Tellima grandiflorum (Pursh) Dougl.	fringecup
Tiarella trifoliata L. var. unifoliata	coolwort foamflower
Tolmiea meziessii (Pursh) T. & G.	youth-on-age

## Grossulariaceae     Currant or Gooseberry Family

Ribes bracteosum Dougl.	stink currant
R. divaricatum Dougl.	straggly gooseberry
R. lacustre (Pers.) Poir.	swamp gooseberry
R. sanguineum Pursh.	redflower currant
R. Triste Pall.	wild red currant

## Hydrangeaceae       Hydrangea Family

Philadelphus lewisii Pursh	mockorange
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## Rosaceae           Rose Family

Amelanchier unifolia Nutt. var. cusickii (Fern.) Hitch.	Saskatoon berry
A.a. var. semiintegrifolia (Hook.) Hitchc.	Saskatoon berry.
Aruncus sylvester Kostel.	goatsbeard
Crataegus douglasii Lindl.	black hawthorn

<i>Fragaria vesca</i> L. var. <i>crinita</i> (Rydb.) Hitchc.	woods strawberry
<i>F. virginiana</i> Duchesne	wild strawberry
<i>Begonia macrophyllum</i> Willd. var. <i>macrophyllum</i>	large-leaved aven
<i>Holodiscus discolor</i> (Pursh) Manim.	ocean-spray
<i>Physocarpus capitalus</i> (Pursh) Huntze	Pacific ninebark
<i>Potentilla fruticosa</i> L.	shrubby cinquefoil
<i>Potentilla glandulosa</i> Lindl. var. <i>glandulosa</i>	sticky cinquefoil
<i>P. gracilis</i> Dougl. var. <i>permollis</i>	slender cinquefoil
<i>P. norvegica</i> L.	Norwegian cinquefoil
<i>P. rivalis</i> Nutt.	river cinquefoil
<i>Prunus emarginata</i> (Dougl.) Walp.	bitter cherry
<i>P. virginiana</i> L.	chokecherry
<i>Pyrus fusca</i> Raf.	western crabapple
<i>Rosa gymnocarpa</i> Nutt.	little wild rose
<i>R. nutkana</i> Presl.	Nootka rose
<i>R. woodsii</i> Lindl. var. <i>woodsii</i>	Wood's rose
<i>Rubus idaeus</i> L. var. <i>sachalinensis</i> (Levl.) Focke	red raspberry
<i>R. leucodermis</i> Dougl.	blackcap raspberry
<i>R. parviflorus</i> Nutt.	thimbleberry
<i>R. pedatus</i> J.E. Smith	trailing raspberry
<i>R. spectabilis</i> Pursh	salmonberry
<i>R. ursinus</i> Cham. & Schlecht.	Pacific blackberry
<i>Sorbus scopulina</i> Greene	Cascade mountain-ash
<i>S. sitchensis</i> Roemer	Sitka mountain-ash
<i>Spirea betulifolia</i> Pall.	flat-top spirea
<i>S. douglasii</i> Hook.	hardhack
<i>S. pyramidata</i> Greene	pyramidal spirea
Leguminosae	Pea family
<i>Lathyrus nevadensis</i> Wats.	purple pea
<i>Lupinus latifolius</i> Aparhdh. var. <i>thompsonianus</i>	broadleaf lupine
<i>L. polyphyllus</i> Lindl.	large-leaved lupine
<i>L. sericeus</i> Pursh	silky lupine
<i>Thermopsis montana</i> Nutt.	buckbean
<i>Trifolium agrarium</i> L.	yellow clover
<i>T. dubrium</i> Sibth.	least hop clover
<i>T. repens</i> L.	white clover
<i>Vicia americana</i> Muhl. var. <i>truncata</i> (Nutt.) Brew.	American vetch
Callitrichaceae	Water-starwort Family
<i>Callitriche verna</i>	spring water star-wort
Celastraceae	Staff-tree Family
<i>Pachistima myrsinites</i> (Pursh) Raf.	false box

Aceraceae	Maple Family	
Acer circinatum Pursh		vine maple
A. glabrum Torr. var. douglasii (Hook) Dippel		Douglas maple
A. macrophyllum Pursh.		broadleaf maple
Rhamnaceae	Buckthorn Family	
Ceanothus sanguineus Pursh.		redstem ceanothus
C. velutinus Dougl.		sticky-laurel
Rhamnus purshiana D,C.		cascara
Hypericaceae	St. John's-wort Family	
Hypericum perforatum L.		common St. John's-wort
Elatinaceae	Waterwort Family	
Elatine triandra Schkuhr		waterwort
Violaceae	Violet Family	
Viola adunca Sm.		hook violet
V. glabella Nutt.		stream violet
Elaeagnaceae	Oleaster Family	
Shepherdia canadensis		soopolallie
Epilobium angustifolium L.		fireweed
E. glandulosum Lehm.		common willow-herb
E. minutum Lindl.		small-flowered willow-herb
E. paniculatum Nutt.		autumn willow-herb
E. watsonii Barbey		Watson's willow-herb
Hippuridaceae	Mare's-tail Family	
Hippuris vulgaris L.		common mare's-tail
Araliaceae	Ginseng Family	
Oplopanax horridum (Smith) Mig.		devil's club
Umbelliferae	Parsley Family	
Cicuta douglasii (D.C.) Coult & Rose		western water-hemlock
Heracleum lanatum Michx.		cow-parsnip
Lomatium ambiguum (Nutt.) Coult. & Rose		small desert parsley
Osmorhiza chilensis (H. & A.		mountain sweet-cicely
O. purpurea (Coult & Rose) Suksd.		purple sweet-cicely



## Cornaceae

## Dogwood Family

*Cornus canadensis* L.  
*C. stolonifera* Michx.

bunchberry  
 red-osier dogwood

## Ericaceae

## Heath Family

*Arctostaphylos uva-ursi* (L.) Spreng.  
*Cassiope* sp.  
*Chimaphila mezziesii* (R. Br.) Spreng.  
*C. umbellata* (L.) Bart.  
*Gaultheria ovatifolia* Gray  
*G. shallon* Pursh  
*Hypopitys manotropa* Crantz.  
*Ledum glandulosum* Nutt.  
*L. groenlandicum* Oeder  
*Menziesia ferruginea* Smith  
*Monotropa uniflora* L.  
*Pterospora andromedea* Nutt.  
*Pyrola asarifolia* Michx.  
*P. chlorantha* Siv.  
*P. minor* L. lesser pyrola  
*P. picta* Smith  
*P. secunda* L.  
*Rhododendron albiflorum* Hook.  
*R. macrophyllum* G. Don.  
*Vaccinium alaskaense* Howell  
*V. deliciosum* Piper  
*V. membranaceum* Dougl.  
*V. parvifolium* Smith  
*V. ovalifolium* Smith  
*V. scoparium* Leiberg

kinnikinnick  
 white moss-heather  
 little pipaissewa  
 common pipsissewa  
 western teaberry  
 salal  
 pinesap  
 mountain labrador tea  
 bog labrador tea  
 false azalea  
 Indian pipe  
 pinedrops  
 large pyrola  
 green pyrola  
  
 white-veined pyrola  
 one-sided pyrola  
 white rhododendron  
 Pacific rhododendron  
 Alaska blueberry  
 blue-leaf huckleberry  
 thin-leaved blueberry  
 red huckleberry  
 oval-leaf huckleberry  
 grouseberry

## Primulaceae

## Primrose Family

*Trientalis latifolia* Hook.

starflower

## Apocynaceae

## Dogbane Family

*Apocynum androsaemifolium* L.

spreading dogbane

## Polemoniaceae

## Phlox Family

*Collomia linearis* Nutt.  
*Microsteris gracilis* (Hook.)  
 Greene var. *gracilis*  
*Phlox diffusa* Benth.

narrow-leaf collomia  
 pink microsteris

## Hydrophyllaceae

## Waterleaf Family

*Hydrophyllum capitatum* Dougl.  
*Phacelia heterophylla* Pursh.

ballhead waterleaf  
 varileaf phacelia

## Boraginaceae            Borage Family

*Myostis laxa* Lehm.

small-flowered forget-me-not

## Labiatae                Mint Family

*Mentha arvensis* L.

Canada mint

*Prunella vulgaris* L.

self-heal

## Scrophulariaceae      Figwort Family

*Castilleja angustifolia* (Nutt.) Don

northwestern paintbrush

*C. miniata* Dougl.

scarlet paintbrush

var. *miniata**Collinsia grandiflora* Lindl.

large-flowered blue-eyed-Mary

*C. parviflora* Lindl.

small-flowered blue-eyed-Mary

*Mimulus alsinoides* Dougl.

chickweed monkey-flower

*M. guttatus* D.C.

yellow monkey-flower

*M. Lewisii* Pursh

Lewis' monkey-flower

*M. moschatus* Dougl.

musk flower

*Pedicularis racemosa* Dougl.

sickle-top lousewort

var. *alba* (Pennell) Cronq.*Penstemon davidsonii* Green

Davidson's penstemon

*P. ovatus* Dougl.

broad-leaved penstemon

*P. serrulatus* Menzies

coast penstemon

*Verbascum thapsus* L.

common mullein

*Veronica americana* Schwein.

American brooklime

*V. peregrina* L.

purslane speedwell

*V. serpyllifolia* L. var.

thyme-leaved speedwell

humifusa (Dickson) Vahl.

## Plantaginaceae        Plantain Family

*Plantago lanceolata* L.

English plantain

*P. major* L.        common plantain

## Rubiaceae              Madder Family

*Galium aparine* L.

goose-grass

*G. boreales*

north ern bedstraw

*G. trifidum* L.

small bedstraw

*G. triflorum* Michx.

fragrant bedstraw

## Caprifoliaceae        Honeysuckle Family

*Linnaea borealis* L.

twinflower

*Lonicera ciliosa* (Pursh.) D.C.

orange honeysuckle

*L. dioica* L. var. *glaucescens*

red honeysuckle

(Rydb.) Butters

*L. involucrata* (Rich.) Banke

black twinberry

*Sambucus cerulea* Raf.

blue elderberry

*S. racemosa* L. var. *aborescens*

red elderberry

(T. &amp; G.) Gray

Symphoricarpos albus (L.) Blake  
 Viburnum edule (Michx.) Raf.

snowberry  
 squashberry

Valerianaceae Valerian Family

V. sitchensis

Sitka valerian

Campanulaceae Harebell Family

Campanula rotundifolia

Scottish bluebell

Compositae Aster Family

Achillea millefolium L.

yarrow

Adenocaulon bicolor Hook.

pathfinder

Agoseris aurantiaca (Hook.)

orange agoseris

Green var. agrantiaca

Anaphalis margaritacea (L.) B. & H.

pearly everlasting

Antennaria microphylla Rydb.

rosy pussytoes

A. neglecta field pussytoes

var. attenuata (Fern.) Cronq.

A. racemosa Hook.

raceme pussytoes

Arctium sp.

burdock

Arnica cordifolia Hook.

heart-leaf arnica

var. cordifolia

A. mollis Hook.

hairy arnica

Aster sp.

wild aster

Chrysanthemum leucanthemum L.

axeye daisy

Cirsium edule Nutt.

Indian thistle

C. hookerianum Nutt.

white thistle

Crepis barbigerata Leib.

bearded hawkbeard

Erigeron peregrinus (Pursh)

wondering daisy

Greene var. callianthus (Greene) Cronq.

E. philadelphicus L.

common fleabane

E. speciosus (Lind.) D.C.

large purple fleabane

Eriophyllum lanatum (Pursh)

woolly sunflower

Forbes. var. lanatum

Hieracium albiflorum Hook.

white-flowered hawkweed

H. canadense Michx.

Canada hawkweed

H. gracile Hook.

slender hawkweed

Hypochaeris radicata L.

hairy cats-ear

Matricaria matricarioides

pineapple weed

(Less.) Porter

Senecio indecatus Greene

mountain ragwort

S. pauperculus Michx.

balsam groundsel

S. pseudoaureus Rydb.

streambank butterweed

Solidago canadensis L.

Canada goldenrod

Sanctus sp. sow-thistle

Tanacetum vulgare L.

common tansy

Taraxacum ceratophorum (Ledeb.) D.C.

horned dandelion

T. officinale Weber

common dandelion

Tragopogon dubius

salsify

## Potamogetonaceae Pondweed Family

Potamogeton pectinatus L.  
P. gramineus L.

sago pondweed  
grass-leaved pondweed

## Juncaceae Rush Family

Juncus acuminatus  
J. effusus L. common rush  
J. ensifolius Wiket.  
J. filiformis L.  
J. tenuis Willd.  
Luzula campestris (L.) DC.  
L. parviflora (Ehrh.) Desv.

tapered rush  
dagger-leaf rush  
thread rush  
slender rush  
field woodrush  
smallflowered woodrush

## Cyperaceae Sedge Family

Carex canescens Bailey  
C. cusickii Mack.  
C. deweyana Schw.  
C. hoodii Boott  
C. lenticularis Michx.  
C. limnophila Hermann  
C. mertensii Prescott  
C. pachystachya Cham.  
C. rossii Boott  
C. rostrata Stokes  
Scirpus microcarpus Presl.

gray sedge  
Cusick's sedge  
Dewey's sedge  
Hood's sedge  
sedge  
pond sedge  
Merten's sedge  
thick-headed sedge  
Ros sedge  
beaked sedge  
small-fruit bulrush

## Graminae Grass Family

Agropyron repens (L.) Beauv.  
A. spicatum (Pursh.)  
Scribn. & Smith  
Agrostis alba L. var.  
palustris (Huds.) Pers.  
A. exarata Trin.  
Aira caryophyllea L.  
Alopecurus aequalis Sobol.  
Anthoxanthum odoratum L.  
Bromus anomalus Rupr.  
B. carinatus H. & A.  
var. carinatus  
B.c. var. linearis  
B. mollis L.  
Calamagrostis canadensis  
(Michx.) Beauv.  
C. rubescens Buckl.  
Deschampsia elongata (Hook.) Munro  
Elymus glaucus Buckl. var. glaucus  
Festuca arundinacea Schreb.  
F. occidentalis Hook.  
F. rubra L.  
Glyceria elata (Nash) Jones  
G. grandis Wats.  
Holcus lanatus L.  
Lolium perenne L.

quackgrass  
bluebunch wheatgrass  
creeping bentgrass  
spike bentgrass  
silver hairgrass  
little meadow-foxtail  
sweet vernalgrass  
nodding brome  
California brome  
California brome  
soft brome  
bluejoint reedgrass  
pinegrass  
slender hairgrass  
blue wildrye  
reed fescue  
western fescue  
red fescue  
tall mannagrass  
reed mannagrass  
common velvet-grass  
perennial ryegrass

<i>Phalaris arundinacea</i> L.	reed canarygrass
<i>Phleum alpinum</i> L.	mountain timothy
<i>P. pratense</i> L.	common timothy
<i>Poa annua</i> L.	annual bluegrass
<i>P. interior</i> Rydb.	inland bluegrass
<i>P. leptocoma</i> Trin.	bog bluegrass
<i>P. palustris</i> L.	fowl bluegrass
<i>P. pratensis</i> L.	Kentucky bluegrass
<i>P. sandbergeri</i> Vasey	Sandberg's bluegrass
<i>P. trivialis</i> L.	roughstalk bluegrass
<i>Stipa occidentalis</i> Thurb. var. minor	small needlegrass
<i>Trisetum canescens</i> Buckl.	tall trisetum

Typhaceae                      Cat-tail Family

*Typha latifolia*                      common cat-tail

Araceae                      Arum or Calla-lily Family

*Lysichitum americanum*              skunk cabbage  
Hulten & St. John

Liliaceae                      Lily Family

<i>Allium accuminatum</i> Hooker	Hooker's onion
<i>Clintonia uniflora</i> (Schult.) Kunth.	queen's cup
<i>Disporum hookeri</i> (Torr.) Britt.	Hooker fairybells
<i>D. trachycarpum</i> (Wats.) Benth. & Hook.	rough fairy bells
<i>Erythronium montanum</i> Wats.	avalanche lily
<i>Fritillaria lanceolata</i> Pursh	chocolate lily
<i>Lilium columbianum</i> Hanson	tiger lily
<i>Smilacina racemosa</i> (L.) Desf.	false solomon's seal
<i>S. stellata</i> (L.) Desf.	star-flowered solomon's seal
<i>Streptopus amplexifolius</i> (L.) D.C.	twisted stalk
<i>Trillium ovatum</i> Pursh.	western trillium
<i>Veratrum vivide</i> Ait.	Indian hellebore
<i>Zigodenus venenosus</i> Wats.	meadow death-camas

Orchidaceae                      Orchid Family

<i>Calypso bulbosa</i> (L.) Oakes.	false lady-slipper
<i>Corallorhiza maculata</i> Raf.	spotted coralroot
<i>Goodyera oblongifolia</i> Raf.	rattlesnake plantain
<i>Habenaria orbiculata</i> (Pursh) Torr.	round-leaved rein-orchid
<i>H. unalascensis</i> (Spreng.) Wats	slender-spire orchid
<i>Listera caurina</i> Piper	western twayblade
<i>Spiranthes romanzoffiana</i> Cham. var. <i>romanzoffiana</i>	hooded ladies-tresses

## APPENDIX II \*

VERTEBRATE SPECIES RECORDED  
IN THE  
SKAGIT VALLEY IN CANADA

This Appendix is an inventory of all vertebrate species, by common name only, which have been recorded in the Skagit Valley in Canada. The table indicates the population status of each species, identifying them as common, uncommon, or rare. If the species occupy the Valley during the breeding season they have been classed as resident. The probable effect of High Ross Reservoir on each species is based on the best knowledge to date.

In addition to those actually observed, certain avian species may occur in the Skagit Valley, based on their known occurrence adjacent to the Valley, or in similar habitats elsewhere in the Province. These avian species are tabulated with their population status and anticipated reservoir effects.

\* From:  
International Joint Commission, Canada & U.S., 1971.  
Environmental and Ecological Consequences in Canada of  
Raising Ross Lake in the Skagit Valley to Elevation 1725.

GAME ANIMAL SPECIES	POPULATION STATUS				RESERVOIR EFFECTS			
	Common	Uncommon	Rare	Resident	Increase	Decrease	No change	Unknown
White Deer Black-tailed Deer White-tailed Deer Roosevelt Elk Moose	X X		X X X	X X X		X X X		X X
Bobcat Grizzly Bear Black Bear Cougar Coyote	X X X	X	X	X X X		X X X	X X	
Snowshoe Hare Blue Grouse Ruffed Grouse Franklin Grouse White-tailed Ptarmigan	X X X		X X	X X X X		X X X	X	X
Hallard Wentworth Green-winged Teal Blue-winged Teal Cinnamon Teal	X	X X X	X	X X		X X	X X X	
American Widgeon Shoveller Wood Duck Ring-necked Duck Canvasback	X X	X X X				X	X X X	
Greater Scaup Lesser Scaup Common Goldeneye Barrows Goldeneye Bufflehead	X	X	X X X	X			X X X X	
Canada Goose Common Snipe		X X		X X		X X		

FUR SPECIES	POPULATION STATUS				RESERVOIR EFFECTS			
	Common	Uncommon	Rare	Resident	Increase	Decrease	No change	Unknown
Red Squirrel	X			X		X		
Douglas Squirrel	X			X		X		
Lynx			X	X			X	
Bobcat	X			X		X		
Raccoon		X		X		X		
Beaver	X			X		X		
Marten		X		X		X		
Fisher			X	X				X
Ermine	X			X		X		
Mink		X		X		X		
Wolverine			X	X			X	
Striped Skunk			X	X		X		
River Otter		X		X			X	
Muskrat			X	X				X



NON-GAME SPECIES	POPULATION STATUS				RESERVOIR EFFECTS			
	Common	Uncommon	Rare	Resident	Increase	Decrease	No change	Unknown
Hoary Marmot Spotted Skunk Porcupine Shrew Mole	X	X	X X	X X X X		X	X X	X
Shrew - S. cinereus sp. S. vagrans sp. S. palustris Deer mouse - P. maniculatus and P. oreus Wood Rat	X X		X	X X X		X X X		
Long-tailed Vole Townsend's Vole Creeping Vole Red-backed Vole Jumping Mouse	X X X	X	X	X X X X		X X X X		
Northwest Chipmunk Townsend Chipmunk Flying Squirrel Mantled Ground Squirrel Mountain Beaver	X X	X X	X	X X X		X X X	X X	
Pika Long-toed Salamander Northwest Salamander Northwestern Toad Pacific Tree Toad	X X	X X X		X X X X		X X X X	X	
Tailed Toad Red-legged Frog Northern Alligator Lizard Western Skink Rubber boa	X X		X X	X X X X X		X X		X X

NON-GAME SPECIES (cont'd)	POPULATION STATUS				RESERVOIR EFFECTS			
	Common	Uncommon	Rare	Resident	Increase	Decrease	No change	Unknown
Northwestern Garter Snake	X			X		X		
Puget Garter Snake		X		X		X		
Coast Garter Snake	X			X		X		
Common Loon	X			X			X	
Red-necked Grebe			X				X	
Horned Grebe		X					X	
Pied-billed Grebe			X	X			X	
Eared Grebe		X					X	
Western Grebe		X					X	
Harlequin	X			X		X		
White-tailed Scoter		X					X	
Hooded Merganser		X					X	
Common Merganser	X			X		X		
Red-breasted Merganser			X				X	
Great Blue Heron		X		X			X	
Goshawk		X		X		X		
Sharp-shinned Hawk		X		X		X		
Cooper Hawk			X	X		X		
Red-tailed Hawk	X			X		X		
Marsh Hawk		X					X	
Golden Eagle		X					X	
Bald Eagle		X				X		
Osprey			X	X			X	
Pigeon Hawk		X					X	
Sandhill Crane			X				X	
Virginia Rail		X		X		X		
American Coot		X					X	
Semipalmated Plover		X					X	
American Golden Plover		X					X	
Killdeer	X			X		X		

NON-GAME SPECIES (cont'd)	POPULATION STATUS				RESERVOIR EFFECTS			
	Common	Uncommon	Rare	Resident	Increase	Decrease	No change	Unknown
Long-billed Curlew Spotted Sandpiper Greater Yellowlegs Lesser Yellowlegs Pectoral Sandpiper	X	X X	X X	X		X	X X X	
Empalmed Sand- piper Long-billed Dowitcher Glaucous-winged Gull California Gull Ring-billed Gull		X X X X					X X X X	
Band-tailed Pigeon Mourning Dove Screech Owl Scorned Owl Pygmy Owl	X X	X X	X	X X X X		X X X X		
Spotted Owl Law-whet Owl Scor-will Common Nighthawk Black Swift		X	X X	X X X		X X X	X	X
Aux's Swift Rufous Hummingbird Calliope Humming- bird Belted Kingfisher Red-shafted Flicker	X X X			X X X		X X X	X X	
White-headed Woodpecker Yellow-bellied Sapsucker airy Woodpecker Downy Woodpecker Black-backed three- toed Woodpecker	X X X X			X X X		X X X		X

NON-GAME SPECIES (cont'd)	POPULATION STATUS				RESERVOIR EFFECTS			
	Common	Uncommon	Rare	Resident	Increase	Decrease	No change	Unknown
Northern three-toed Woodpecker		X		X				X
Eastern Kingbird		X		X		X		
Western Kingbird		X		X		X		
Traill's Flycatcher		X		X		X		
Hammond's Flycatcher	X			X		X		
Dusky Flycatcher		X		X		X		
Western Flycatcher			X	X		X		
Western Wood Peewee	X			X		X		
Olive-sided Flycatcher	X			X		X		
Horned Lark			X				X	
Violet-green Swallow	X			X		X		
Tree Swallow	X			X		X		
Bank Swallow			X				X	
Rough-winged Swallow	X			X			X	
Barn Swallow		X		X			X	
Cliff Swallow			X				X	
Gray Jay		X		X		X		
Steller's Jay		X		X		X		
Black-bioled Magpie		X				X		
Common Raven	X			X		X		
Common Crow	X			X		X		
Northwestern Crow			X			X		
Clark's Nutcracker			X	X		X		
Black-capped Chickadee		X		X		X		
Mountain Chickadee		X		X		X		

NON-GAME SPECIES (cont'd)	POPULATION STATUS				RESERVOIR EFFECTS			
	Common	Uncommon	Rare	Resident	Increase	Decrease	No change	Unknown
chestnut-backed Chickadee	X			X		X		
red-breasted Nuthatch	X			X		X		
town Creeper		X		X		X		
American Dipper	X			X		X		
house Wren		X		X		X		
Winter Wren		X		X		X		
American Robin	X			X		X		
varied Thrush	X			X			X	
Hermit Thrush		X		X			X	
Swainson's Thrush	X			X		X		
gray-cheeked Thrush			X				X	
weery	X			X		X		
Eastern Bluebird		X					X	
Mountain Bluebird	X						X	
Mourning Dove							X	
townsend's Solitaire		X		X			X	
golden-crowned Kinglet	X			X		X		
ruby-crowned Kinglet	X			X			X	
water Pipit		X		X		X		
red-tailed Tropicbird	X			X		X		
red-headed Woodpecker			X	X		X		
Common Starling	X			X		X		
Whit-throated Sparrow			X	X				X
Solitary Vireo			X	X				X
Red-eyed Vireo		X		X		X		
Warbling Vireo	X			X		X		

NON-GAME SPECIES (cont'd)	POPULATION STATUS				RESERVOIR EFFECTS			
	Common	Uncommon	Rare	Resident	Increase	Decrease	No change	Unknown
Tennessee Warbler			X	X		X		
Orange-crowned Warbler		X		X		X		
Nashville Warbler			X	X				X
Yellow Warbler	X			X		X		
Audubon's Warbler	X			X		X		
Black-throated Gray Warbler		X		X		X		
Townsend's Warbler	X			X		X		
Northern Water Thrush			X	X				X
Macgillivray's Warbler	X			X		X		
Common Yellow-throated Warbler	X			X		X		
Wilson's Warbler		X		X		X		
American Rodstart		X		X		X		
Bobolink			X				X	
Western Meadowlark		X					X	
Yellow-headed Blackbird		X		X		X		
Redwinged Blackbird	X			X		X		
Bullock's Oriole		X		X		X		
Brewers Blackbird		X		X		X		
Brown-headed Cowbird	X			X		X		
Western Tanager	X			X		X		
Black-headed Grosbeak			X	X		X		
Lazuli Bunting			X				X	
Evening Grosbeak	X			X		X		
Purple Finch	X			X		X		
Pine Grosbeak		X		X			X	

NON-GAME SPECIES (cont'd)	POPULATION STATUS				RESERVOIR EFFECTS			
	Common	Uncommon	Rare	Resident	Increase	Decrease	No change	Unknown
Pine Siskin	X			X		X		
American Goldfinch		X		X		X		
Red Crossbill	X			X			X	
White-winged Crossbill			X				X	
Spotted Towhee		X		X		X		
Vesper Sparrow			X				X	
Lark Sparrow			X				X	
Slate-coloured Junco			X				X	
Oregon Junco	X			X		X		
Tree Sparrow			X			X		
Chipping Sparrow	X			X		X		
Harris' Sparrow			X				X	
White-crowned Sparrow		X		X		X		
Golden-crowned Sparrow		X					X	
Fox Sparrow			X				X	
Lincoln's Sparrow			X				X	
Song Sparrow	X			X		X		

AVIAN* SPECIES	POPULATION STATUS				RESERVOIR EFFECTS			
	Common	Uncommon	Rare	Resident	Increase	Decrease	No change	Unknown
American Bittern White-fronted Goose Gadwall Redhead Surf Scoter			X X	X		X X	X X	
Turkey Vulture Rough-legged Hawk Sora Rail Black-bellied Plover		X X X	X	X X		X X X	X	
Baird Sandpiper Least Sandpiper Dunlin Short-billed Dowitcher Wilson Phalarope		X X X X	X				X X X X X	
Northern Phalarope Herring Gull Short-billed Gull Bonaparte Gull Common Tern		X X X X X					X X X X X	
Arctic Tern Black Tern Great Gray Owl Long-eared Owl Short-eared Owl		X X X X	X	X X		X X X	X X	
Lewis Woodpecker Sayes Phoebe Common Bushtit White-breasted Nuthatch Pygmy Nuthatch		X X X X X		X X X X		X X X X X		

\* These Avian Species may occur in the Skagit Valley in Canada. Data based on known occurrence adjacent to the valley or in similar habitats elsewhere in British Columbia.



AVIAN SPECIES (Cont'd)	POPULATION STATUS				RESERVOIR EFFECTS			
	Common	Uncommon	Rare	Resident	Increase	Decrease	No change	Unknown
Bewick Wren		X		X		X		
Long-billed Marsh Wren		X		X		X		
Catbird		X		X		X		
Bohemian Waxwing		X				X		
Northern Shrike		X				X		
Myrtle Warbler		X				X		
Chat			X	X		X		
Rusty Blackbird		X				X		
Cassin's Finch		X					X	
House Finch		X		X		X		
Rosy Finch		X					X	
Lark Bunting			X				X	
White-throated Sparrow			X			X		
McCowan Longspur			X			X		
Snow Bunting		X				X		