INTRODUCTION

After passage of 11 years from the original proposal by the North Okanagan Naturalists' Club, Cougar Canyon was finally granted Ecological Reserve status in November 1981. Its c. 443ha (c.1070 acres) start approximately 10km south of Vernon running in a south-westerly direction almost to the south end of Kalamalka Lake.

Apart from an assessment visit by staff of the Ecological Reserve Unit, the only previous study was by Bob Cannings who made reference to the canyon in "Interpretation Assessment of Kalamalka Lake Park", Report No. 25 dated October 1975 written at a time when consideration was being given to including the area within the proposed new provincial park.

TOPOGRAPHY

The narrow, steep-sided valley of Cougar Canyon is bounded on the north-west and separated from Kalamalka Lake by the pole-line ridge (PLR in this report) and on the south-east by slopes rising eventually to over 4,500 ft. on the rolling, forested plateau of Grizzly Hills (in the absence of metric maps altitude is given in imperial measure). Above lake #9 PLR reaches its greatest height above the canyon floor of 2300 ft. or a rise of 1100 ft.. Except for a short initial stretch at the north end the lower enclosing slopes on both sides of the valley average around 45° helping to give a feeling of isolation and ruggedness.

From an altitude of c.1350 ft. above lake #1 the canyon floor declines to 1500 ft. at its southern end, or 76m over 7km - a degree of slope that belies actual experience when traversing it on foot.

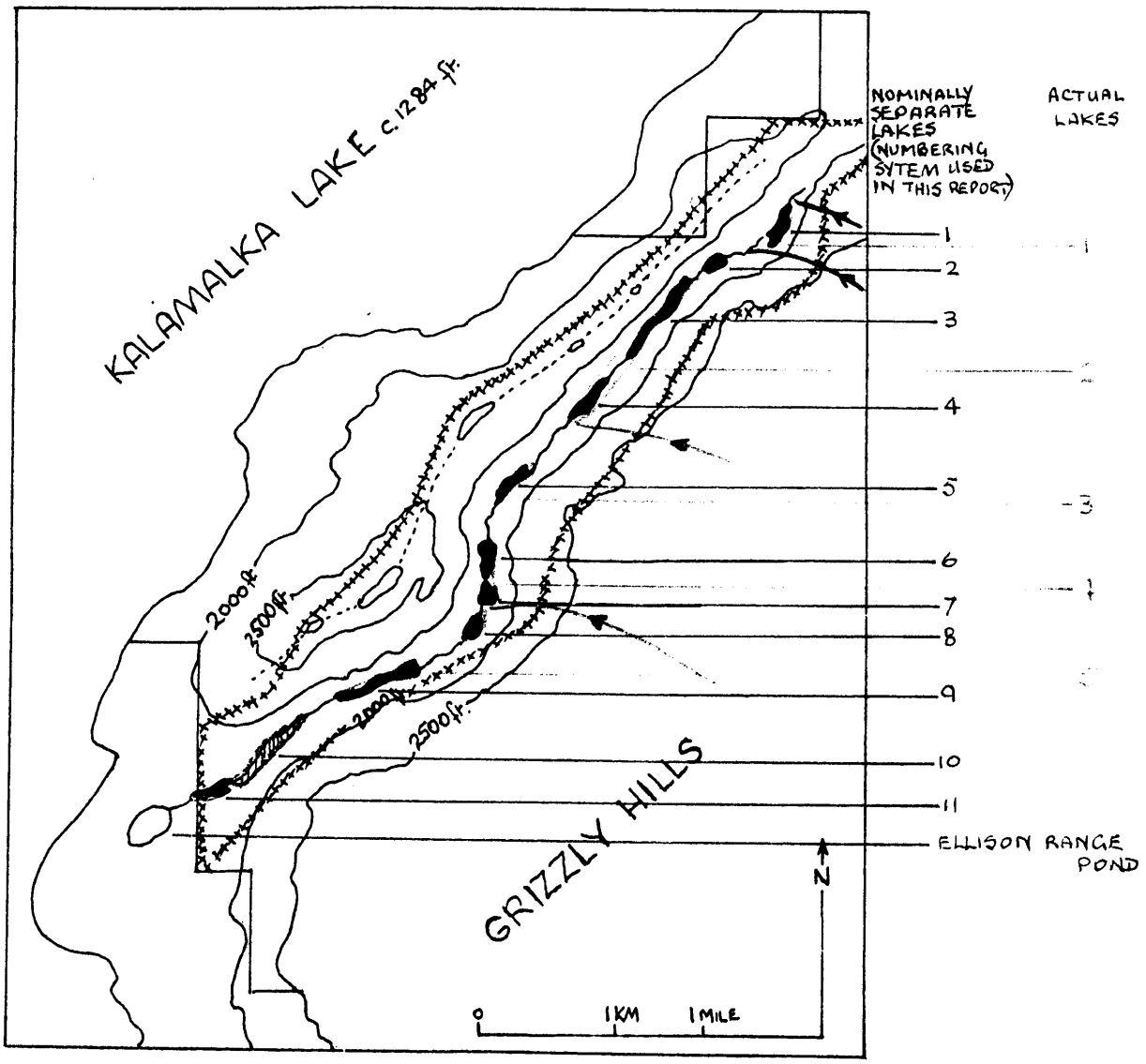
LAKES

For the purpose of this report the lakes are numbered from 1 to 11 counting from the north, these being as shown on National Topographical System map covering 82 L/3 West at 1:50,000 with the addition of lake #10 (not shown on the map) adjoining and prior to the last lake in the chain. In actual fact this is incorrect as observation on the ground reveals only 6 individual lakes as indicated on map 1. Shallow water areas are largely filled with cat-tails giving the appearance of ground vegetation on aerial photographs and causing cartographers to infer breaks between lakes where none really exists.

STREAMS

Topographic maps on this scale indicate the long Grizzly Hills slope as being completely devoid of running water. Certainly for a rise of nearly 3000 ft. it is remarkably free of streams but at least 4 of modest flow (marked on map 1) are

COUGAR CANYON E.R. 102



MAP 1.

xxxxxx boundary of reserve

------ height of land (Pole Line Ridge)

present throughout a normal precipitation year, the most northerly of which is responsible for the "weeping wall" effect over part of the easterly cliff just prior to lake #1.

It is highly unlikely that these four together with any other intermittent flows are responsible for all the surface water present in the valley bottom, taking evaporation, transpiration and outflow into consideration, indeed the stream linking all the lakes in the system itself originates in several small springs above lake #1 and others may well arise elsewhere or open directly into lake beds.

Outflow at the south end is into a larger shallow lake beyond the reserve boundary (Ellison Range pond) but direct flow ceases as soon as spring freshet declines. As lake levels drop during summer, seepage into the ground can be seen at the southwest end of lake #11. This is insufficient to maintain Ellison Range pond which shrinks markedly and has been seen completely devoid of standing water.

ROUTES OF TRAVEL

Following a course on or just west of the height of land, West Kootenay Power's right-of-way forms the west boundary of the ecological reserve. The nearby access road wanders from the power line a little according to topography and provides the easiest means of traversing the length of Cougar Canyon, though at some elevation from the lakes. From it the valley in its central section can be reached faster and more conveniently than attempting the often tortuous going along its floor even though it entails an energetic rise up the BLR road followed by a steep drop into the canyon. Three suitable descents (or ascents in the opposite direction) are shown on map 2 where cliffs can be avoided.

At valley level lake 1 is reached from a logging track outside the reserve. A slight trail follows the west side of this lake, bushy at its far end, leading into thick forest with relatively easy going as far as lake 2. The east side then becomes preferable over and among large rocks fallen from the prominent vertical cliff above, and although this section is short it necessitates care and time. At lake #3 steep slopes flank the east side requiring high-angled bushwacking as one proceeds further south, fortunately after one difficult section easing along lake 4. Few clear views of the water present themselves and the sound of passage through thick vegetation is not conducive to meeting wildlife.

The going on the east side past lakes 5, 6 and 7 is not serious and buoyed by the rate of progress the weary traveller is suddenly disturbed to find the angle steepen dramatically until it becomes a cliff plunging into lake 8 which can be by-passed only by climbing half way out of the canyon before

dropping back down to lake 9. The opposite side of the valley promises even more exacting difficulties.

From Lake #9 to #11 the east side continues thickly vegetated requiring a steady expenditure of energy until part way along the last lake. On the west side of this section the route is more open though slow over fairly stable scree.. Easy walking on a lightly treed bench stretches to the south end of the reserve from where farm tracks through private grazing extend to Sawmill Road at Oyama.

GEOLOGY

Since the time of Geological Survey of Canada Memoir #296 covering the Vernon map area (Jones 1959) field work has been concentrated to the north of Vernon and none has taken place in the vicinity of Cougar Canyon. Mapping now refers to the whole region as being part of the "Okanagan Plutonic and Metamorphic Complex" with the area east of Kalamalka Lake falling into the category shown as "undifferentiated Palaeozoic and Mesozoic gneiss containing minor hornblende, biotite gneiss, paragneiss, minor schist, marble quartzite and amphibolite". Most of the cliff faces are seen to be gneiss, light in colour where fresh and weathering darker often with a reddish cast. Of the minor constituents listed above only a coarse black mafic intrusive of gabbroic nature corresponding with the amphibolite is present for certain within the subject area. This dark friable member underlies much of the slopes containing lake #4, particularly on the west side. Some was also noted further south.

There is no record of any mineral claims ever having been staked and no mineralization is evident. Elsewhere in the north Okanagan sediments apparently derived from areas of amphibolite have given rise to anomalously high geochemical readings for nickel and may do so here if tested. North of lake #2 on the ridge a squared stake bears numbers that seem unrelated to claims records and may be the corner post of surface lot #4679.

Soils are thin and except on the valley floor, where organic remains accumulate, are mostly derived from the underlying bedrock directly rather than from glacial and post-glacial deposits.

It is likely that Cougar Canyon is orientated along a line of structural weakness paralleling the fault-controlled shores of Kalamalka and, further west, Okanagan Lakes. It has been advanced that melt water from the deglaciation stages of the numerous Pleistocene ice advances used this line of weakness as a channel to by-pass the obstruction of late-melting ice where Kalamalka Lake now lies, widening and deepening it following each glaciation. Erosion by fast flowing water kept the walls at a constant high angle which in turn was probably responsible for the rock falls that give rise to the numerous areas of scree. Much of the smaller sized debris would have been transported out of the canyon where it was deposited as a delta in the post-glacial lake filling that part of the Okanagan free of ice.

This delta now forms the flat part of Ellison Range just outside the reserve and stands out prominently at a height of about 106m (350 ft.) above the present level of Kalamalka Lake when viewed across from Highway 97.

CLIMATE

General climatic conditions would vary little from those of Vernon with the following exceptions. Being on the east side of the Okanagan Valley where westerly and south-westerly winds are forced to rise, some increase in precipitation is likely, while the difference in height would account for a slightly lower temperature.

As the canyon loses definition to the north it would tend to be less open to wind originating in that sector unlike the open southern end where warm winds are funnelled in causing a much drier appearance as far as the bend around lakes #6,7 and 8. Drier also due to intense insolation is the west side of the valley (facing mostly south-east) compared with the opposite side (facing mostly north-west), the one carrying a fair amount of Ponderosa pine along douglas-fir, the other douglas-fir only.

From November through February it is possible to imagine little direct sun shining into the lowest part of the canyon due to its high east wall, except late in the day from the south to south-west and this would tend to slow diurnal warming after nights when cold air would have descended into and been channelled through the valley making it considerably cooler than more open land at the same height.

EXTENT OF PUBLIC USE

It was not until West Kootenay Power erected its transmission line along the ridge above Cougar Canyon that access became eased. Logging took place at the north end in the late 1960s though not extending (or only very little) into what is now the ecological reserve. Such timber extraction as has taken place on topof the PLP may have been concurrent with preparing right of way and was not extensive. Because of its proximity to Oyama the southern end has, no doubt, always attracted more use. Some logging on either side of Lake #11 occurred in 1963-64 but extends only a short distance inside the present boundary.

Cattle grazing is less dependent on easy access and probably has always occurred to the south. At present the three surrounding Provincial Forest grazing leases (shown on map 3) are held by Mr. Ben Ellison and Mr. Dave Allingham who own the range outside the reserve as far as the gate on Camrill Road. Cattle wander into the reserve as indicated on the map but numbers are not concentrated and effect is minimal.

Cartridge and shell in small quantity is found scattered around the mouth and flanks of the canyon at the south with grouse and deer probably the objective. Mr. Ellison is not a hunter and does not encourage entry on his property although lightly treed south-facing slopes terminating the PLR may be attractive to deer in winter and to local hunters.

A Kinfield resident, Mr. Rocky Madden, has trapping rights over the permit area south-east of Vernon and he is reported to have been enquiring during the winter of 1983-83 about prospects in the canyon. It has not been possible to contact him to ascertain if he has ever worked there previously however the apparent lack of beaver and sparsity of muskrat suggests that someone has.

Because of its ruggedness the canyon is not much travelled by casual visitors, yet these same values increase its attractiveness to other hardy souls some of whom must have spent a little time there. Camp sites, some recent, most older, are roughly indicated on map 3. Day hiking seems rarely to extend beyond either end of the valley apart from those taking the PLR road from Kalamalka Lake Park through to Oyama. As a measure of use in 1983 it appears that two sizeable groups of people visited lake #1 at the north end in August with possibly another during September, while one sizeable party went in to the head of lake #11 at the south end in the summer probably with others in ones and twos who left no evidence.

An old raft of more than casual construction remains at the south end of lake #4. One party with canoes traversed the whole system many years ago portaging through thick woods between lakes and forcing slow passage through cat-tails elsewhere in what must have been a long and purgatorial trip.

BIOTA

The lack of marked boundaries apart from the west makes it difficult to be certain at all times whether an observation is actually within the reserve or not. Judgement has been generous. Some nearby sightings were obviously outside but close enough that longer time spent or closer examination could well add them to the following lists. These have been added separately at the end of each section as "seen nearby".

Birds

The overall total of 56 species registered during 1983 is surprisingly low compared with twice this number in a normal year in Kalamalka Lake Park. Only partly can this be explained by the difficulty in making observations in thick vegetation where movement causes disturbing noises. Better recognition of calls would have aided a few to this list.

For a reserve based on a chain of lakes one would have expected waterfowl to show greater prominence. Probable shallowness of

water would deter deeper diving species but of surface feeders only mallard was present. During April as many as 10 pairs of Barrow's goldeneye were seen at one time on the three northern lakes yet none appears to have remained for nesting despite plentiful fringing trees. Of the species that did breed, ring-necked duck (2 pairs?) and Canada goose (4 pairs) seemed to move their broods as quickly as possible to the more open and presumably less vulnerable waters of ER pond and lake #11. A mallard nest with 11 eggs above lake #2 was unsuccessful, one half shell only remaining several weeks later. On PLR pond a pair of mallard were in occupancy in May with a female and one juvenile later in the year. With such extensive beds of cat-tails the absence of sora was surprising and may be a case of 'not seen" rather than absent.

Migrating water birds appear to keep to the main Malamalka valley rather than venturing through the canyon as muddy shorelines such as found around ER pond late in the summer are infrequent in Cougar Canyon. On 20th September a rough count showed 20 ring-neck, 50 mallard, 20 lesser yellowlegs, 30 least sandpipers and 10 killdeer just outside the reserve around the edge of ER pond.

Whether the presence of sharp-shinned hawk in mid-July implies breeding or whether it was already on the move from elsewhere is questionable. Others were seen with some regularity thereafter: conversely golden eagle records ceased after early June. No time after dark could be spent in the reserve and its owl population remains unprobed except in so far as several pygmy owls were calling from various stations along PLR on 25th September which seemed to be a day of some consequence in their calendar.

Bulrush beds in lake #9 held considerable attraction for a female hummingbird of indeterminate species which spent much time going from head to head presumably for small insects.

One of the most complete surprises was a total lack of sap-suckers, so common around pools and minor wet areas in Malamalka Lake Park. I am inclined to put this down to there being no cottonwoods within the canyon as these were favoured for nesting in the park. At one time there had been cottonwoods as doomed remnants of large diameter are still identifiable at the south end of lake #9. Common flicker is the most frequent woodpecker in the open woods of PLR with the occasional hairy but in the valley bottom it is pileated woodpecker that is supreme and not uncommon. A family group was watched for some time in August in the cedar wood north of lake #1.

Undoubtedly further birdwatching would add flycatchers to the list and probably more wood warblers also. Small shrub and tree frequenting species are particularly difficult in thick vegetation unlike noisy and fearless Stellers jay and nuthatches that were recorded at virtually every visit.

Dragonflies and other winged insects are in large numbers around each lake and yet once the crowds of red-winged blackbird moved away to their agricultural pursuits they remained practically unharvested. By late summer on the Cattle Pond in Kalamalka Lake Park cedar waxwings spent much productive time fattening on dragonflies but not one was seen in Cougar Canyon.

	April		May		Jun		Jul		Aug		Sep		Nov
	4	18	10	20	4	27	17	29	15	22	20	25	13
pied-billed grebe							x				x		
Canada goose	x	x	x										
mallard	x	x	x	x		x	x	x	x			x	x
ring-necked duck		x			x	x	x		x				
Barrows goldeneye	x	x	x	x									
sharp-shinned hawk							x			x		x	
red-tailed hawk	x					x						x	
golden eagle		x		x	x								
blue grouse	x												
spruce grouse			x										
ruffed grouse				x		x			x	x			
great blue heron			x	x		x		x	x				
Virginia rail									x				
mourning dove				x				x	x				
pygmy owl												x	heard
poorwill				x									
common nighthawk						x	x	x					
rufus hummingbird				x									
calliope hummingbird					x								
belted kingfisher			x				x	x	x		x		x
common flicker	x	x	x	x	x		x	x					
pileated woodpecker						x		x		x		x	
hairy woodpecker	x	x	x										
violet-green swallow		x	x	x	x	x							
rough-winged swallow			x		x								
Stellers jay	x			x	x	x	x	x	x	x		x	x
common raven	x		x		x								
common crow								x		x			
Clarks nutcracker									x	heard			
black-capped chickadee		x		x	x	x	x	x	x	x	x		x
mountain chickadee												x	
white-breasted nuthatch									x				
red-breasted nuthatch		x	x	x	x	x	x	x	x	x	x	x	x
house wren						x				x			x
winter wren	x	x		x									
American robin		x	x	x	x	x		x					
Swainsons thrush								x					
Townsends solitaire		x			x	x							
golden-crowned kinglet													x
ruby-crowned kinglet												x	
solitary vireo				x		x							
red-eyed vireo			x	x		x							
Tennessee warbler				x									

	Apr		May		Jun		Jul		Aug		Sep	Nov
	4	13	10	20	4	27	17	29	15	22	20	25	13
yellow-rumped warbler			x										
yellowthroat					x								
red-winged blackbird		x	x	x	x	x							
brown-headed cowbird				x									
western tanager					x								
Cassins finch	x												
pine siskin							x	x	x	x		x	
red crossbill							x	x					
rufus-sided towhee						x		x					
dark-eyed junco		x	x	x	x							x	
chipping sparrow				x									
white-crowned sparrow											x	x	
song sparrow					x	x	x	x	x				

Seen nearby - killdeer, lesser yellowlegs, least sandpiper, American goldfinch, western bluebird, Vaux swift, grey jay.

Mammals

Widespread gnawings of beaver and downed deciduous trees point to a good distribution through the canyon at one time. Just how long ago it is difficult to say. Most of the chips were obviously more than a few years old and only in one place did they have the appearance of relative freshness. This was at the north end of lake #5 and is of some significance in being approximately the mid-point and the most distant for anyone trapping from either end and therefore possibly the last area to be trapped out. One beaver lodge is visible from the peninsular that nominally divides lake #10 from #11 and a dam closer to the north end where it is just possible to cross dry-shod but in neither area does there appear to be any recent activity.

Most of the lakes are suitable muskrat territory and their sparsity despite ample opportunity for observation also speaks for trapping activity. One animal was seen on lake #11, the most accessible, and another on lake 10 so there ought to be more further within the canyon.

Lake #10, the long cat-tail marsh, in places had passages pushed through the reeds from one side to the other as though a large animal had crossed. Mr. Ellison and family have long lived and farmed in the vicinity but he has no knowledge of moose ever having been reported so it is possible that no ungulates larger than mule and white-tailed deer are to be expected. Deer must be very plentiful judging by the abundance of game trails on both slopes.

Black bear will cross shallow water too, leaving a trail through cat-tails. There is plenty of evidence of their presence along RIF and wooded areas at either end of the valley, less on the steeper or drier slopes within it. By late summer

regularly there were droppings on trails outside the reserve at the south end where wild berries and orchard apples were a lure.

Lake edges seemed to be well patrolled by coyote provided the going was reasonably open even if it meant crossing long stretches of scree. Two empty turtle shells were found, one with coyote scat, indicating one of the attractions in these parts.

The difficulty in making return visits to empty traps prevented any live trapping being undertaken consequently of small rodents only one vole was noted. Small unclear prints in mud at the south end of lake #9 may have been weasel, mink or something of that size.

yellow-pine chipmunk	Eutamias amoenus (Allan)
red squirrel	Tamiascurus hudsonicus (Erx)
vole sp.	Microtus (montanus or pensylvanicus)
muskrat	Ondatra zibethica (L)
coyote	Canis latrans Say.
American black bear	Ursus americanus Pallas
mule deer	Odocoileus hemionus (Raf)
white-tailed deer	Odocoileus virginiacus Bailey

Seen nearby - snow-shoe hare Lepus americanus Erx.

Amphibians

Almost certainly additional searching would add western long-toed salamander to the list and possibly Great Basin spadefoot.

northwest toad	Bufo bufo boreas Baird & Girard
pacific tree frog	Hyla regilla Baird & Girard
spotted frog	Rana pretiosa

Reptiles

A number of times when crossing areas of rock fallen from cliffs above when eyes were busily employed aiding balance and placement of feet peripheral vision picked up a sudden flash of dark movement. These were assumed to be alligator lizards fleeing for cover. Rather than being totally exposed, these areas usually had a little light shade. Only two rattlesnakes were met (one near water's edge at the north end of lake #11, the other close to the top of PLR) which was surprising in view of the wealth of rocky outcrops and bushy cover of suitable habitat. One reason may be the distance and time taken reaching the reserve which meant it was usually mid-morning before entering whereas in summer it is their exposure to early morning sunshine for body heating that most often reveals snakes before they retire to cover as the day heats up. As the study of rattlesnakes in Valamalka Lake Park and Campbell-Brown Ecological Reserve has shown that small rodents are the prime food source it is unlikely that the lack of ground squirrels and yellow-bellied marmots

affects the distribution in Cougar Canyon.

Turtles were present on all lakes but less so, it seemed, to the north. On 17th July a juvenile of about 4cm was at the edge of lake #11 and a floating egg, presumably from a destroyed nest. By late fall exhumed and drained eggs littered the west side of this lake having provided considerable sustenence to a resourceful hunter. Without attempting a comprehensive count I estimate at least 20 nests had been dug up ranging from about 1m (3 ft.) away from the water's edge and one third this distance above it, to 7m (22 ft.) away and a similar distance up a steep bank.

northern alligator lizard	Gerrhonotus caeruleus principis Baird & Girard
western blue racer	Coluber constrictor mormon (B & G)
northwestern garter snake	Thamnophis sirtalis tetrataenia (Cope)
wandering garter snake	Thamnophis elegens vagrans (B & G)
pacific rattlesnake	Crotalus viridis oreganus (Holbrook)
western painted turtle	Chrysemys bellii bellii (Gray)

LICHEN

Neither this list nor the actual specimens have been seen by an expert in the field. The collection has been retained.

Acarosporaceae
Acarospora chlorophana (Ach) Mass ?
Alectoriaceae
Alectoria sarmentosa (Ach) Ach
Bryoria capillaris (Ach) Brodo & Hawks
Candelariaceae
Candelaria concolor (Dicks) Stein ?
Cladoniaceae
Cladonia amaurocraea (Flk) Schaer ?
" bellidiflora (Ach) Schaer
" cariosa (Ach) Spreng
" cenotea (Ach) Schaer
" cornuta (L) Hoffm
" chlorophaea (Flk) Spreng
" furcata (Huds) Schad
" gracilis (L) Willd
" multiformis Merr
" phyllophora (Ehrh) Hoffm
" pyxidata (L) Hoffm
" squamosa (Scop) Hoffm ?
Cladina stitis (Sandst) Hale & Culb
" rangifera (L) Harm
Hypogymniaceae
Cavernularia hanhyrea (Ach) Degl ?
Hypogymnia physodes (L) Nyl
" tubulosa (Schaer) Hav

Parmeliaceae
Cetraria canadensis Ras
" chlorophylla (Willd) Vain
" idahoensis Essl
" platyphylla Tuck ?
Parmelia saxatilis (L) Ach ?
" subaurifera Nyl ?
" sulcata Tayl
Parmeliopsis ambigua (Wulf) Nyl
" hyperopta (Ach) Arn
Platismatia glauca (L) Culb & Culb
" lacunosa (Ach) Culb & Culb ?
Xanthoparmelia conspersa (Ach) Hale
Ramalinaceae
Fistulariella dilacerata (Hoffm) Bowler & Rand
Stereocaulaceae
Stereocaulon tormentosum Fr
Umbilicariaceae
Umbilicularia torrefacta (Lightf) Schrad
" vellea (L) Ach
Usneaceae
Evernia prunastri (L) Ach
Letharia vulpina (L) Hue
Usnea lingisoma (L) Ach ?
" subfloridana Stut
Peltigeraceae
Nephroma parile (Ach) Ach
" resupinatum (L) Ach
Peltigera aphthosa (L) Willd
" canina (L) Willd
" malacea (Ach) Funck
" polydactyla (Neck) Hoffm
Stictaceae
Lobaria pulmonaria (L) Hoffm
Sticta limbata (Sm) Ach ?
Teloschistaceae
Caloplaca saxicola (Hoffm) Nordm
Xanthoria polycarpa (Ehrh) Oliv
" sorediata (Vain) Poelt
Physciaceae
Phaeophyscia constipata (Norrl) Moberg
Physcia dubia (Hoffm) Lett
" phaea (Tuck) Thoms ?
" tenella (Scop) DC
Physconia detersa (Nyl) Poelt ?
Verrucariaceae
Dermatocarpon miniatum (L) Mann

BRYOPHYTES

Hepaticae
~~Jungermanniaceae~~ Ptilidiaceae
Ptilidium pulcherrimum (G Web) Hampe
Lepidoziaceae
Lepidozia reptans (L) Dum

Lophocoleaceae
Lophocolea heterophylla (Schrad) Dum
Jungermanniaceae
Barbilophozia barbarta (Schmid ex Schreb) Loeske
Jungermannia leiantha Grolle
Porellaceae
Porella platyphylla (L) Pfeiff
Pelliaceae
Pellia endiviifolia (Dicks) Dum
Marchantiaceae
Marchantia polymorpha L
Ricciaceae
Riccia fluitans L

Musci

Dicranaceae
Dicranoweisia crispula (Hedw) Lind ex Milde
Dicranum fuscescens Turn
" montanum Hedw
~~" polysetum Sw~~
~~" rhabdocarpum Sull~~
" scoparium Hedw
" tauricum Sapeh
" undulatum Brid
Pottiaceae
Tortula princens De Not
Grimmiaceae
Grimmia alpicola Hedw
" apocarpa Hedw
" montana BSG
" pulvinata (Hedw) Sm
" tenerrima Ren & Card
" Torquata Hornsch ex Grev
Rhacomitrium canescens (Hedw) Brid
" fasciculare (Hed.) Brid
" heterostichum (Hedw) Brid
Dryptodon patens (Hedw) Brid.
Bryaceae
Pohlia nutans (Hed.) Lindb
Bryum caespiticium Hedw
" capillare Hedw
" pseudotriquetrum (Hedw) Gaertn, Meyer & Schreb
Mniaceae
~~Mnium drummondii Bruch & Schimp~~
Plagiomnium venustrum Mitt
Aulacomniaceae
Aulacomnium androgynum (Hedw) Schwaegr
Bartramiaceae
Anacolia menziesii (Turn) Paris
Orthotrichaceae
Orthotrichum hallii Sull & Lesq in Sull
~~Ulota hutchinsiae (Sm) Hamm~~
Orthotrichum anomalum
Pontinalaceae
Pontinalis hymenoides C J Hartm, var. hymenoides
Hedwigiaceae
Hedwigia ciliata (Hedw) P Beauv

Neckeraceae
Metaneckera menziesii (Hook ex Drumm) Steere
Hookeriaceae Porotrichum bigelovii
Hookeria acutifolia Hook & Grev
Amblystegiaceae
Campylium polygamum (BSG) C Jens
Lectodictyum riparium (Hedw) Warnst
~~" trichocoleum (Schulz) Warnst~~
Drepanocladus aduncus (Hedw) Warnst, var. aduncus
" fluitans (Hedw) Warnst
" uncinatus (Hedw) Warnst
Brachytheciaceae
Homalothecium nevadense (Lesq) Ren & Card
Brachythecium albicans (Hedw) BSG
" Eurynchium pulchellum collinum (Schleich ex C Muell) BSG
Plagiotheciaceae
Plagiothecium cavifolium (Brid) I Hats
Sematophyllaceae " piliferum (Sw ex C J Hartm) BSG
Rhytidiaceae Brotherella roellii (Ren+Card ex Roell) Fleisch
Rhytidiadelphus triquetrus (Hedw) Warnst
Hylocomiaceae
Hylocomium splendens (Hedw) BSG
Tetraphidaceae
Tetraphis pellucida Hedw
Polytrichaceae
Polytrichum piliferum Hedw

The list of liverworts and mosses above has not been seen by any expert in the field neither have the specimens. The c collection has been retained.

FUNGI

Neither the following list nor any of the specimens collected have been seen by an expert in the field. Most of the perennial polypores and a few of the remainder have been retained.

Russulaceae
Lactarius rubrilactis Hesler & Sm (L. sanguifluus Fr ?)
" torminosus (Schaeff ex Fr) S F Gray
Russula aeruginea Lindb
" brevipes E L Shaffer
" lutea (Huds ex Fr) S F Gray (R. claroflava Grove ?)
" xerampelina (Schr) Fries ?
Hygrophoraceae
Hygrocybe acutoconica (Clements) Singer
" conica (Fr) Kummer
" miniata (Fr) Kummer
" psittacina (Fr) Karsten
" reai (Maire) Lange
Hygrophorus eburneus (Fr) Fries ?
" gliocyclus Fr
" russocoriaceus (Fr) Fr var. fragrans (Murr) Hes & Sm
Tricholomataceae
Armillariella mellea (Fr) Karsten

Clitocybe gibba (Fr) Kummer var, gibba
" nebularis (Fr) Kummer
Collybia confluens (Fr) Kummer
" dryophila (Fr) Kummer ?
Cystoderma fallax Smith & Singer
Laccaria amethystina (Hooker) Murr
Lepista irina Bigelow
Leucopaxillus paradoxus (Murr)
Marasmius urens (Fr) Fr
Mycena galericulata (Fr) S F Gray
" maculata Karsten
" pura (Fr) Quel
" tenerrima (Berk) Quel ?
Omphalina chrysophylla (fr) Murr (O.luteicolor Murr ?)
Panus rudis Fries
Pleurotus ostreatus (Fr) Kummer
Strobilurus albipilata (Pk) Wells & Kempton
Tricholoma atrovidaeum Smith ?
Xeromphalina campanella (Fr) Kuh & Maire
Lepiotaceae
Lepiota clypeolaria (Fr) Kummer
Agaricaceae
Agaricus sylvicola (Vitt) Fr
Coprinaceae
Panaeolus campanulatus (Fr) Quel
Bolbitaceae
Agrocybe pediates (Fr) Fayod ?
Strophariaceae
Pholiota squarrosoides (Pk) Sacc
Cortinariaceae
Cortinarius multiformis (Fr) Fries ?
" paleatorum (Fr) Kauff ?
" turmalis Fries ?
Crepidotus mollis (Fr) Staude
Gymnopilus sapineus (Fr) R Maire
Hebeloma crustiniforme (St Amans) Quel
Gomphidiaceae
Chroogomphus rutilus (Fr) Miller
Gomphidius subroseus Kauff
Pezizaceae
Discina perlata Fries
Pseudoplectania nigrella (Fr) Fuckel ?
Peziza badia Pers ex Merat ?
Helvellaceae
Pyronitra esculenta Fries
Morchella elata Fr
Tremellaceae
Pseudohydnum gelatinosum (Fr) Karsten
Auricularia auricula (Hook) Underwood
Dacromyces palmatus (Schw.) Bres
Clavariaceae
Clavariadelphus borealis Wells & Kempton
" subfastigiatus Wells & Kempton
" ligula (Fr) Donk ?
Clavulina cristata (Fr) Shroet

Polyporaceae
Cryptoporus volvatus (Pk) Hubbard
Phaeolus schweinitzii (Fr) Patouillard
Spongipellis unicolor (Schw) Murrill
Pycnoporus cinnabarinus (Fr) Karsten
Ganoderma applanatum (Pers) Patouillard
Polyporus picipes Fries
" elegans Fries
" arcularis Fries
Coltricia perennis (Fr) Murrill
Heterobasidion annosum (Fr) Bref
Fomes pinicola (Fr) Cooke
" fomentarius (Fr) Fchx
Cleophyllum saepiarum (Wulf ex Fr) Karsten
Daedalea confragosa Fries
" unicolor Fries
Tyromyces albellus (Peck) Bondarzew & Singer
Boletaceae
Suillus brevipes (Pk) Kuntze
" granulatus (Fr) Kuntze
" lakei (Murr) Sm & Thiers
Leccinum scabrum (Fr) S F Gray
Lycoperdaceae
Lycoperdon perlatum Pers
" pyriforme Pers
" umbrinum Pers
Geastrum quadrifidum Pers

Nectria cinnabarina (Tode ex Fr) Fr

HIGHER PLANTS

Cougar Canyon falls within the Interior douglas-fir dry forest zone. Subdivision according to vegetation within this zone is relatively consistent the whole length of the reserve in that cross sections drawn would vary very little from one place to another, apart from the lakes not being continuous.

In broad terms vegetation can be divided with typical assemblages as follows:

1. north-west facing slopes - predominantly Pseudotsuga menziesii; Acer glabrum var. douglasii and Populus tremuloides where damp; Shepherdia canadensis, Tachystema myrsinites, Corylus cornuta (low down), Calamagrostis rubescens, Hieracium albom.
2. south-east facing slopes - mixed P. menziesii and Pinus ponderosa; Arctostaphylos uva-ursi, Balsamorhiza sagittata, Lomatium geyeri, Juniper communis and J. sconarium, Agropyron spicatum, Calamagrostis rubescens, Carex deweyana, Selaginella wallacei; merging into
3. south facing slopes (mostly mouth of canyon at south end)- P.ponderosa, Agropyron spicatum, Rhus glaora, Festuca sp.

8. Ridge top, grassy openings - Calamagrostis rubescens, Stipa nelsonii, Poa pratensis, Antennaria umbrinella, Ranunculus glaberrimus, Lithophragma parviflora.

9. Valley bottom, lake fringe - Salix sp., Carex sp., Phalaris arundinacea, C. stolonifera, Potentilla palustris, Lysimachia thyrsifolia.

10. Valley bottom, lakes - Scirpus acutus, S. maritimus, Typha latipholia, Utricularia vulgaris, Ceratophylum demersum.

11. Valley bottom, altered - (either side of lake # 11) Circium vulgare, Melilotus albus, B. tectorum, Centaurea diffusa, and typical farm weeds.

12. Ridge top, altered - (along PLR road) Filago arvensis, Conyza canadensis, Centaurea diffusa, Medicago lupulina, and typical road-side weeds.

13. Scree - Cryptogramma crispa, Woodsia scopulina, Poa fendleriana, Dicranum sp., Stereocaulon sp.

In the following species list a number of determinations were made by Dr. C. Brayshaw (notably sedges) and Mr. L. Pavlick (some of he grasses) to whom thanks are due. Observations are listed by date giving a rough phenology which could be refined by additional in-fill observations. In this regard it should be pointed out that the 1983 season was early by approximately 2 weeks at the outset after a mild winter, gradually losing this advance by mid-summer. It was notable that Cougar Canyon appeared to be at first about half a week later in flowering date compared with Kalamalka Park. The notation RC refers to species reported by Rob Cannings and not seen during 1983 and LM to a list made by Lynne Milnes on May 13, 1982.

	1	2	3	4	5	6	7	8	9	10	11	12	13	Rep'd 14
Lycopodium annotinum L							club moss							x
Salaginellla densa Rybd														x
" wallacei Heiron							less common club moss							x
Equisetum arvense L														x
" hymale L							horsetail - scouring rush							x
" scirpoides Michx														RC
Botrychium lunaria (L) Swartz														RC
" virginianum (L) Swartz						x								
Athyrium filix-femina (L) Roth							lady fern							x
Cryptogramma crispa (L) R Br							rock brake - parsley fern							x
Cystopteris fragilis (L) Bernh														x
Dryopteris austriaca (Jaco) Woynar							bladder fern wood fern							RC
Polypodium hesperium Maxon							polypody fern							x
Polystichum lonchitis (L) Roth							holly fern - sword fern							RC
" munitum (kauf) Presl														RC
Pteridium aquilinum (L) Kuhn							bracken							x
Woodsia oregana D C Eat														x
" scopulina D C Eat							woodsia fern							x
Juniperus communis L														x
" scopulorum Sarg							common juniper rocky juniper							x
Thuga plicata Donn														x
Pinus ponderosa Dougl							western red cedar							x
Pseutodotsuga menziesii (Mirbel) Franco							ponderosa pine Douglas fir							x
Populus tremuloides Michx														x
" trichocarpa T & G							trembling aspen poplar - cottonwood							x

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Salix bebbiana Sarg	x													x	
" rigida, mackenzian (Hook) Cronq														x	
" scouleriana Barrattx														x	
Alnus incana (L) Moench														x	
Betula occidentalis Hook														x	
" papyrifera Marsh														x	
Corylus cornuta Marsh														x	
Parietaria pensylvanica Muhl								x	x						
Urtica dioica L								x	x						
Eriogonum heracloides Nutt				x	x										
" umbellatum Torr														LM	
Polygonum achoreum Blake							x								
" amphibium L						x	x								
" aviculare						x									
" coccinium Muhl									x		x				
" convolvulus L														RC	
" douglasii Greene						x	x	x	x						
Rumex acetosella L							x								
" crispus							x								
" occidentalis					x										
" maritimus L								x							
Chenopodium fremontii Wats					x			x							
" hybridum														x	
Claytonia lanceolata	x	x													
Montia perfoliata (Donn) Howellx				x											
Arenaria serpyllifolia L			x	x		x	x	x			x				
Lychnis alba Mill															
Stellaria americana							x		x		x				
Nuphar polysepalum Engelm					x		x		x						
Ceratophyllum demersum L														x	
Actaea rubra (Ait) Willd			x	x											
Clematis columbiana (Nutt)T&G			x	x											
" ligustifolia Nutt							x								
Ranunculus aquatilis L														RC	
" glaberrimus	x	x													
" gmelinii							x								
" macounii Britt							x								
" pensylvanicus L					x										
Berberis aquifolium Persh			x	x											
Corydalis aurea Willd														RC	
Arabis hirsuta (L) Scop						x									
" holboellii Hornem			x	x											
" microphylla Nutt		x	x												
" sparsiflora Nutt				x											
"diversicarpa Nels			x												
Capsella bursa-pastoris				x											
Cardamine pensylvanica Muhl					x										
Descurania sophia (L) Webb			x	x											
Draba memorosa L		x	x	x											
" verna L		x													
Lepidium virginicum L						x									
Rorippa curvisiliqua (Hook) Bessey														RC	
" islandica (Oed) Borbas														RC	

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Sisymbrium altissimun L						x	x	tumble mustard						
Sedum stenopetalum Pursh					x	x		stonecrop						
Heuchera cylindrica Dougl			x	x	x	x		round flowered alum root						
Lithophragma bulbifera Rydb			LM					fringecup						
" parviflora (Hook)			x	x				smallflower woodland fringecup						
Mitella nuda L								miterwort x						
Saxifraga bronchialis L				x				spotted sax						
" occidentalis Wats		x						western sax						
" integrifolia Hook			x					swamp sax						
Tiarella trifoliata L			LM					foam flower						
Ribes cereum Dougl				x				squaw currant						
" lacustre (Pers) Poir			x	x				swamp gooseberry						
" viscosissimum Pursh		x						sticky currant						
Philadelphus lewisii Pursh					x	x		syringa						
Amelanchior alnifolia Nutt			x	x				Saskatoon = service berry						
Fragaria vesca L				x	x			woods strawberry						
" virginiana Duchesna			x	x	x			strawberry						
Geum macrophyllum Willd					x			large leaved avens						
" triflorum Pursh				x				prairie smoke avens						
Holodiscus discolor (Pursh)						x		ocean spray						
Physocarpus malvaceus (Greene) Kuntze								mallow ninebark						x
Potentilla anserina L														RC
" argentea Pursh											x			
" glandulosa Lindl			LM											x
" palustris (L) Scop					x	x	x							
" recta L						x		x						
Prunus emarginata (Dougl) Walp														x
Rosa canina L														RC
" gymnocarpa Nutt					x	x								
" nutkana Presl					x									
" woodsii Lindl					x									
Rubus idaeus L					x	x								
" leucodermis Dougl						x								
" parviflorus Nutt			LM	x	x									
Sorbus scopulina Greene														x
Spirea betulifolia Pall					x	x		x						
Astragalus miser Dougl				x	x									
Lotus denticulatus (Drew) Greene						x	x	x						
Lupinus sericeus Pursh					x									
Medicago falcata L							x							
" lupulina L						x	x	x	x		x	x		
" sativa L							x							
Melilotus alba Desr							x		x		x			
Trifolium pratense L						x		x			x	x		
" repens L					x	x	x	x	x	x	x	x		
Vicia americana Muhl					x		x							
Geranium dissectum L					x									
Rhus glabra L														x
" radicans L					x									
Pachystima myrsinites	x	x		x	x									
Acer glabrum Torr			x											
Impatiens noli-tangere L														x
Ceanothus sanguineus Pursh			x	x										
" velutinus Dougl														x
Viola adunca Sm				x										
" canadensis L				x										
" glabella Nutt			LM	x										

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Sheperdia canadensis	x	x												
Circaea alpina L								x						
Epilobium angustifolium L					x	x		x	x	x				
" glaberrimum Barbey						x				x				
" minutum Lindl		x												
" paniculatum Nutt							x		x					
" watsonii Barbey							x	x						
Myriophylum spicatum L														RC
Hippuris vulgaris L			x											x
Aralia nudicaulis L			x	x										
Oplopanax horridum (Smith)Miq														x
Lomatium ambiguum (Nutt) LM														
" dissectum	x			x										
" geyeri (Watts)	x	x												
Osmorhiza chilensis H&A														RC
" depauperata				x	x									
Sium suave Walt							x	x	x		x	x		
Cornus stolonifera Michx			x	x	x									
Arctostaphylus uva-ursi (L)			x	x										
Chimaphila umbellata (L) Bart						x								
Pterospora andromeda Nutt						x								
Pyrola asarifolia Michx					x	x								
" chlorantha Sw					x	x								
" secunda L						X			x					
Dodecatheon pulchellum (Raf)				x										
Lysimachia thyrsiflora L					x									
Apocynum androsaemifolium					x	x								
Cannabis sativa L														x
Microsteris gracilis(Hook)				LM										
Polemonium pulcherrimum Hook				LM										
" micranthum Bent			x											
Phacelia hastata Dougl														x
" linearis (Pursh)			x	x										
Hackelia deflexa (Wahlenb)								x		x				
Lappula redowski (Hornem)														x
Lithospermum ruderale (Dougl)				LM										
" arvense L			x											x
Mysotis micrantha Pall			x	x										
Lycopus americanus Muhl								x	x					
" uniflorus Michx							x							
Mentha arvensis L							x		x	x	x			
Prunella vulgaris L						x		x						
Scutellaria galericulata L						x	x	x	x					
" lateriflora L							x							
Teucrium canadense L									x					
Solanum dulcamara L					x				x					
Castilleja hispida Benth			x	x	x	x								
Collinsia parviflora Lindl	x		x	x										
Mimulus guttatus DC								x		x				
Penstemon fruticosus (Pursh)			x	x										
Verbascum thapsus L							x		x		x			
Veronica americana Schwein											x			
" arvensis						x								
Utricularia vulgaris L					x	x	x							
Plantago major L						x		x						

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Galium aparine L			x	x										
" bifolium Wats									x					
" boreale L						x	x							
" trifidium L							x	x						
" triflorum Michx					x									
Linnea borealis L					x	x								
Lonicera utahensis Wats														LM
Sambucus cerulea Raf														x
Symphoriocarpus albus L						x	x	x						
Triodanis perfoliata (L)						x								
Achillea millefolium L				x	x	x	x	x						
Antennaria anaphaloides Rydb					x	x								
" dimorpha (Nutt)		x												
" microphylla Rydb					x									
" racemosa Hook				x	x									
" umbrinella Rydb			x	x	x									
Arctium minus (Hill)							x							
Arnica cordifolia Hook			x	x	x									
" latifolia Bong				x										
Artemisia frigida Willd														x
Aster ciliolatus Lindl									x	x	x			
" conspicuus Lindl							x	x	x	x	x	x		
" modestus Lindl														RC
" occidentalis (Nutt)										x				
Balsamhorhiza sagittata		x	x	x										
Bidens cernua L									x		x			
Centaurea diffusa Lam						x	x	x						
Chicorum intybus L								x						
Chrysopsis villosa (Pursh)						x								
Circium arvense (L) Scop											x			
" undulatum (Nutt)						x								
" vulgare (Savi)							x		x	x				
Conyza canadensis (L)								x	x					
Crepis atrabarba Heller					x	x								
Erigeron compositus Pursh				x										
" philadelphicus L					x	x	x	x						
" pumilus Nutt						x	x							
" subtrinervis Rydb					x	x	x	x						
Filago arvensis L						x	x	x						
Gaillardia aristata Pursh					x		x							
Hieracium albiflorum Hook					x	x	x							
" canadense Michx							x	x						
" cynoglossoides						x	x	x						
" scouleri Hook						x								
" umbellatum L								x	x					
Lactuca biennis (Moench) Fern								x		x				
" serriola L							x		x					
Matricaria matricaroides (Less)						x								
Microseris nutans (Geyer)				x										
Solidago occidentalis (Nutt)									x					
Sonchus arvensis L							x		x					
Taraxacum officinale Weber			x	x			x				x			
Tragopogon dubius Scop					x		x							
" pratensis L														x

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Alisma plantago-aquatica								x						
Elodea canadensis Rich														x
Najas flexilis (Willd)														x
Potamogeton diversifolius Raf														x
Juncus articulatus L							x							
Carex atherroides Spreng					x									
" bebbii Olney														RC
" comosa Boott					x									
" concinnoides	x													
" deweyana Schw								x						
" lanuginosa Michx					x									
" feta Bailey							x							
" retrorsa Schw					x									
" rossii Boott				x										
" rostrata Stokes					x									
" stipata Muhl					x									
Eleocharis palustris (L)					x		x							
Scirpus acutus Muhl							x							x
" maritimus L														x
Agropyron spicatum (Pursh)				x	x									
Agrostis alba L var. stolonifera						x	x							
" scabra Willd								x						
Alopecurus aequalis Sobol					x									
Apera interupta L				x										
Bromus japonicus Thumb							x							
" mollis L						x								
" tectorum L			x	x	x		x							
Calamagrostis canadensis (Michx)					x	x								
" rubescens Buckl						x								
Dactylis glomerata L				x		x								
Deschampsia elongata (Hook)						x								
Echinochloa crus-galli (L)											x			
Elymus glaucus Buckl						x								
Festuca campestris Torr				x		x								
" occidentalis Hook					x	x								
Glyceria striata (Lam)								x						
Hordeum jubatum L							x							
Koeleria cristata Pers				x	x									
Oryzopsis asperifolia Michx					x									
Panicum capillare L											x			
Phalaris arundinacea L					x	x	x							
Phleum pratense L						x	x							
Poa annua L						x	x							
" compressa L								x						
" fendleriana (Steud)			x											
" juncifolia Scribn				x	x									
" interior Rydb ?					x									
" pratensis L				x		x								
" scabrella (Thurb) Benth					x									
" secunda Presl			x	x										
Stipa occidentalis var. minor						x								
Trisetum canescens Buckl					x									
" spicatum (L) Richter					x									
Vulpia octoflora Walt			x	x										
Sparganium emersum Rehmann								x						

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Typha latifolia L						x	x							
Lysichitum americanum				x										
Lemna minor L														x
Spiordela polyrhiza (L) Scheid														x
Asparagus officinalis L														x
Calochortus macrocarpus Dougl			LM				x	x						x
Disporum trachycarpum (Wats)														x
Fritillaria lanceolata Pursh			x	x										
Lilium columbianum Hanson					x									
Smilacina racemosa (L) Desf			x	x										
" stellata (L) Desf				x										
Streptopus amplexifolius (L) DC														RC
Zygadenus venenosus Wats			x	x										
Sisyrinchium angustifolium Mill					x									
Calypso bulbosa (L) Oakes			x											
Corallorhiza maculata Raf						x								
" striata Lindl														x
Goodyera oblongifolia Raf								x						
Habenaria elegans (Lindl) Boland								x						

Seen nearby - Crataegus columbiana Howell (specimen with very little thorn development), Salix exigua Nutt, Prunus pennsylvanica (reported by LM).

On the list provided by LM I have not included a sighting of Betula glandulosa. Arabis lemmonii has been changed to A. microphylla and Eriogonum umbellatum has been retained although possibly it should have been E. heracloides.

Over all there were no really startling finds. Two specimens, both confirmed by Dr. Brayshaw, were rather out of range - Carex feta is given by Hitchcock as being found west of the Cascades and Stellaria americana he shows as a plant of mountain talus in south-west Alberta and Montana whereas in Cougar Canyon it was growing in damp stream-side soil. In certain aspects resembled S. aquatica (L) Scop. Other plants not common in this area were the two Botrychium and two Polystichum ferns, Pteridium aquilinum, Arabis diversicapa, Potentilla argentea, Hackelia deflexa, Teucrium canadense, Aster occidentalis and Hieracium scouleri.

The plantation of about 400 plants of marajuana was set out in groups of four, staked and with a central watering hole to each group. Some timber clearance at the side of lake # 10 had been made by the cultivator to provide light and a certain amount of bush removal took place later by police to allow helicopter access for removal of the cut material. Up to the present this has been the largest seizure in the Okanagan and at current prices would have run into six figures in total making this one of the most productive ecological reserves in the system.

INSECTA

Initial good intentions included listing this huge field, however its daunting size and the specialized knowledge required quickly disabused the writer from this course after the first two visits.

ARACHNIDA

Acarina
Dermatocentor andersonii
Araneae
Little systematic study has been made of the spider fauna in the Okanagan. Several experts in the field have made collections at various times while visiting or passing through the area and these lists are available. As part of the project to inventory Kalamalka Park a collection was made there and this has been supplemented by work elsewhere in the north Okanagan with a view to complementing similar studies by another student in the south end of the valley. The following list adds to this work.

In all cases the species determination has been made by Dr. C. D. Dondale and Mr. J. H. Redner of the Biosystemics Research Institute, Ottawa, to whom thanks are due. Mostly where indentification is made only to genus level the specimen had not reached maturity. In other casesthe group is in flux and subject to revision.

CLUBONIDAE
Castianeira walsinghami (Pickard-Cambridge)
GNAPHOSIDAE
Gnaphosa muscorum (Koch)
PHILODROMIDAE
Philodromus cespitum (Walckaener)
THOMISIDAE
Xysticus sp. (X. emertoni Keyserling ?)
Misumena vatia (Clerk)
DICTYNIDAE
* Dictynia subpinicola Ivie
" annulipes (Blackwall)
AMAUROBIIDAE
Titanoeca sp. ?
ANYPHAENIDAE
Anyphaena sp. (A. pacifica ?)
AGELENIDAE
Agelenopsis potteri (Blackwall)
* Cicurina intermedia Chamberlin & Ivie
* Cybaeota sp.
LYCOSIDAE
Pardosa mackenkiana Keyserling
" sp. groenlandica complex
Lycosa frondicola Emerton
Schizocosa sp. (S. mccooki (Montgomery) ?)
Trochosa terricola Thorell

SALTICIDAE
  * Pellenes sansoni Emerton
    Evarcha falcata (Clerk)
    Phidippus johnsoni Peckham & Peckham
    Metaphidippus sp.
THERIDIIDAE
    Theridon differens Emerton
ARANIDAE
    Nuctanea patagiata (Clerk)
    Araniella displicata (Hentz)
    Metellina mimetoides Chamberlin & Ives
    Cyclosa sp. (C. conica (Pallas) ?)
    Tetragnatha versicolor Walckaener
LINYPHIIDAE
    Pityohyphantes sp.
    Neriene radiata (Walckaener)
  * Lepthyphantes intricatus (Emerton)
        "   zebra (Emerton)
    Linyphiidae sp.
ERIGONIDAE
    Ceraticelus fissiceps (Pickard-Cambridge)
    Symmigma minimum (Emerton)
ULOBORIDAE
  * Hyptiotes gertschi Chamberlin & Ives

Those species marked with an asterisk were retained in the National Collection as being of special interest.

ADDENDUM

A short visit was made on 13th January 1984 as a result of which pine grosbeak and brown creeper should be added to the bird list. Pine grosbeak were in good number on this occasion . Other observations were red-breasted nuthatch, raven, black-capped chickadee, Steller's jay and red crossbill.

Prints of coyote barely passed into the reserve indicating that in winter they tend to spend more time outside in more open country. Some grouse prints were seen and deer tracks were common in most types of environment except thick woods.

What appeared to be wood chips and gnawings of a very fresh nature were present among birch saplings on the ridge between lakes # 10 and 11 where I had seen none during the summer. Earlier comments on the presence of beaver may therefore have been too pessimistic. There did not appear to be any noticeable activity around the nearby lodge which was covered by snow.

CONCLUSION

In view of the nearness to Kalamalka Park it is tempting to compare the two areas but first it must be admitted that Cougar Canyon is by far the smaller of the two and much less time has been spent examining it.

With these provisos it is clear that the reserve offers less enviromental variety as is suggested by the lesser totals for birds and higher plants by about 50 and more than 100 species respectively. Nevertheless it holds considerable interest and further work would doubtless reveal local ecotones with additional finds within them.

Perhaps its strongest point is paradoxically also its main weakness in that length of approach and difficulty in travel once in the reserve detract from one of the purposes of ecological reserves, that of availability for scientific research and education. On the other hand its location and configuration combine to give it value for the other as litle alteration or destruction is likely from either cattle intrusion or human visitation, particularly the farther one goes from the two ends.

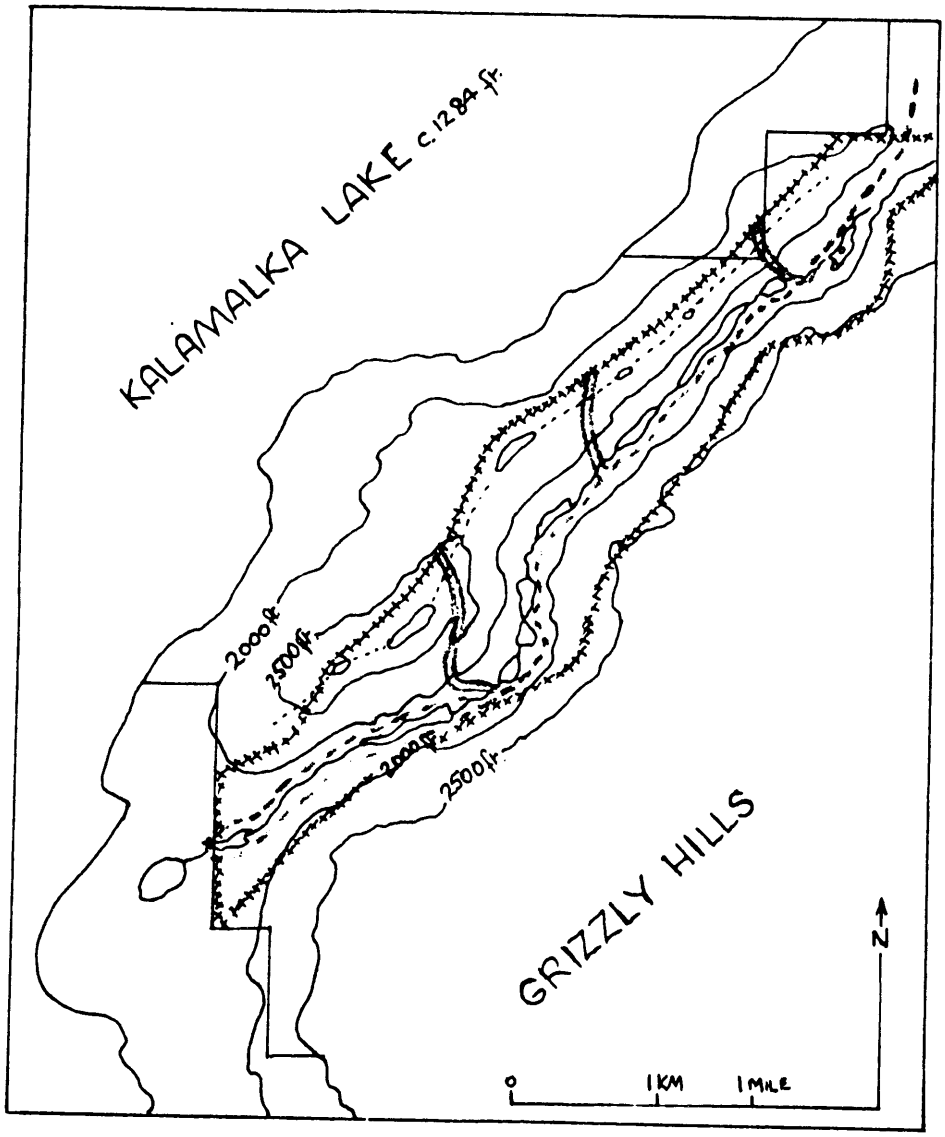
Greatest hazard must be from fire. All the old campsites found included open fire places and the Okanagan is an area of summer electric storms. A small fire (less than 1/4 Ha., 1/2 acre) did occur on the PLR west of lake # 1 in 1977 and in 1961 one exceeding 500 Ha. (1,235 acres) started at the level of Kalamalka Lake and entered the reserve west of lake # 4. Far larger than either of these was a major fire some 60 years or more ago.

High slope angle, funneling effect to southern and south-western winds and well-cured condition of ground vegetation bespeak a high hazard rating. Low volume of ground fuel, discontinuous crown canopy of tree cover (except on the south-west side) and vsisbility from Highway 97 across the lake are offsetting factors.

This reserve is not suitable for casual visits by those interested in ecological reserves. The fact that entry at the south end has to be through private property does not please the owner Mr. Ken Ellison, who I gather has never been contacted by Unit personnel. Trespass has always been a worry and his main concern that creation of this reserve would lead to a large influx of visitors invading his domain has coloured his attitude to this Provincial facility. I have pointed out the purposes of ecological reserves and that although they are shown on Government publications on this subject they are not publicized or advertised on tourist information. His mind is more at rest now, however an official letter would not be amiss thanking him for allowing access this past season and offering any help should nay difficulties arise which he considers stem from the presence of the reserve.

Malcolm E. Martin signed "M.E.Martin"
January 1984

COUGAR CANYON E.R. 108

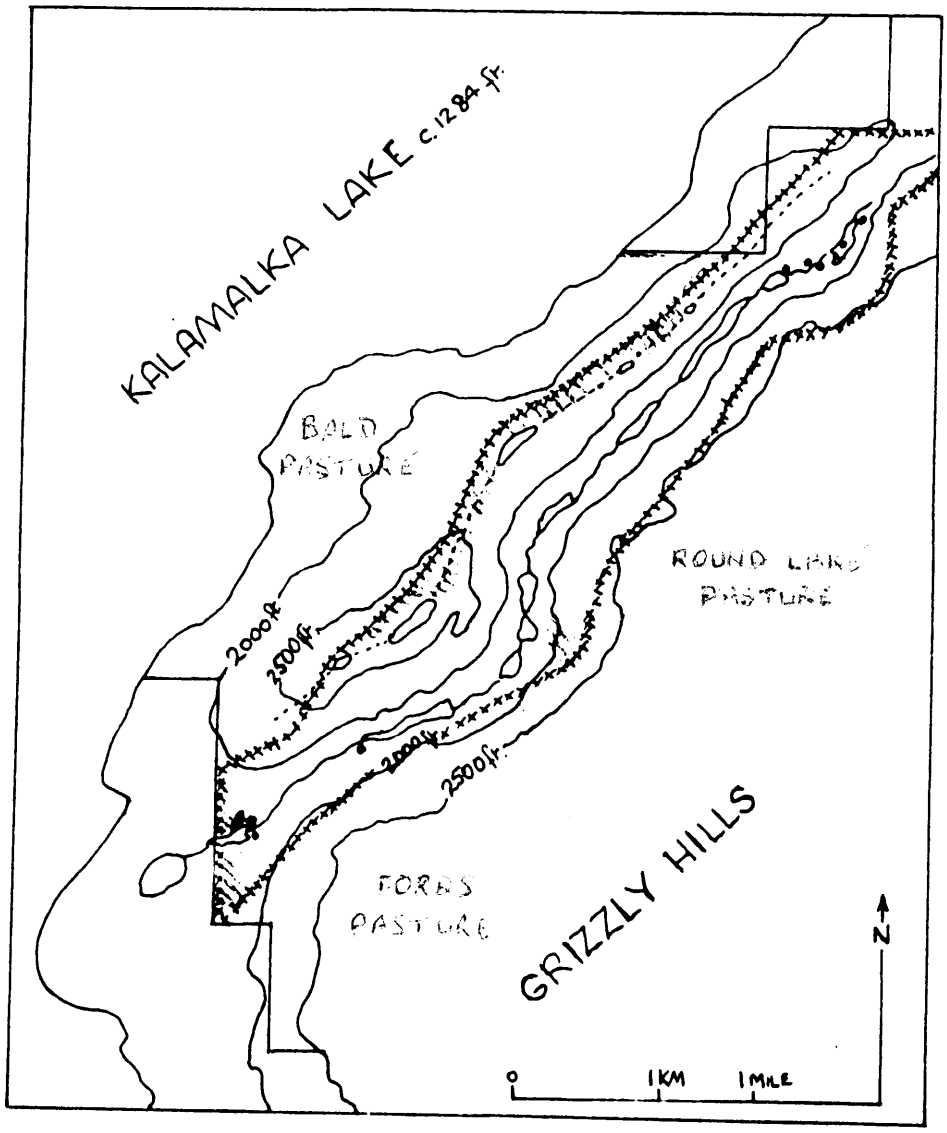


MAP 2.

route of descent

route of travel

COUGAR CANYON E.R. 108



MAP 3.

boundary of grazing lease

area of cattle presence within lease

site of camping