

The Log

Friends of Ecological Reserves Newsletter

Victoria B.C.

Summer 1995

EDITORIAL

Towards Goal 3

The B.C. Government will soon make a decision about the Protected Area Strategy "Goal 2" candidates for Vancouver Island. These are the small areas, some 500 around the island, for which there are but 11,800 hectares left in the government's 13 per cent quota. They could give each one 23 hectares — but that would be silly. Isn't it just as arbitrary to stop at 13 per cent when we know the job clearly isn't finished, in the sense of providing adequate protection for B.C.'s representative ecosystems and areas with attributes of scientific and educational value.

Among the ecological reserve proposals that have made the cut so far: the Artlish Cave near Zeballos, with "the last remaining undisturbed karst unit on Vancouver Island incorporating a major river cave;" a lowland forest in the Douglas Fir Zone near

Bowser with *Aeshna sitchensis*, a plant "extremely rare on southeast Vancouver Island;" the Butler Creek addition to Haley Lake Ecological Reserve, the core known habitat of the Vancouver Island marmot; Kwakiutl / Lawn Point, a waterfront area with unique geological and botanical features; the Ladysmith Bog; Notch Hill, Garry oak habitat near Nanoose Bay with rare cactus and wildflowers; the San Juan River Delta near Port Renfrew, with west coast alluvial forest like that in no existing ecological reserve; Seal Bay in the Courtenay-Comox area, with representative wetlands in the Coastal Douglas Fir Zone; the Somass River Estuary in Port Alberni, with many rare plant species, and abundant waterfowl; and Woodley Range meadowland near Ladysmith with several rare wildflower species.

The Niagara Creek addition to Goldstream Park is also a candidate that we've been pushing for.

If valuable remnant forest ecosystems like those in the middle Klanawa River and surrounding the Nimpkish River reserve don't make the cut, it could be because the industry is holding government to an inflexible

NotePost

Annual General Meeting Rescheduled

The Friends' annual general meeting, originally slated for April, was cancelled owing to a lack of quorum. According to our constitution, 10 per cent of the membership must attend. (The board of directors had a fruitful meeting instead.) We've rescheduled the annual general meeting for Saturday, September 16 and tried to make it as attractive as possible, especially for out-of-towners. The Friends will tour the magnificent new Gowlland Tod Provincial Park. Beginning at 3 pm, we'll gather at Vicky Husband's rural home in the Highlands, have a swim and enjoy a pot-luck supper. The meeting will begin at 5 pm. Please consult the calendar for more information. Let us know if you can come!

In this issue

Landowner contact project	2
Douglas fir forest flora	3
Easter on Jedediah Island	4
Lew Creek ER research	6
Sea Otters and kelp beds	9
Protected area news	10
Letters about visiting reserves	11

ceiling. We would like to encourage the decision-makers to save a little more of British Columbia's ecosystems for knowledge's sake. These are little areas; they don't add up to much on paper, but we need them protected. They should be allowed to stay as they are.

FRIENDS' BUSINESS

1995 Research Grants

This year the Friends' board approved research funding to support these applicants' work:

- Jane Watson, monitoring subtidal community structure in response to sea otter foraging in permanent sites around Chelcheset Bay Ecological Reserve and other places on the west coast of Vancouver Island — written up in this newsletter
- Pam Rutherford and Tom Reimchen, University of Victoria Department of Biology, travel costs associated with study of behavioural and ecological associations between threespine sticklebacks and avian predators, particularly Common Loons, in the vicinity of Drizzle Lake Ecological Reserve, Queen Charlotte Islands; part of "one of the few long term ecological investigations in western North America."
- Adrienne Mason, Bamfield Marine Station, to assist with publication of an issue of *Ocean News*, a school-age education package, with the theme of marine biodiversity; the publication will include descriptions of B.C.'s marine ecological reserves
- Blair Hammond, UBC School of Forestry, to field-test wildlife abundance monitoring methods at the Baines Island Ecological Reserve
- Robin Baird, Marine Mammal Research Group, to continue long-term study of transient killer whale predation of harbour seals at haul-outs in the vicinities of the Oak Bay Islands and Race Rocks ecological reserves; Robin reports that an article on the subject was published in the July 1995 issue of the *Canadian Journal of Zoology*

Good-Bye and Hello

The Friends have lost three valued workers. **Bristol Foster** has resigned as our president after many years, and **Henry Bauld** resigned as treasurer after serving for quite a few. Bristol will continue to serve on the board of directors. Henry has moved on to greener habitats. Hope to see you on some field trips, Henry!

We have also lost the services of our long-time mail list manager, **Josette Wier**. Josette is building a house in Smithers, and we wish her success in her new home. Thanks for all that work on the computer, Josette!

At the April 22 board meeting Lynne Milnes was voted the society's new treasurer, in keeping with the terms of our constitution.

The Friends' board encourages members interested in taking on projects to stand for director. One need only be a member in good standing and attend the Annual General Meeting on September 16.

Planned Giving

Pen Brown attended a workshop on "planned giving" by a consultant who provides fund-raising services to not-for-profit organizations and who referred to the practice as "the Canadian non-profit sector's major untapped resource."

Small organizations can't afford to hire consultants to go after charitable gifts. A volunteer armed with a simple prospectus could acquaint interested people with the option. If someone nurtures an interest in seeing the Friends' programs expand and would like to review the how-to literature from the workshop, please contact the office manager (595-4813). Fund-raising experience would be an asset but is not a requirement.

Should any members wish to make a bequest to the Friends, it is a simple matter of adding a clause to one's will. In 1995 a Victoria member became the first person to name the Friends in a bequest. We appreciate such generosity.

Help Wanted:

Landowner Contacts

The Friends are initiating an exciting new project. We're seeking funding to co-ordinate a landowner contact program. The purpose of the project is to acquaint B.C. property owners with options for private land conservation — particularly the recently-legislated power of designating non-governmental organizations as conservation covenant holders. There are also income tax changes offering relief to landowners who covenant properties. The project will operate by referral from informed sources throughout the province. We will be targetting regions where the need to protect ecosystems is most acute. Gap analysis has revealed that there's a looming crisis in the rate of loss of unmodified ecosystems in several regions of the province: southeastern Vancouver Island, the Gulf Islands, the lower mainland, the southern interior, parts of the Kootenay and Cariboo regions. The B.C. Government's wholehearted support of the Protected Area Strategy probably won't help to shore up biodiversity in these areas, because there simply isn't much Crown land to protect, and after the current strategy is complete, there won't be much money left over to buy more land. Attaching conservation covenants to private property and designating a conservation organization as its manager is becoming an attractive alternative.

We can start gathering information about specific properties worth protecting immediately, as well as collecting leads on landowners who might be interested in knowing more about conservation covenants. Please write to the Friends about candidate areas. (Privacy respected.) For more information about conservation covenants, call Briony Penn (653-4880).

CALENDAR

Fall Field Trips

Gowlland Tod Park

Saturday, September 16

A walking tour, likely of the Jocelyn Hill vicinity, with a guide from the Highlands community to explain the park management planning process. Meet in the Red Barn Farm Market parking lot, 5550 West Saanich Road, at 11:30 am. Map of access to trailhead will be posted.

[Only notice to members]

*You are cordially invited to attend
Friends of Ecological Reserves'*

Annual General Meeting

Saturday, September 16, 1995

5 pm, at the home of Patrick

Pothier and Vicky Husband

Durrance Road, off Willis Point

Road, the Highlands

Follows the Gowlland Park field

trip, swimming and pot luck

supper. For detailed directions or

to arrange car pools, call Peter

Grant (585-4813).

Nimpkish Island

Saturday, October 7

Ecological reserve warden Rolf Kellerhals will guide this Thanksgiving week-end excursion to survey erosion problems in the famous river bed Douglas fir forest. We will meet under the spar tree in the Tyee Plaza in downtown Campbell River at 10:30 and drive to the site. Access may be difficult — wear sturdy footwear. Limited to 15 people — please register by calling Peter at 595-4813.

Seen the tree, walked in the forest. Now it's the
Douglas Fir Forest Placemat

The Friends' artistic talent has been diligently assembling a second placemat to accompany the handsome Garry oak meadow dining-room accessory. Its purpose is to make people aware of some conspicuous flowers in the Douglas fir forest and suggest the diversity of its forest flora. Like its companion, the full-colour display will show both native and invader species.



Salmonberry
Rubus spectabilis
Artist: Peggy Frank

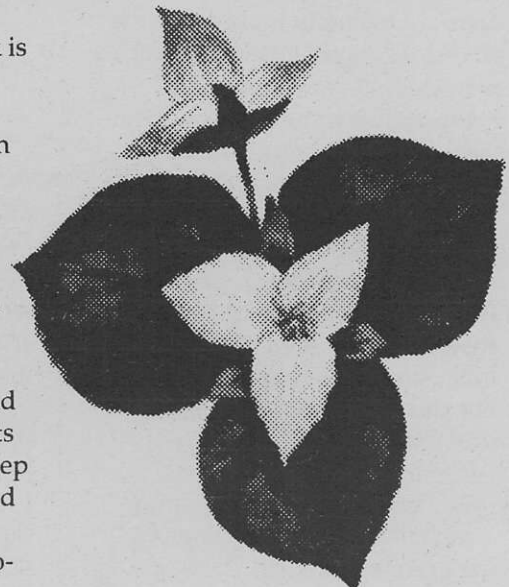
A small sample of the artwork is shown here at close to original size. Artists not represented included Trudy Chatwin, Evelyn Hamilton, Susanne Barker and Donald Gunn.

Laminated and, with luck, on the market by Christmas, the placemats will be available for a donation of \$3 to \$5 each. And here's a modest, low-overhead fundraising idea: individuals and groups may obtain the placemats at cost (\$2), market them and keep the profits. They may be ordered from Evelyn (388-5690).

As the Friends' placemat ecologists make their way through British Columbia's ecosystems — a lifetime's work in itself — they're pondering their next project. The antelope brush grassland of the southern interior is high on the list of prospects.



Vanilla-leaf
Achlys triphylla
Artist: Alison Watt



Western trillium
Trillium ovatum
Artist: Briony Penn

FIELD REPORTS

Brackman Island

This ecological reserve combines upland and subtidal ecosystems some 4-km north of Swartz Bay. A work party of five or six tiptoed about the meadows pulling tiny broom shoots. Camping on Portland Island was a bracing experience at the end of February. People boated from Salt Spring Island the next morning.

Jedediah Island

The Friends' invasion of Lasqueti Island was lost in the Easter weekend crush at the French Creek ferry slip. The passenger-only ferry filled up so quickly several of our party missed it just by turning the wrong way at the wrong time, or so it seemed. They chartered a private craft and turned up on the dock at False Bay in good time to rendezvous with the *Affinity I*, Norm Holmes's and Heather Hay's 45-foot diesel yacht out of Courtenay, on which five Friends were travelling in luxury. For the next three days Norm and Heather provided us with convenient, cheap transport and lots of hospitality. Making for the one deep and secure moorage on Jedediah Island, on the northwest side of the island, protected from winds up and down the Strait of Georgia, we found the gang that sailed from Nanaimo. Sue Carr kayaked in the next day, rounding out a bunch bent on exploring this just-designated park.

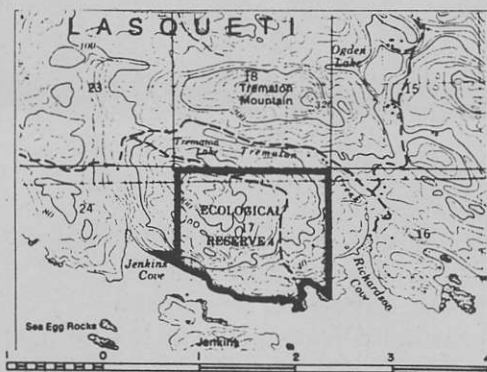
The terrain of Jedediah is moderately rugged. We had to search for level tentsites among the granite outcrops. The boats carried water, fortunately, with only a rumour of springwater, and that at some distance.

Feral goats persist from the years the island was farmed, and Jedediah is relatively poor in wildflowers as a consequence. We spotted little flocks of scruffy

animals now and then, but Jedediah is big enough that they could easily hide. Between 30 and 50 goats are now on the island, it's believed.

The next morning we embarked for a tour of the Lasqueti Island Ecological Reserve, sailing around the south end of the island and past Sangster Island, which reputedly retains its floral diversity. On the beach where we landed, just outside the reserve, we met the reserve's warden, Al Gaensbauer. An islander, Al had walked down the old logging road that crosses the reserve and ends in an adjacent cove.

The Lasqueti reserve is overrun by sheep and goats. We spotted a lamb and its mother right off, and later a large flock bounding up a slope. The feral animals have breached the fencing that was erected some years ago (with



financial assistance from the Friends). The result has been to impoverish the floral diversity within as without. Browsing has cropped the ferns on both sides of the fencing we walked.

On a cliff near the bay these plant species were recorded: a scarlet *Castilleja* sp. (paintbrush), *Cerastium arvense* (field chickweed), *Grindelia integrifolia* (entire-leaved gumweed), *Artemisia* sp. (Suksdorf's mugwort), *Claytonia perfoliata* (miner's-lettuce), *Lonicera hispidula* (hairy honeysuckle), *Heuchera micrantha*, and *Verbascum thapsus* (common mullein).

We walked up the road and made for Mount Jenkins, whose brow takes in the reserve, the little

islands offshore and the distant Vancouver Island shore. Grazing animals haven't left much at the top of the mountain, either. These species were identified: *Claytonia perfoliata*, *Collinsia* sp. (blue-eyed-Mary), *Geranium* sp. — likely introduced by sheep — *Calandrinia ciliata* (red maids), *Lithofragma parviflorum* (small-flowered woodland star), *Tellima grandiflora* (fringe cup), and *Juniperus scopulorum* (Rocky Mountain juniper).

In a shady gully, too narrow for goats to manoeuvre, were *Heuchera micrantha* (small-flowered alumroot), *Rubus parviflorus* (thimbleberry), *Mimulus alsinoides* (chickweed monkey-flower), *Sedum divergens* (spreading stonecrop), *Holodiscus discolor* (oceanspray), *Myrsinites pachystima*, *Rosa gymnocarpa* (dwarf rose), *Juniperus scopulorum* with witches broom in the crown. A little clump of *Cerastium arvense* grew in a more exposed spot, surrounded by a protective wall of *Opuntia fragilis* (brittle prickly-pear cactus).

Bird sightings included the predictable winter wren as well as yellow-rumped warbler, American robin, glaucous-winged gulls, bald eagle, orange crowned warbler, turkey vulture, common raven and song sparrow.

Easter Sunday morning found the children scrambling over the rocks in search of bunny eggs. Driftwood was fashioned into a raft, and they cruised around the tiny bay. The day grew unseasonably warm. Doug Hopwood, Sue Wheeler and Peter Johnston of Friends of Jedediah kayaked over to our campsite and led us on an excursion across the island to the abandoned farm on Home Bay. En route we crossed a large field with a horse grazing. Doug, a practicing forester, speculated the cleared land was once cedar swamp. We traversed one such stretch of forest, a gloomy lowland. The southeast end of the island, which

takes a day of bushwhacking to explore, is considerably higher.

The island's one habitation, an old farm, sits empty on an almost enclosed east-facing bay with one narrow inlet and, at the backs of several lagoons, huge oysters. The bay empties at low tide. On the opposite shore is a fine sandy beach. Kayakers from Vancouver were breaking camp and toting their craft the considerable way to the water.

Yellow ribbon bars the doors to the farmhouse, which appears in good shape for its age. It would make a good interpretive centre or warden's quarters. The front lawn was festooned with daffodils. There was a heavy growth of nettles about the greenhouse.

After lunch Doug took us for a tour of the forest along the north-east side of the island. We encountered an ancient honeysuckle winding around a shore pine trunk and a Pacific yew tree estimated to be 85 cm. in diameter and 25 m. high; a multi-aged Douglas fir forest, with seedlings growing under the canopy, contrary to the norm in the Coastal Douglas Fir forest. There are rocky outcrops covered with thick, fragile lichens. Across a channel loom the much-higher shoulders of Texada Island.

Later Alison and Kim assembled their French double collapsible canvas kayak. Bristol roasted delicious oysters on the fire that evening, while those aboard *Affinity* rounded out a first-rate meal with pavlova. Every so often Heather or Norm would row in with water.

Monday dawned grey, threatening, then delivering, rain. We were only too happy to pack up, bid adieu to the sailors and leave, fighting the wind up the east coast of Lasqueti to False Bay, where we all had to miss a ferry. The trip across the strait was wild, with the northwesterly wind blowing the

ferry around like a cork in a bathtub. The sailors had an even wilder, bumpier crossing. They barely reached Schooners Cove before nightfall.

Thanks to Norm and Heather for proposing *Affinity* as our vehicle. Al Gaensbauer, Chris Pielou, Doug Hopwood Sue Wheeler, and Peter Johnston all were excellent guides.

Doug recently sent us a proposal he has lodged with government for the protection of the islands and subtidal surrounding Jedediah in Sabine Channel, as well as the mountainous (to elevation 900 metres) south end of Texada Island, for both conservation and recreation.

Caren Range

June 10: met up with Paul Jones, John Field and other Friends of Caren at the wildlife rehabilitation centre in Halfmoon Bay. The little group is dedicated to the protection of an extraordinary sub-alpine yellow cedar - mountain hemlock forest in the Caren Range, the mountainous backbone of the 40-



kilometre-long Sechelt Peninsula. As awesome as were the vistas up Salmon and Narrows inlets from the logging roads that almost encircle Caren's peaks, so was the 1820-year-old yellow cedar stump (above). Older than any known tree in Canada, it speaks to us of the careless fate that could await many of our ecological treasures.

Ragged Mountain

A group led by Hans Roemer, Adolf Ceska and Oluna Ceska toured the vicinity of Ragged Mountain, north of Glintz Lake, near Sooke, bound for the site of a proposed ecological reserve with very high species diversity compared to other places on southern Vancouver Island. A plant list Hans compiled in 1981 for Ragged Mountain and Buck Hill, which together comprise ERP 320, revealed the presence of 36 yellow-listed (threatened), a blue and a red (rare and endangered) species. From the day's surveys, Hans was able to add the following species to the plant list: *Adiantum pedatum* (maidenhair fern), *Apocynum androsaemifolium* (spreading dogbane), *Carix rossii* (Ross' sedge), *Chimaphila umbellata* (Prince's-pine), *Cirsium vulgare* (bull thistle), *Corallorhiza maculata* ssp. *mertensiana* (western coralroot), *Epilobium paniculatum* (tall annual willowherb), *Vulpia megalura* (foxtail fescue), *Koeleria macrantha* (June grass), *Lupinus bicolor* (two-coloured lupin),

Montia linearis (narrow-leaved montia), *Prunella vulgaris* (self-heal), *Senecio sylvaticus* (wood groundsel), *Stellaria nitens* (shining starwort), and *Trientalis latifolia* (broad-leaved starflower).

The ecological reserve proposal was dropped during the Protected Area "Goal 2" process, unfortunately. There may be alternative candidates for protecting the biodiversity in the Sooke

Hills, however. Capital Regional District parks staff are studying the off-catchment lands in the Greater Victoria Water Supply Area. Contact Joel Ussery at 478-3344 for information. The Friends have a copy of the terms of reference for the study, due for public review this winter.

RESEARCH REPORTS

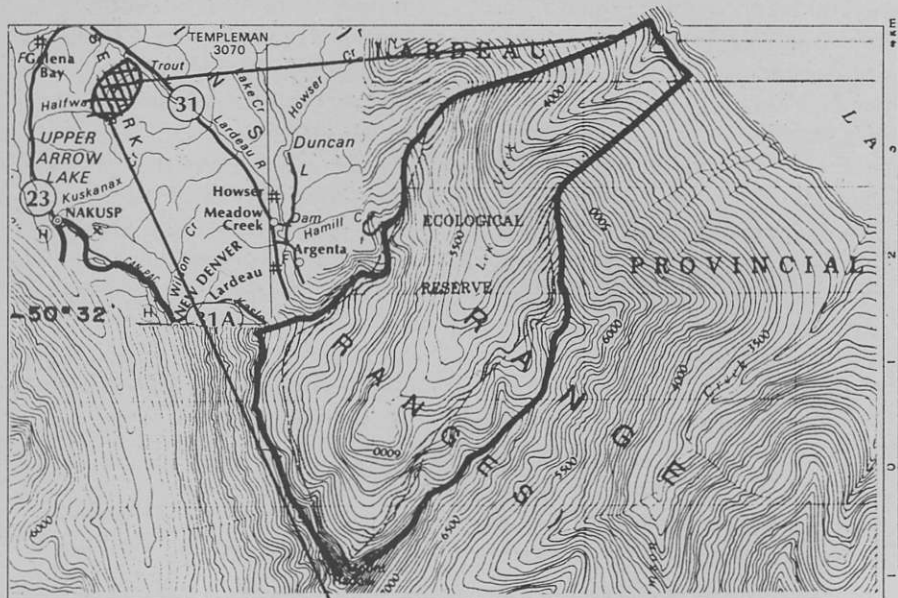
Preliminary Biological Surveys, Lew Creek Ecological Reserve

Wayne McCrory, RPBio, Valhalla Wilderness Society, New Denver

Dr. James Bergdahl, forest ecologist, Northwest Biodiversity Centre, Seattle

The 815-hectare Lew Creek Ecological Reserve (#31) protects most of the watershed of Lew Creek, which flows into Trout Lake, bordering the northeast slope of the Slocan Ranges. The reserve encompasses interior cedar-hemlock and Engelmann spruce-subalpine fir forest types as well as alpine tundra in the vicinity of Mount Hadow, some 55 km. north of New Denver.

The reserve is situated near the northern boundary of the Valhalla Society's White Grizzly Wilderness proposal, in an area of heavy logging. (See "The case for protection of the White Grizzly Wilderness Area, a 21-pp. draft report to the Valhalla Society by Wayne McCrory, Erica Mallam and Grant Copeland, 1991). The society hoped to win protection for the remaining intact old-growth stands on the southwest side of Trout Lake and associated high-elevation forest critical to wintering mountain caribou. Originally 135,000 hectares in size, the proposal was scaled back to 101,481 ha. following the West Kootenay/Boundary CORE process; and to 79,500 ha. in the BC Government's West Kootenay-Boundary Land Use Plan. The Goat Range Provincial Park (White Grizzly Wilderness Area) announced in July weighs in at 78,947 ha. Among the excluded areas are the forests along Trout Lake. With ongoing encroachment of clearcut logging from both the north and south, there are mounting concerns about the survival of the caribou herd and the ecological integrity of the ecological reserve. Slocan Forest Products has imminent plans to extend the logging road near the south boundary of the reserve. (The mouth of Lew Creek is outside the reserve. The lakeshore may have been excluded from the reserve to allow for logging road right-of-way.)



Purpose of the Study

The intent of this research was to focus on biodiversity and protective values of the Lew Creek Ecological Reserve by studying two representative but very different classes of life forms: mountain caribou and lowland ground-beetles (family Carabidae).

In the Columbia Mountain Ecoregion, as elsewhere, mountain caribou have been shown to be very dependent for winter survival on arboreal lichens in old growth forests at both low and mid-high elevations. Early winter range generally involves old-growth hemlock-dominated forest at low elevations where caribou feed on wind-blown tree lichens deposited on the forest floor, as well as a variety of ground plants, particularly falsebox (*Pachistima*). As winter progresses and snow depths increase, caribou migrate upwards to feed more on tree lichens in subalpine forests. Clearcut logging of old forests on caribou winter ranges, combined with wildfire and forest diseases, constitute a severe threat to the long-term survival of mountain

caribou in the Columbia Mountains. Critical low elevation winter range has been identified along the west side of Trout Lake — see B. Herbison's "Mountain caribou in the Slocan-Lardeau-Duncan and the proposed White Grizzly Wilderness Area," a 5-page draft report plus appendices, 1991.

The Lew Creek reserve is situated in the interior rain forest. In typical wet Pacific Northwest conifer forests about 90 per cent of all plant and animal species are invertebrates. The diversity of forest invertebrates provides indicator species of extremely distinctive habitats, as well as conservation challenges not represented by vertebrates and plants. Carabid beetles are becoming recognized as one of the best indicators of biodiversity in ecosystems because they are rich in species: some 13 per cent (933 species) of all insect fauna in Canada are carabids. In British Columbia, Washington, Idaho and Oregon, 697 species are known. Carabids are "big predators" in soil ecosystems, and in moist Pacific Northwest forests, they are

mostly large-bodied (>30 mm) and flightless species, accounting for much animal biomass. No studies of these species have been carried out in the Central Columbia Mountains. This study therefore focussed on conducting a basic inventory of carabid beetles in and around the Lew Creek reserve.

Method

Field studies were carried out on June 10, 1995 by Dr. James Bergdahl and Wayne McCrory. Access to the Lew Creek reserve was by boat from Gerrard, at the south end of Trout Lake.

The survey consisted of:

- photodocumentation of the clearcut and intact forests from the Lew Creek reserve and the outlet of Trout Lake
- a 1 km. linear strip transect through the bottom of Lew Creek and along the southern boundary of the reserve to about mid-elevation. A record was kept of all apparent caribou winter pellet groups, trails, old antlers, bedding sites, and other sign. Notes were kept on dominant forest cover and densities of the various potential ground plants available to caribou. Carabid beetles were collected from both the stream and forested zone. Carabids were preserved in a solution of 70% ethanol and 5% vinegar. Species were later catalogued and labelled. A list of species will be made available to the Royal B.C. Museum.
- notation of other wildlife sign: bear use, black bear dens in the hollow interiors of cedars, etc.
- notation of evidence of the stripping of cedar bark or other use of old trees by indigenous people (the Sinixt or Arrow Lakes Band).

Results

The forests surveyed comprised apparently very old trees dominated by western hemlock on the main benches and slopes, with redcedar dominating some of the

narrow zone along Lew Creek. Western yew was common and distributed sporadically throughout the area.

a) Carabids

Approximately 3.5 hours were spent hand-collecting carabids along two transects in the reserve. All carabids seen were collected when possible.

From the margin of Trout Lake a transect was walked up the hillside along the southern boundary between 750 and 1000 metres above sea level (MASL), in primarily mesic upland forest. Boulders, fallen logs and loose bark were displaced to locate beetles in hiding, and rotten logs were dissected with a hatchet. A second search for carabids was made along Lew Creek at about 800 MASL, just above its confluence with Trout Lake. Cobble along the creek was overturned and other debris examined for carabids.

Eighty-nine specimens from 14 species were collected. The carabids of these samples are shown in the table. (Nomenclature follows Y. Bousquet and A.

LaRochelle: "Catalogue of the Geadephaga (Coleoptera: Trachypachidae, Rhysodidae, Carabidae include. Cicindelini) of America north of Mexico," *Memoirs Entom. Soc. Canada* 167 (1993): 1-397.)

One *Agonum* sp. specimen was seen on landing at the Trout Lake shoreline in the vicinity of the reserve. This bank is extremely steep, and the beetle escaped capture. This *Agonum* sp. is probably found only along the banks of Trout Lake, and possibly along the lake in the upper Lew watershed. One to three species of *Bembidion* and *Trechus tenuiscapus*, which were not found on this trip to the reserve, are probably found in these lakeside habitats.

Discussion:

1. One species, *Broscodera insignis*, is previously not recorded from southeast B.C. This is the >>> only species of the genus, which is restricted to the Northwest of North America. The species is known only from Alaska, British Columbia, Washington, Oregon and Wyoming. No specimens have been reported of Alberta, Idaho or

>>>

Carabid Species Collected at Lew Creek Ecological Reserve

# of specimens	genus	species	median body size (mm)	wingedness (+) = long winged (-) = brachypterous
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Lew Creek, ca. 800 MASL

(40 specimens from 9 species in about 45 minutes)

3	<i>Scaphinotus</i>	<i>marginatus</i>	14.0	(-)
3	<i>Scaphinotus</i>	<i>augusticollis</i>	20.3	(-)
18	<i>Bembidion</i>	<i>kuprianovi</i>	5.1	(+)
1	<i>Bembidion</i>	<i>iridescens</i>	4.3	(+)
2	<i>Broscodera</i>	<i>insignis</i>	9.2	(+)
1	<i>Trechus</i>	<i>chalybeus</i>	4.3	(-)
10	<i>Nebria</i>	<i>gebleri</i>	10.8	(+)
1	<i>Nebria</i>	<i>gyllenhali</i>	10.3	(+)
1	<i>Bradycellus</i>	<i>nigrinus</i>	5.8	(+)

Mesic upland forest, ca. 750 - 1000 MASL

(49 specimens from 5 species in ca. 2.5 hours)

2	<i>Pterostichus</i>	<i>adstrictus</i>	11.3	(+)
7	<i>Pterostichus</i>	<i>sphodrinus</i>	10.3	(-)
14	<i>Pterostichus</i>	<i>neobruneus</i>	12.9	(-)
18	<i>Pterostichus</i>	<i>herculeus</i>	15.3	(-)
8	<i>Pterostichus</i>	<i>ecarinatus</i>	11.3	(-)

Surveys at Low Creek ER

Montana, which share much of their fauna with southeast British Columbia. See note 5 below.

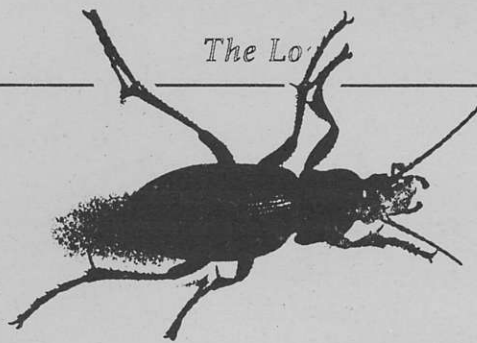
2. A sample including 14 species in just over three hours of collecting is impressive for an interior montane forest site with such a small stream.

3. More than 50 per cent of the Pacific Northwest carabid fauna are species which are wetland specialists. The Low carabid sample reflects the diversity of wetland species in that nearly twice as many species were found along the margin of Low Creek compared to the mesic upland sample. The species of the Low Creek sample are primarily wetland specialists in southeast B.C. Note also that the majority of the Low Creek carabids are winged (+) and probably capable of flight, whereas the forest species are generally large-bodied and flightless (-); this is typical for Northwest forests.

4. *Scaphinotus relictus*, *Zacotus matthewsi* and at least one *Notiophilus* sp. probably occur in the ecological reserve in mesic forest, although none was seen.

5. Much of the forests of the central Selkirk Mountains, including this ecological reserve, has been classified as *interior temperate rain forest*. Among the more interesting elements of the biota of this region are coastal disjuncts — species whose primary distribution is along the Pacific Northwest coast. Primarily coastal carabid species found at the ecological reserve include *Scaphinotus angusticollis*, *Broscodera insignis* and possibly *Bembidion iridescentis*.

6. Some classic interior species in the reserve include *Pterostichus sphodrinus* and *P. ecarinatus* (and probably *Trechus tenuiscapus* and *Scaphinotus relictus*, neither of which were actually collected but are known from the area).



b) Mountain caribou

Signs of caribou included:

- several well-rutted ungulate trails paralleling Trout Lake through old forest within 200 to 300 m. of the lake. These trails cross Low Creek, one just outside the lakeshore zone. The degree of rutting of the trails, and recent use, suggested they are main caribou travel trails
- a less distinct but obvious wildlife trail following up the south ridge of Low Valley, presumably also a caribou trail for travel between the lakeshore and the alpine
- evidence of past winter use:
 - i. one old caribou antler
 - ii. 25 caribou winter pellets grouped as determined by moulding and pellet shape (i.e. raisin-shape, versus the looser composition of spring droppings). Although several deer tracks were noted, it was assumed that most of the mouldy-type pellet groups were from over-wintering caribou, since few if any deer would winter in this habitat type. Several of the pellet groups were in clusters at obvious bedding sites
 - iii. two fresh ungulate day-beds with ground scraped and dropped hair at the 3500 to 4000 ft. (1000 to 1200 m.) level, assumed to be caribou
 - iv. three small saplings rubbed from last summer's or early fall's rubbing of velvet from the antlers of caribou or deer
 - v. trace-low density of falsebox (a low evergreen shrub) throughout the old hemlock forest, consistently cropped. Usage was rated as moderate, suggesting considerable early winter use of this food resource by early wintering caribou.

Concerns

As much of the low-mid elevation forest along the west side of Trout Lake has already been clearcut and further logging is planned, the Low Creek Ecological Reserve could become an island of extinction. Of particular concern would be further logging of old forests to the north or south of the reserve, which are obviously critical winter range for mountain caribou. Logging up to the reserve boundaries will probably cause blowdown within the reserve and likely leave too little winter range for the caribou. This could cause overuse of such key caribou foods as falsebox within the reserve and harm the health and productivity of this and other understory plants that are supposedly being protected. Winter usage of falsebox near the reserve already suggests over-cropping.

Another concern would be the negative impacts on a caribou travel corridor and the visual integrity of the area by possible development of a logging road along the steep, narrow corridor in lower Low Creek.

Recommendations

1. Since the west side of Trout Lake has been designated a Special Resource Management Zone under the West Kootenay-Boundary Land Use Plan, a moratorium should be placed on all proposed clearcut logging until it is determined how the new guidelines will protect the integrity of the ecological reserve as well as the caribou winter range.

2. Further field studies should be carried out on the impacts of any further logging on the integrity of the ecological reserve and usage of the whole west side of Trout Lake and the ecological reserve by mountain caribou.

(This project was funded by the Friends. The Valhalla Society donated volunteer time and co-ordination.)

The Community Ecology of Sea Otters off Northwest Vancouver Island

Sea otters once ranged along the northeast Pacific Rim from Northern Japan to Baja California, with a population estimated as high as 300,000 animals. European exploitation of sea otters, valued for their pelts, began in British Columbia with the arrival of James Cook in 1778. An intensive fur hunt extirpated the sea otter from B.C. waters. Sea otters were protected in 1911; the last known sea otter to inhabit B.C. waters was shot off Kyuquot in 1929.

Between 1969 and 1972, 89 Alaskan sea otters were reintroduced to the Bunsby Islands on the west coast of Vancouver Island. In 1994 the sea otter population extended from Quatsino Sound to Estevan Point. A second group inhabits the Goose Island Group on the central coast

of B.C. Since reintroduction, the sea otter population has grown at approximately 19 per cent a year. In 1994 there were about 1,200 sea otters along the coast of B.C. The species remains on Canada's endangered list because of its relatively small population and limited distribution.

Sea otter predation on herbivorous invertebrates exerts a dramatic effect on the structure of rocky nearshore communities. By preying on herbivorous invertebrates such as sea urchins, sea otters reduce grazing pressure, which in turn increases the abundance of seaweeds such as kelp. Areas with sea otters have an abundance of seaweed but very few sea urchins, whereas areas without sea otters have numerous sea urchins but very little kelp.

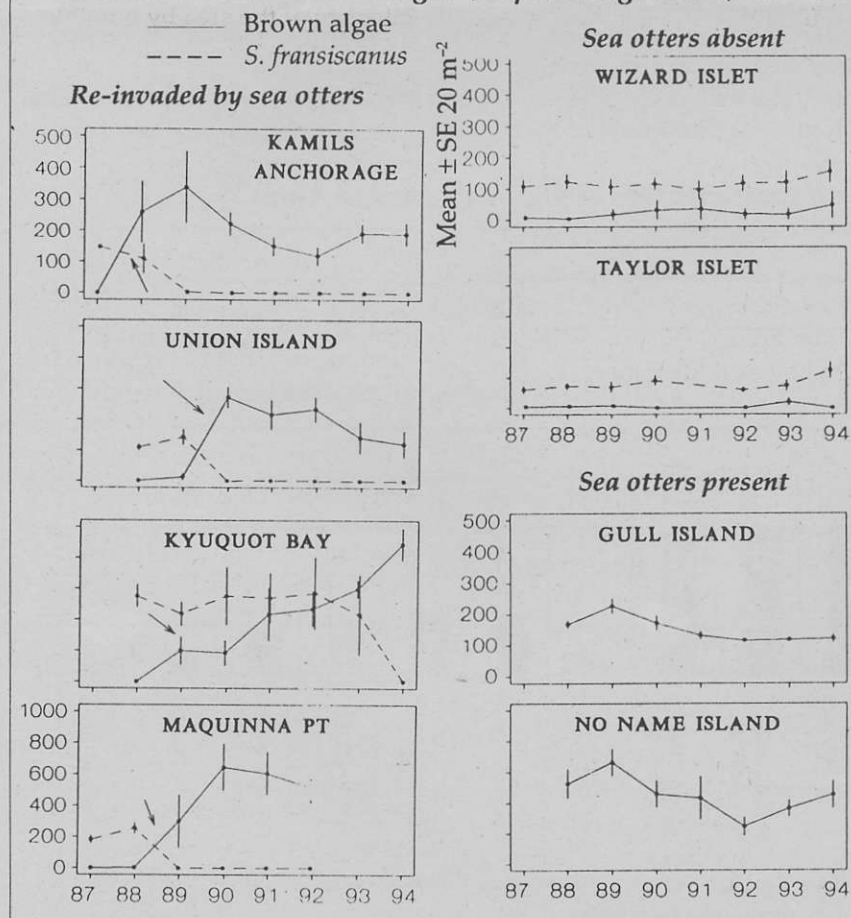
Kelp forests play an important role in coastal ecosystems. They increase water-column complexity and provide critical nearshore habitat for larval and adult fishes. Kelp beds also enhance populations of animals dependent upon kelp-based (detrital) food webs. Kelp forests reduce tidal currents and dampen wave height, which may affect the settlement and dispersal of many organisms.

For the past eight years I have been following changes in subtidal community structure associated with sea otter foraging along the west coast of Vancouver Island. This is the largest continuous study of a kelp bed ecosystem in B.C. and the first detailed account of community-level changes caused by sea otter foraging. It is providing valuable insights into ecological processes in kelp forest ecosystems, which probably once dominated rocky shorelines along the BC Coast.

Much of this research is centred on Checleset Bay, within the boundaries of Ecological Reserve #109. In 1987 and 1988 I established eight permanently marked sites, over a 240 m. stretch of coastline. Four sites are in areas not previously occupied by sea otters, and I monitor changes in community structure associated with the arrival of sea otters. Four additional sites, two in areas already occupied by sea otters, and two in areas without sea otters, are used to document natural changes in community structure. Annual monitoring of the eight sites enables us to follow successional changes in a subtidal community, in the context of natural variation. Such research is important for an understanding of the importance of sea otters in our coastal ecosystems, and it has already provided considerable insight into the mechanisms and rate of community change.

Jane Watson, PhD

Changes in the abundance of red urchins (*Strongylocentrotus franciscanus*) and brown algae (kelps) at eight sites, 1987-94



BC GOVERNMENT NEWS

Some of B.C.'s new parks incorporate ecological reserves

In July, the B.C. Government made good on its promise to create new parks by designating "in law" 106 protected areas as Class A provincial parks. Almost all the areas the NDP government has committed to protecting since 1992 were specified in the 1995 *Park Amendment Act*. Parks already established by orders-in-council were included. The described areas may only be changed by amending the legislation.

Notable omissions are the Kitlope (subject of negotiations with the Haisla people), the East Purcell, Churn Creek and Homathko areas, for which access issues are still under study.

A number of ecological reserves are now provincial parks:

- Robson Bight (Michael Bigg), the world-famous Ecological Reserve #111; the park has been enlarged to 6,608 ha. by the inclusion of the lower Tsitika valley as far as Catherine Creek
- Cleland Island, Ecological Reserve #2, part of the new

5,970-ha. Vargas Island Park

- the former Beresford, Sartine and Anne Vallée (Triangle Island) reserves (#11, 12 and 13), now part of Scott Islands Provincial Park (area 6,215 ha.)
- the 50-hectare reserve #105 at the mouth of the Megin River has been absorbed into the Megin-Talbot addition to Strathcona Provincial Park

The new 10,829-ha. Tahsish-Kwois Provincial Park appears not to include the 70-ha. ecological reserve (#119) that protects the estuary of the river.

And the 2,914-ha Ilgachuz Range Ecological Reserve north of Anahim Lake, has been enclosed by the new 109,063-ha. Itcha Ilgachuz Provincial Park but retains its separate identity.

Bill Munn, a planner with BC Parks in Victoria, explains that the *Ecological Reserve Act* does not stipulate how boundaries are to be established. To protect areas contiguous with ecological reserves the legislators chose to

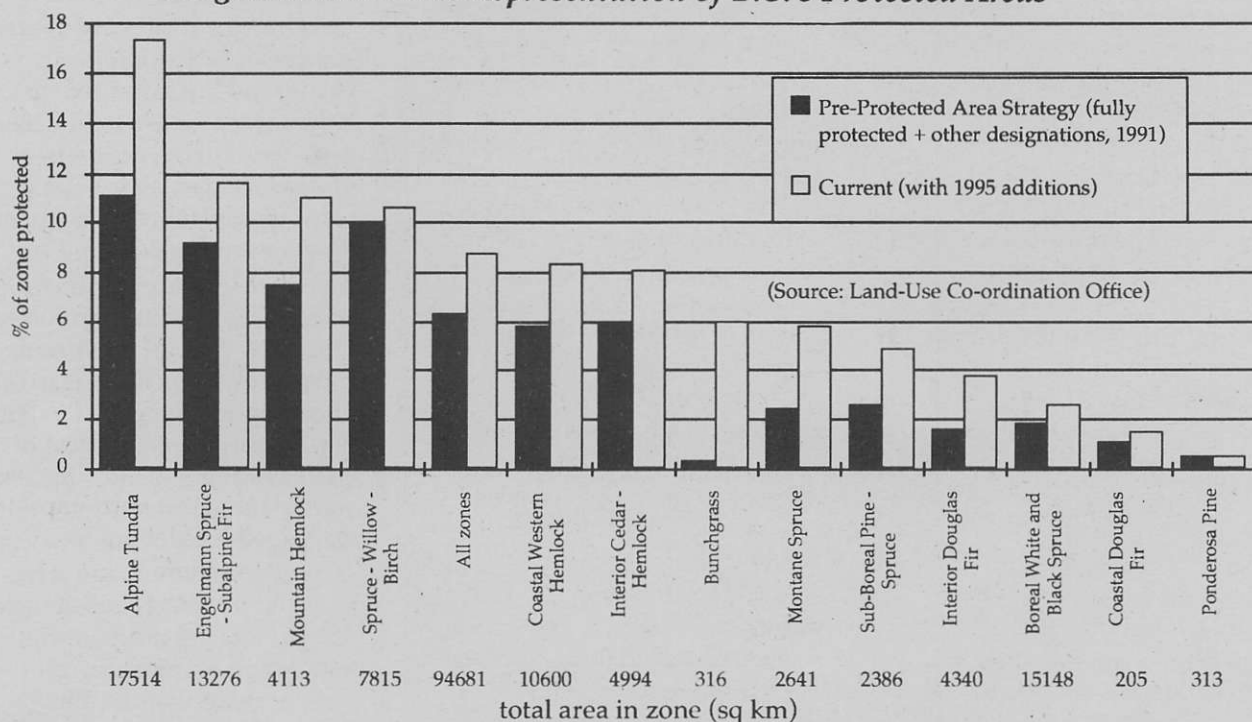
employ the powers of the *Park Act*.

The intention, Munn says, is not to downzone the ecological reserves. Early action is indicated to have the areas designated as nature conservancies by orders-in-council. Under section 6 of the existing *Ecological Reserve Act*, nature conservancies can be designated ecological reserves. The result would strengthen the protective power of the Crown.

The 1995 *Park Amendment Act* also confers superior powers of enforcement. BC Parks has the authority to lay charges for offenses and provide for fines of up to \$1 million and / or imprisonment. The *Ecological Reserve Act*, slated for an overhaul in the spring session of the legislature but bypassed, remains toothless and unenforceable.

Lynne Milnes wrote a letter to then-acting-minister Elizabeth Cull for the Friends, expressing concern that the changes may signal rejection of the educational function of ecological reserve.

Biogeoclimatic Zone Representation of B.C.'s Protected Areas



We Get Letters Re: Field Trips to Ecological Reserves

After BC Parks Strathcona District Manager Ron Lampard wrote to the Friends regarding use to ecological reserves (see "Permits now required to visit ecological reserves in Strathcona District" in the Winter 1994-95 issue of *The Log*), Bristol Foster, then president of the Friends, responded:

"I directed the Ecological Reserves Program for 10 years. In that time we drew up management plans for each reserve and recorded that some reserves, particularly the seabird reserves, were open only to researchers. However the majority of reserves were declared open for educational and casual nonconsumptive public use. This is consistent with the Act, and to rule otherwise would make it even harder to protect such exclusive areas.

"Prohibiting field trips would be neither appropriate nor legal under the Act and present Regulations (which are *ultra vires*).

"While we would never want Ecological Reserves to be indicated on a tourist map, the Friends' field trips, led by a knowledgeable biologist or naturalist, can only help to foster a better understanding of a rather esoteric government program and are therefore of great benefit to the program."

Strathcona District resource officer Rik Simmons responded to the letter in February:

"... since the time of your direct involvement, conditions and volumes of use have changed drastically. In spite of our policy of not promoting them, the existence and location of individual reserves seem to become well known. Many reserves, especially those near population centres, are being heavily used. Part of this increase is a consequence of promotion by groups similar to yours. While well meaning, this kind of activity can lead to unacceptable impacts.

"The increase in visitation to

reserves is a concern for us.... it has never been a policy to prohibit informal use except where it threatens the purpose for which the reserve was established. There is a difference between low intensity casual visits and organized tours of reserves and while both types of use have impacts, we feel organized tours represent the most serious immediate threat.

"Field trips led by a knowledgeable biologist or naturalist can only help to foster a better understanding of a rather esoteric government program"

"We need mechanisms for controlling and monitoring use and minimizing any impacts to the reserve. The Regulations, Section 2, requires that a permit be issued for educational use of a reserve. We do not intend prohibiting groups visits as long as they are compatible with the reserve's purpose but wherever possible we will bring organized tours under a permit system. This will allow us to monitor use levels as well as impose protective measures....

"I am not sure I agree with your comment on the desirability of using the reserves to educate the public about the system's purpose and goals. That seems very close to the argument used to rationalize the capture of killer whales. I believe that the public is ready to accept and understand the need to set aside lands where the only purpose is ecological study and research. I would be very interested in discussing alternative

ways for educating the public about the role and philosophy of the ecological reserve system."

Friends member Mr. J. Barber-Starkey wrote to us in March:

"When I joined your organization I was under the impression that ecological reserves to be where there was to be absolutely no human impact apart from those engaged in non-destructive research projects which had been specifically approved. Now in "The Log" it appears that they are being used as destinations for field trips for the members of a group of citizens. I consider this completely unacceptable and contrary to the objectives of the group which I joined to protect existing reserves from human intrusion, and to provide funds for acquisition of other sites."

The Friends' board discussed the issue at length. Visits do provide management support through the construction and maintenance of fencing, monitoring of signage, surveys of impacts from sheep, goats and other humans, removal of broom and other such activities. And we publicise in our newsletter closures of reserves that protect sensitive seabird colonies.

The board has decided to:

- continue to make field trips to certain ecological reserves, on the grounds that small groups of naturalists visiting for a few hours do not exert lasting impacts
- honour BC Parks' request for permits, in the spirit of co-operation
- continue to press for better monitoring of the real and lasting impacts arising from other uses and the imposition of effective sanctions against such impacts via revamped legislation
- lobby to ensure that amendments to the *Ecological Reserve Act* do not negate the educational function of ecological reserves.

We welcome your views.

NotePost

Membership renewal (Second notice)

If you're a member of the Friends and you haven't already renewed your membership, you'll find an invoice enclosed with this issue. Please take the time to make out a cheque to the Friends and return your dues. You won't receive any more written notices.

Hornby Update

The Thousand Oaks on Hornby Island remain in peril since last report (*The Log*, Winter 1995 insert.) Phases 4 and 5 of the High Salal Ranch housing development are either approved by the BC Highways Ministry or on the way. The current plan encroaches on the Garry oak meadow.

Lynne Milnes recently wrote to then-minister of environment, lands and parks Elizabeth Cull to get the approval suspended. From her letter:

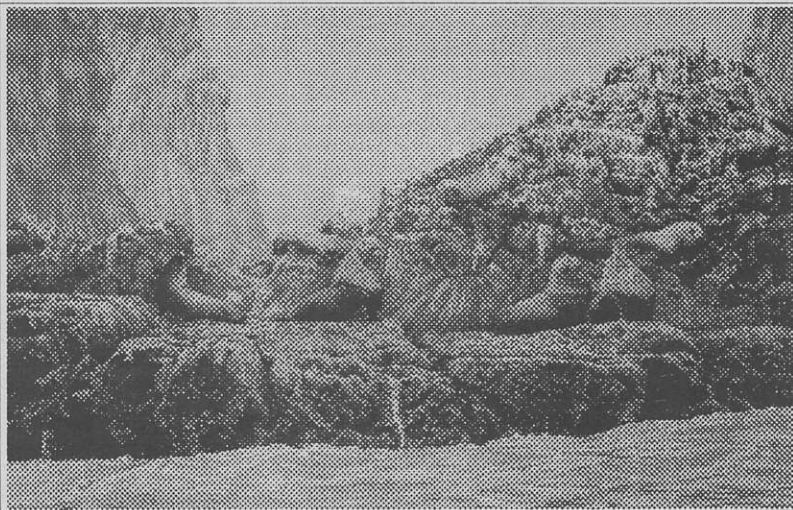
"On December 6, 1993 Mr. Sihota issued a memorandum to "instruct the regional environment officer to prepare detailed recommendations to the approving officer to consider protection of the high conservation values of the Garry oak community when adjudicating the application." For some reason this memo was not followed and the Highways Ministry subdivision officer approved Phase 4 of the subdivision. Now as Phase 5 appears for approval there are non-compliance conditions of the draft covenants within the existing preliminary layout approval.

"Lack of definition of the site boundaries is only one problem. The existing conservation covenants are not adequate. We recommend that the approval process be suspended until your ministry provides detailed recommendations based on an ecological survey and consultation with known experts in the field."

Buy a wildlife serigraph, donate to research

Raymond Ractliffe, proprietor of Thumbprints Art and Design Studio, has provided graphic services to the Friends *pro bono*, "computerizing" the images of *The Log* masthead and the Garry Oak Meadow indicator species for publication.

To help the Friends raise money for research on endangered ecosystems, Raymond is offering his beautiful prints for sale. The prospectus enclosed with this issue shows the five prints that he is selling for \$60 each, unframed. (He still has a few copies of "Summer at Hudson Bay.") The Friends will retain half the proceeds from each sale.



Lazy Afternoon

20" x 14" serigraph print, hand-pulled on rag paper, numbered and signed

Please make cheques payable to Friends of Ecological Reserves; specify desired print(s) by title. Your print(s) will be shipped in a sturdy tube. You can stretch your donation by adding \$5 for shipping.

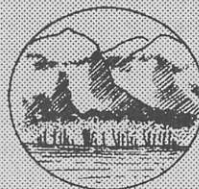
The Log

Friends of Ecological Reserves Newsletter

Published twice a year in Victoria and distributed to members, affiliates, volunteer wardens of ecological reserves and BC Parks staff.

Summer 1995

Editor: Peter Grant



FRIENDS OF ECOLOGICAL RESERVES
BOX 8477
VICTORIA, B.C. V8W 3S1

New threats to Hornby Island's Thousand Oaks

Letters of support urgently needed

At last report (*The Log*, Fall 1993) the Thousand Oaks of Hornby Island, identified as "the largest remaining high-quality example of a Garry oak meadow community in Canada," had a good chance of being protected from the bulldozers. The Islands Trust (the local government agency) and Conservancy Hornby Island, a local conservation group, have been pressing for adoption of covenants to prevent the 150-hectare High Salal housing development, on the southeast side of Hornby, from impinging on the six-hectare ecosystem immediately south of some of the lots. The Nature Conservancy of Canada looked at the issue and decided that it wouldn't intervene with a view to buying the site — nor should it be necessary, given the Ministry of Highways' 1979

Preliminary Layout Approval, in which the subdivision's 37 strata lots were sited north of the grove and adjacent meadows. A covenant prohibited "removal of any vegetation or trees within the designated oak grove area."

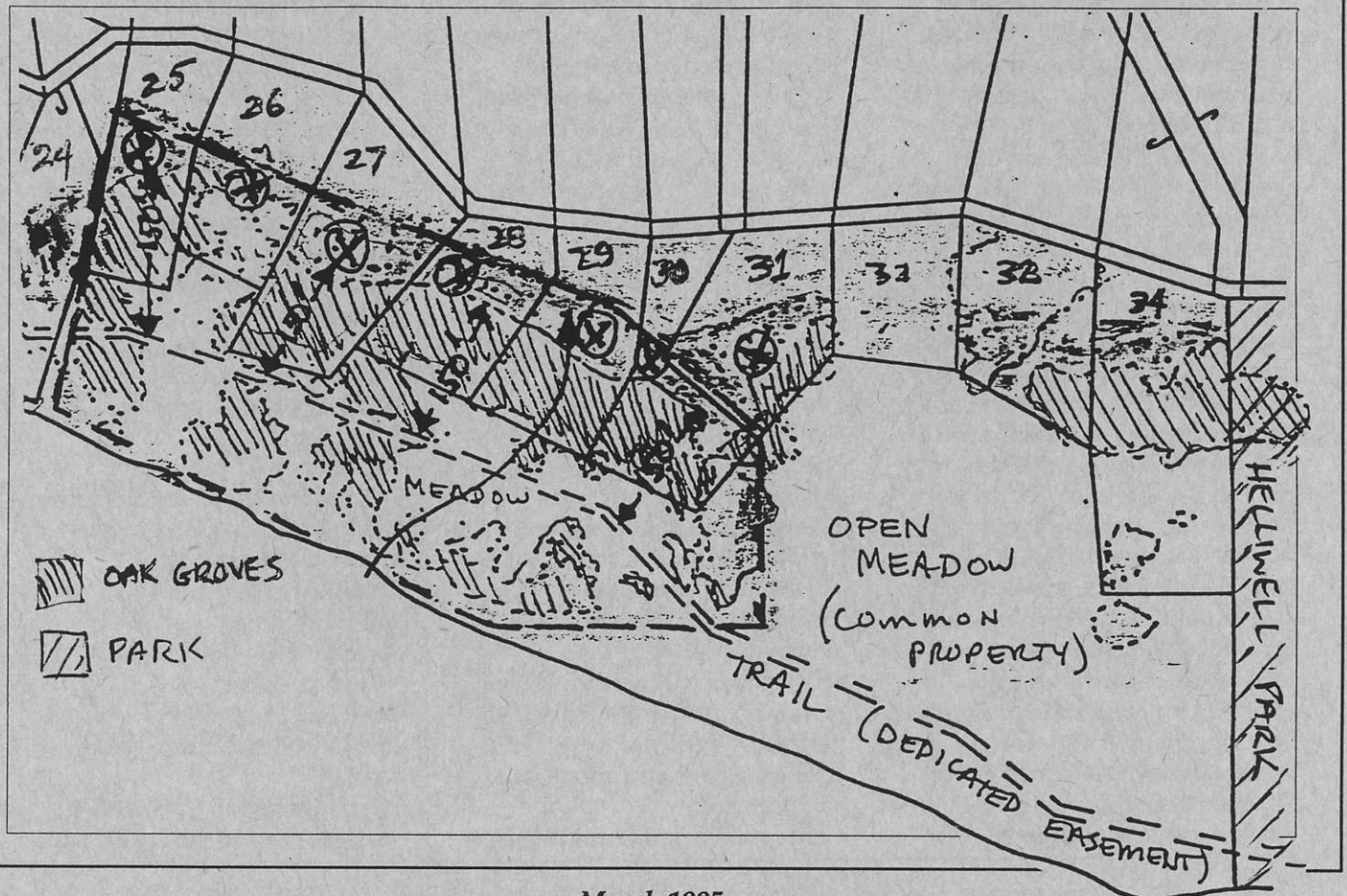
Drafts of a proper covenant to protect the oak grove have been circulating for the past two years, and the Highways Ministry is currently studying one now. As well, local governments now have the power to set aside five per cent of the area of developments for parks. The provision would cover the oak grove, if it's invoked by the Islands Trust. The two Hornby Island trustees are said to

be holding out for this option.

Meanwhile, the developer's plans have been advancing through the approval process with unseemly haste, according to recent correspondence between Conservancy Hornby Island and R.J. Howat, Provincial Approving Officer for the Vancouver Island Region of the Ministry of Transportation and Highways.

Last fall the group grew concerned that the project was about to move ahead. One of two remaining phases, comprising lots 24 to 30, is the area adjacent to the oak grove and thus is of critical interest to conservationists. The other phase, lots 31 to 37, abutting the northwest corner of Helliwell Provincial Park, have the potential of swallowing an isolated oak grove and impinging on open meadow with sweeping views >>

Detail of 1992 sketch map of High Salal, showing the developer's planned intrusion of lots 30 and 34 into the oak grove



across the water to the south. Conservancy Hornby Island queried the Ministry of Highways whether the developer had applied for provincial approval to proceed with the two last phases of the five-phase subdivision.

On December 7 Howat wrote to inform the group that the ministry had received no applications for approval of either phase of the development. A ministry official in Courtenay confirmed that no approvals had been issued.

In fact, a search of documents in the Islands Trust Victoria office revealed that lots 31 to 37 had already been approved! The elected trustees of the Islands Trust were given no opportunity to review the application before its approval, contrary to well-established protocol. (According to former Hornby trustee Carol Martin, Highways officials claimed they wrote two letters and telephoned and approved the application after receiving no reply.)

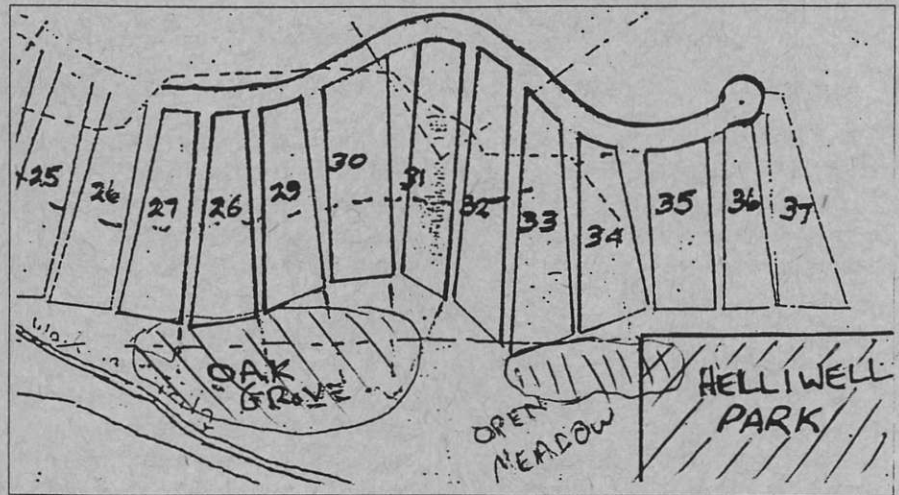
Conservancy Hornby Island complained to Mr. Howat about his ministry's "misinformation and non-communication" in a letter dated December 25:

"We were shocked and dismayed to find that Lot 34 in particular had been approved without the Islands Trustees, and through them the community of Hornby Island, being consulted. Lot 34 intrudes into the continuous high meadow that runs through Helliwell Park and the Common Land of High Salal, and development of that lot will have a significant impact on the character of the Park."

Since receiving provincial approval for lots 31 to 37, the developer has since applied to the local authority, the Islands Trust, for a development variance permit.

It appears, moreover, that approval for lots 24 to 30 may soon be forthcoming. From Conservancy Hornby Island's letter of December 25:

"This grove is considered to be



Detail of map accompanying the 1979 Preliminary Layout Approval showing boundaries of High Salal lots. Note the southern boundaries of lots 30 and 34 relative to the northwest corner of Helliwell Park and compare with the 1992 map

of national significance and, according to the B.C. Conservation Data Centre, is the best example of the most rare and endangered plant community in British Columbia. The Data Centre has strongly recommended to you that the grove be protected and that the protected area consist of the core oak grove and a surrounding buffer sufficient to assure the continued health and existence of this plant community."

Before this phase of the development is allowed to proceed, Conservancy Hornby Island wants these safeguards in place:

- covenants that are specific, enforceable and with sufficient penalties to be a deterrent, to protect the oak grove
- a vegetation management plan
- protection for oak root systems and other plant species — for example, from service installations or lawns
- a mechanism for ensuring that drainage from the subdivision does not influence the grove
- allowance for an appropriate buffer zone
- appropriate park designation

The group also asked that "the Islands Trust and its constituents be given full opportunity to participate in the planning process before any irreversible decisions are made."

The developer is reportedly demanding that, prior to provincial approval of its subdivision application, the Trust grant some sort of preliminary variance permit for a "zero setback" for lots 24 to 30, which would allow houses to be sited right on their southern property lines, on the very edge of the oak grove. Failing this, the developer is apparently prepared to build in the adjacent meadow.

Letters of support are urgently needed to support the islanders' struggle to protect the Thousand Oaks. Please write to:

R.J. Howat
Provincial Approving Officer
Vancouver Island Region
Ministry of Highways
6475 Metral Drive
Nanaimo, B.C. V9T 2L9

And send copies to the Hornby Island Trustees, George Bouvier and Ron Emerson, at:
Islands Trust
1627 Fort Street
Victoria, B.C. V8R 1H8

And to:
Tony Law, Secretary
Conservancy Hornby Island
Box 55
Hornby Island, B.C. V0R 1Z0

Please copy to the Friends, too.