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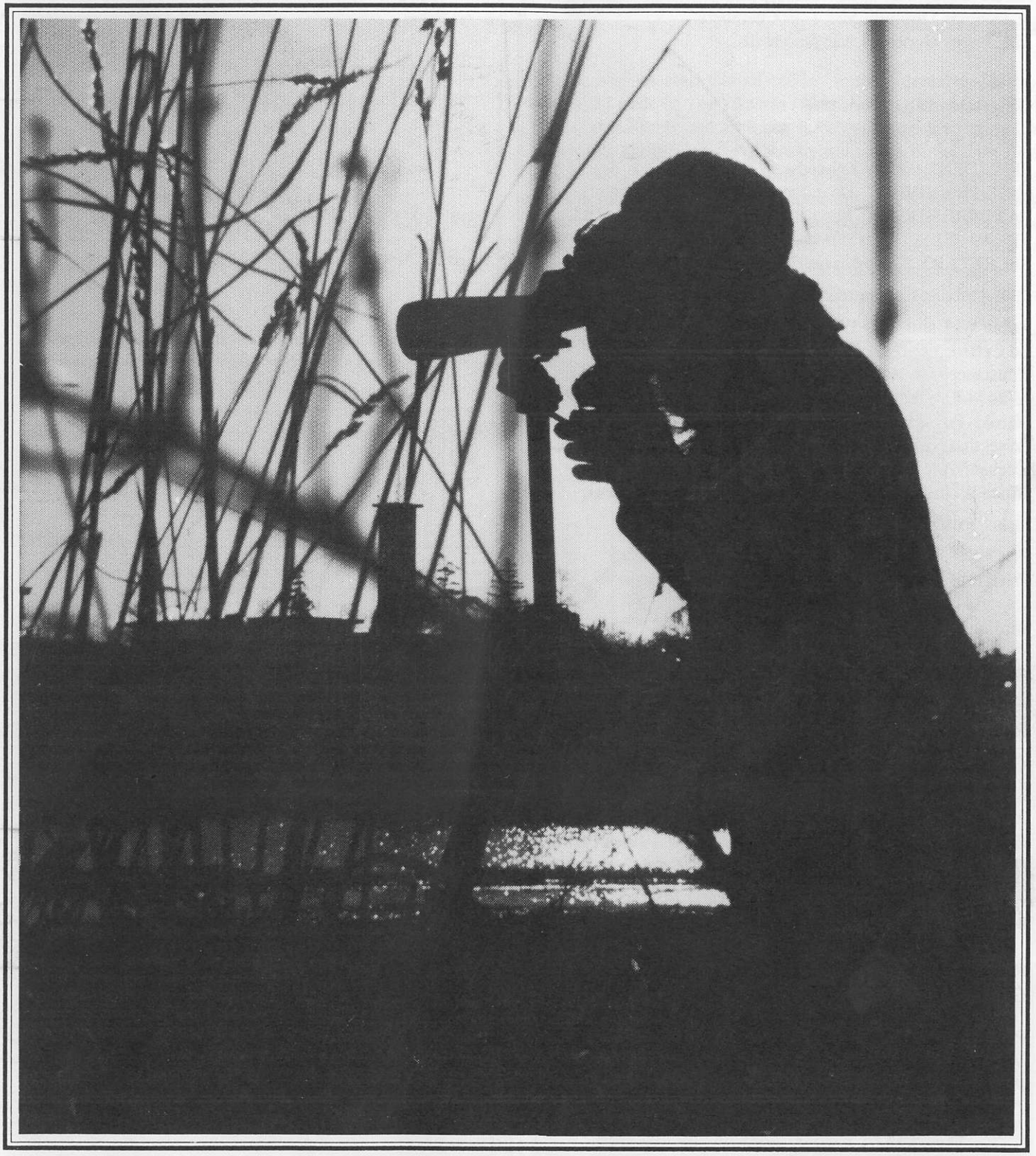

The Victoria NATURALIST

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Letters

Did anyone happen upon the "B.C. Wildlife Federation 1988 Fall Conservation Lottery" announcement on page 4 of the September 1988 *B.C. Naturalist*? And were you as taken aback as I was at the second prize: "Guided Goat and Black Bear Hunt"? I don't know what their affiliations are, or whether a protest, individually or as a Society, would be in order.

Rosemary Partridge

Readers of "A New Classification" in the November–December 1987 issue of *The Victoria Naturalist* may be interested to know that Sibley and Ahlquist have published their complete classification of birds by DNA hybridization in the July 1988 issue of *Auk*. *Scientific American* readers may have noticed an article in November 1987 demonstrating by DNA hybridization and other methods that the giant panda is in fact a bear and not a raccoon after all. Youngsters all over the world will be delighted to hear this. Who ever heard of a raccoon hug?

Ian Gibson

Wildlife Garden — Update

By Tracey Hooper

The first meeting of the Wildlife Garden committee (see *The Victoria Naturalist*, September/October 1988) on November 10 was an enthusiastic brain–storming session regarding the design of our demonstration garden. The garden will show city dwellers how to attract wildlife to their yards by providing three essential elements — food, water, and shelter. For example, a pond with running water will attract birds; brush piles and nest boxes will provide them with roosting and nesting places. Certain flowers can be planted to attract butterflies and other insects, while rock piles can provide homes for snakes and small mammals (snakes help control slugs in the garden). We intend to show that wildlife habitat can be created in a number of ways that can be as simple or as elaborate as the landowner wishes.

A proposal for our wildlife demonstration garden is being prepared and will be presented to the University of Victoria and/or the Swan Lake Nature Centre. When a location for our garden has been found, a request for funding will be made to the Public Conservation Assistance Fund.

The Wildlife Garden committee can always use enthusiastic volunteers. If you are interested, give me a call at 479–7216 (5:30–7 pm) or send a note to 4291 Burbank Cres., Victoria V8Z 6T4.

THE FOLLOWING PUBLICATIONS MAY BE ORDERED THROUGH VNHS:

The Naturalist's Guide to the Victoria Region

(a VNHS publication)
Members' price $10.50
Non-members $11.95

National Geographic Society Field Guide to the Birds of North America

$23.00

Call Lyndis Davis, 477-9952
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VNHS Spring Field Trip - The Grand Canyon and Much More

By David F. Fraser

During last spring's VNHS trip to Malheur, there was a lot of lively discussion about where the next year's spring trip should head. The Grand Canyon, it was agreed, was a great location for a VNHS trip. The Society has asked Swiftsure Tours to help organize the details of the trip.

The trip has been broken down into three legs. The Canyons (Grand, Zion, Bryce) is a week-long segment starting in Phoenix. The pre-trip extension get us to Phoenix, and the post-trip takes us home (or if you are short of time you can fly). Here's a peek at what we'll be looking for.

Pre-trip Extension, May 11 - 17

Leaving Victoria, we'll head to Seattle to pick up our van and then head over the Cascades to bird around Moses Lake in Washington State, looking for White Pelicans, Black-crowned Night-Herons, and perhaps a Burrowing Owl. From there we head south and take a look at the Blue Mountains of Oregon, a good area for White-headed Woodpeckers and Rocky Mountain Elk. A visit to the Snake River Canyon, home of many species of raptors, and a drive through the lava beds on our way to Salt Lake City should give us some Black-tailed Jackrabbits (and maybe Barb Deboer can see one of the Coyotes she managed to miss on last year's trip). As we head south, the fauna changes again and desert species such as antelope, ground-squirrels and phainopeplas should become easy to find. This section takes seven days. Like during the rest of the trip, we'll be staying in comfortable motels. Many of our lunches (included in the trip price) will be in the field – picnics.

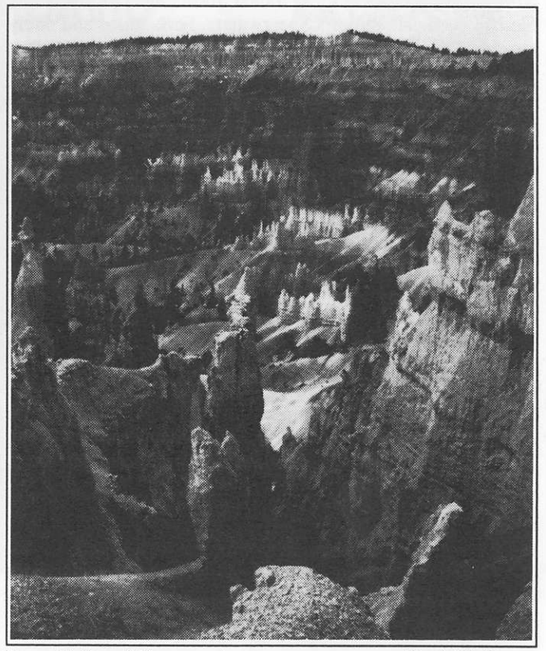
Canyonlands

We'll pick up those who have opted to fly to Phoenix, and head off to the Grand Canyon, where we will spend two nights at the south rim. Peregrin Falcons, Rock Squirrels and the spectacular geology of the Grand Canyon will be among the things of interest here. We then move up to Springdale, Utah, for three nights, and this town will serve as our base while we explore Bryce National Monument with its bizarre landforms, Zion National Monument with its massive coloured rocks and Virginia's Warblers, and Arches National Monument with its stone arches, Canyon Wrens and fence lizards. From here we spend a day heading south, stopping at Pipe Springs National Monument and the Indian cliff dwellings of Montezuma Castle National Monument. Then we'll drop off those who head home by air from Phoenix after having spent 8 interesting days.

Post-trip Extension

Heading north towards home will be different again, as we are going to drive through the Sonoran Deserts of Arizona toward the Mojave Deserts of Southern California. Saguaro gives way to Joshua Trees and their attendant Scott's Orioles. As we head north we will look for Yellow-billed Magpies and Black-shouldered Kites. A stop in Yosemite National Park's Mariposa Sequoia Grove should give us a chance to look at yet another habitat type. As we head north through the Siskiyou Mountains into Oregon, spring should be well underway and redbud might be into bloom. A night at Ocean Shores on the Pacific in Washington will give us a chance to catch some late migrating shorebirds and take a look at dune vegetation. Then it's home to Victoria.

It should be a great trip. A more detailed itinerary and bookings can be obtained by phoning 388-4227. Note that we will be travelling by van so space is limited. The society has sponsored this trip, so try to book before January 20 to take advantage of our discount.



Bryce National Monument *David F. Fraser*

Bird–Finding on Vancouver Island

Part 3. Pacific Rim National Park (Long Beach)

By Keith Taylor

Many species of birds found on the east coast of Vancouver Island are lacking on its west coast. Part 1 of "Bird–Finding on Vancouver Island" (Vol. 44.6) dealt with Jordan River, the most southeasterly sector of the west coast of Vancouver Island, where "east" meets "west". In that article I discussed the species that may be common to the east coast of the island but are rare or casual on the west coast. The same, of course, applies here. The interior of the west coast (logging–road areas) is especially low in numbers of species and in the winter months virtually sterile.

There are no species that are restricted to the west coast of Vancouver Island. The traveller need not leave the southeast coastal lowlands to see all of the bird species that inhabit this island; the exceptions are pelagics and alpine species (White–tailed Ptarmigan, Grey Jay, Rosy Finch and Three–toed Woodpecker).

In the fall months, usually Labour Day weekend, Swiftsure Tours has organized boat trips off the west coast to look for pelagics (telephone 388–4227). The species that may be encountered seasonally include: Black–footed Albatross, Northern Fulmar, Sooty and Pink–footed Shearwaters, occasionally Flesh–footed and Buller's Shearwaters, Fork–tailed and rarely Leach's Storm–Petrels, Cassin's Auklet, Tufted Puffin, Red and Red–necked Phalaropes and the three Jaeger species (the Long–tailed less often). Small numbers of South Polar Skua are encountered, with variable numbers of Black–legged Kittiwake, Sabine's Gulls and occasionally Arctic Terns. Other much rarer species have been seen such as Black–vented and Short–tailed Shearwaters and Thick–billed Murre.

A few species are found more readily here in summer months when most travellers visit this area. Fox Sparrows should be seen along McLean Point Road and Steller's Jays throughout the park. Rough–winged Swallows frequent the banks at Florencia Bay lookout. Hermit Thrushes may be encountered. Often Black–legged Kittiwakes can be seen on the sand beaches, especially after strong onshore winds. Western and Herring Gulls are uncommon residents. Caspian Terns are often seen in numbers (erratic) on the beaches.

Tufted Puffins, Sooty Shearwaters and Red–throated and Pacific Loons may be seen from shore. However, to be sure of seeing Tufted Puffin, a pelagic trip is necessary. Although this bird might be encountered on one of the boat trips available to see whales and seal–lions, these boats do not go far enough out to see pelagics. Ancient Murrelets may also be seen (rare regular summer visitor).

Two shorebirds seen more readily in transit at Long Beach include Whimbrel (large flocks on beaches in May) and Wandering Tattler on the surf–washed rocks. The Snowy Plover is exceptionally rare (four records) but the lucky birder may chance upon one on the sandy beaches (April to June).

The birding coverage of this area is slight (with one active resident, Adrian Dorst). Many visitors bird here before and after pelagic trips. Park naturalists have added to the growing checklist of 278 species, of which 54 are breeding residents. Many very rare species have been discovered despite the scant coverage, among them Brambling, McKay's Bunting, Scissor–tailed Flycatcher, Dickcissel, Blue–gray Gnatcatcher, Brown Thrasher and Vancouver Island's only records of Clay–coloured Sparrows (2) and Ash–throated Flycatchers (2).

How to Get to Pacific Rim

Pacific Rim National Park, along with Jordan River and Port Renfrew, are the only stretches of the west coast which can be reached on paved road. Pacific Rim National Park is reached by driving 75 km north from Victoria on Highway 1 and taking the Port Alberni (Tofino) cutoff just before Parksville. After driving 5.9 km turn left on Highway 4 north.

Several parks will be passed along the route. Little Qualicum Falls (with camping facilities) is reached after driving an additional 16.3 km. Beauford P. Park is on the east end of Cameron Lake, an additional 6.7 km. After another 3.4 km you will have reached Cathedral Grove. Be sure to stop and see the old–growth forest; birding, however, is poor. After another 8.6 km you will pass the entrance to Mt. Arrowsmith Ski Area. At the summit, White–tailed Ptarmigan and Grey Jays are to be found (more in an upcoming issue).

At Port Alberni (125 km from Victoria) turn right at the lights for Highway 4 west (Tofino). It is an additional 91 km to the junction of Highway 4 west and the beginning of Pacific Rim National Park (a total of 216 km from Victoria). Here you may turn left toward Ucluelet (8 km) or right to Long Beach and Tofino (34 km).

Along the drive from Port Alberni you will pass Taylor Arm Park (without camping) and Sproat Lake Park (with camping). Stop to see the small falls and rapids at Kennedy River, which runs along Highway 4; check here for American Dippers. Overnight facilities, grocery stores, restaurants and gas stations are to be found at Parksville, Port Alberni, Tofino, and Ucluelet. There is camping at Long Beach Campground, but spots are taken quickly in summer months. Wickaninnish Inn is an expensive but luxurious alternative. Be sure to bring warm clothes, as summer fog and winds can make for cool days and cooler nights.

Pacific Rim National Park Trails

The following trails are well marked within park boundaries. The species listed are those most likely to be encountered; these are not checklists. (A full checklist of the birds of the west coast, with bar–graphs, will be introduced in an upcoming issue of *The Victoria Naturalist*.) Note: The following information is taken directly from *Birds of Pacific Rim National Park*. For more complete information refer to pages 151–174 of that publication.

McLean Point Road (78 species)

Winter	Summer	All Year
Common Loon	Band–tailed Pigeon	Winter Wren
Red–necked Grebe	Rufous Hummingbird	Golden–crowned Kinglet
Western Grebe	Northern Flicker	Song Sparrow
Greater Scaup	Western Flycatcher	Dark–eyed Junco
Bufflehead	Chestnut–backed Chickadee	Varied Thrush
Surf Scoter	American Robin	
Glaucous–winged Gull	Swainson's Thrush	**Migration**
	Orange–crowed Warbler	Whimbrel
	Common Yellowthroat	Yellow–rumped Warbler
	Fox Sparrow	

Grice Bay Trail (57 species)

Winter	Summer	All Year
Mallard	Band–tailed Pigeon	Chestnut–backed Chickadee
Red Crossbill	Rufous Hummingbird	Winter Wren
Sanderling	Western Flycatcher	Golden–crowned Kinglet
Trumpeter Swan	Steller's Jay	American Robin
	Northwestern Crow	Song Sparrow
	Swainson's Thrush	
	Townsend's Warbler	
	Orange–crowned Warbler	

Rain Forest Trail (16 species)

Summer	All Year	Special Finds
Steller's Jay	Winter Wren	Pileated Woodpecker
Western Flycatcher	Golden–crowned Kinglet	Brown Creeper
Red Crossbill		
Swainson's Thrush		

Florencia Bay Lookout (56 species)

Fall/Winter	Special Finds
Common Loon	Red–throated Loon
Pacific Loon	Sooty Shearwater
Western Grebe	Osprey
Harlequin Duck	Black Oystercatcher
Surf Scoter	Caspian Tern
Glaucous–winged Gull	Ancient Murrelet
Heermann's Gull	Rhinoceros Auklet
Black–legged Kittiwake	Tufted Puffin
Pigeon Guillemot	Whimbrel
Marbled Murrelet	
Belted Kingfisher	

Goldmine Trail (39 species)

Summer	All Year	Special Finds
Band–tailed Pigeon	Steller's Jay	Blue Grouse
Rufous Hummingbird	Winter Wren	Vaux's Swift
Northern Flicker	American Robin	Willow Flycatcher
Swainson's Thrush	Song Sparrow	Olive-sided Flycatcher
Orange-crowned Warbler		MacGillivray's Warbler
White-crowned Sparrow		
Wilson's Warbler		

Swan Lake (46 species)

Summer	Special Finds
Mallard	Pied–billed Grebe
Wood Duck	Trumpeter Swan
Common Nighthawk	Blue–winged Teal
Rufous Hummingbird	Ring–necked Duck
Western Flycatcher	Hooded Merganser
Olive–sided Flycatcher	
Tree Swallow	
Rough–winged Swallow	
American Robin	
Swainson's Thrush	
Cedar Waxwing	
Orange–crowned Warbler	
Song Sparrow	

Willowbrae Trail (30 species)

Summer	All Year	Special Finds
Western Flycatcher	Chestnut–backed Chickadee	Brown Creeper
Steller's Jay	Golden–crowned Kinglet	Hutton's Vireo
Northwestern Crow		
Winter Wren		
Swainson's Thrush		
Townsend's Warbler		

Ichthyological Notes

By Graham E. Gillespie

The Kelp Greenling

The kelp greenling is one of the more common of the coastal bottom fish of British Columbia. A prized sport fish, it is often caught by hook and line in inshore waters and off piers, and speared by divers. Besides the name kelp greenling, it has also been referred to as chirus, rocktrout, kelptrout, bodieron, boregat, greenling seatrout, speckled seatrout, bluefish and tommy cod. It is found from southern California to southeastern Alaska and west through the Aleutian Islands.

Greenling in general are medium-sized, moderately elongate fishes. Their dorsal fin is notched between the spiny and soft-rayed portions and each portion is nearly equal in length. The fin contains 21 or 22 spines and 24 soft rays and the anal fin has one small spine and 23 to 24 soft rays. The tail, or caudal fin, is nearly square in profile. The head is conical in shape, with a moderate eye, and a small mouth which is directed forward and slightly downward. The pectoral fin is broad and rounded and the pelvic fins are thoracic in position, i.e. they attach to the body at about the same position as the pectoral fins. There are five pairs of lateral line canals on the side of the fish. These canals are associated with sensory perception (the underwater equivalent of hearing), and most types of fish have one pair. There are two pairs of thin, flexible fringes of skin on the head, called cirri. The larger pair is situated over the eyes and the smaller pair halfway between the eyes and the dorsal fin.

The kelp greenling was first given scientific names in 1810 by the Russian explorer Peyter Pallas, who called it *Labrax decagrammus*. The generic name is from the Greek root labrakos meaning sea-wolf, and possibly relates to their readiness in taking bait. The New Latin word *labros*, meaning greedy, is based on the same root. The specific name is from the Greek roots *deca* (meaning ten) and *grammos* (meaning "line"). This is in reference to the five pairs of lateral line canals which run along the side the of fish. Kelp Greenling were later placed in the genus Hexagrammos of George Steller (another Russian explorer and naturalist), which means "six-lined" and may refer to the three long pairs of lateral line canals (the other two being shorter and less prominent) in the fishes which formed the genus. They have also appeared in the literature as *Chirus guttatus* (Girard 1854), *Grystes lineatus* (Ayres 1854), *Chiropsis constellatus* (Girard 1858), and *Chirus maculo-seriatus* (Lockington 1880).

The kelp greenling is unique among British Columbia fishes in that it is the only species in which the male and female are differently coloured throughout the year. Many fishes develop differing colour patterns between sexes in breeding season and some have differing growth rates and different maximum sizes for each sex, but the two sexes of the kelp greenling are always strikingly different.

The male kelp greenling is brown or olive in colour, fading to tan below, with numerous blue spots on the head and front of the body. The blue spots are each surrounded by a ring of tiny reddish spots, and the fins are of the same hue as the body. The colours of the male intensify in the breeding season, with the head taking on a general blue tone. The female is speckled over the entire body with small reddish-brown, orange, or golden yellow spots over a tan, grey or light blue body colour. The fins are red to orange, with a light spot bordered by darker pigment at the base of the soft-rayed dorsal fin.

This explains in part the number of separate names given to the species, which was first recorded from British Columbia waters by J.K. Lord in 1866 as both *Chirus decagrammus* and *Chirus constellaturs*, one name for each sex. To give Mr. Lord his credit, no one had yet ascertained that the two species were actually differing sexes of the same fish; his report was as accurate as was possible for his time.

The kelp greenling is common along rocky shores and around kelp beds. There is a reported sexual segregation by depth, with the males generally found deeper than the females, within the same area. The males are highly territorial throughout the year, defending most vigorously against other male kelp greenling. They spawn in October and November, with the females moving to the deeper water territories of the males to mate. The females lay their mauve or pale blue eggs in masses, which are then fertilised by the male. The males are polygynous, which means that a single male will attempt to mate with more than one female in each season. The males then guard the egg masses against predation by snails, crabs, and smaller fish, and the females return to shallower water.

Kelp greenling are mostly active during the day, remaining inactive at night. The most dominant prey items found in a Puget Sound study were sea cucumbers, crabs, shrimp, chitons and snails. Other recorded food items are marine worms and small fish. Because of its omnivorous diet and its dependence upon prey which is relatively immobile and readily available throughout the year, the kelp greenling does not migrate to deeper water in the winter, and the males defend the same territories year-round.

The differential coloration of the two sexes may relate to the territoriality of the males, in that the males wish only to chase away other males in the breeding season, and try to attract females.Being able to recognise the sex of an approaching fish quickly saves the energy wasted in trying to coerce another greenling into the territory to breed if it is a male, and preserves the chance to breed with a female. This may be the basis of sexual dimorphism in all territorial species, but it does not explain the need to maintain the difference year-round.

Moulton (1977) hypothesized that the differential coloration of male and female kelp greenling related to the diurnal activity pattern (i.e. they are mainly active in daylight hours) and the separation of the sexes by depth. He argued that the risk of predation was higher for shallower-living females, and that they developed protective coloration to blend in with the algae which grows over much of their habitat. The males did not develop this protective coloration because they live deeper in the water, where a lack of light and the reduced chance of encountering surface-living predators such as seals, otters and birds did not require any special adaptive coloration. The difference in the habitat at the greater depth (mainly a reduction in algae growth) may mean that the same protection coloration would be ineffective in hiding the males from their primary underwater predator, the lingcod.

While the kelp greenling is rarely caught in commercial quantities, it remains a favorite of sport fishermen, and is among the most common members of the nearshore fish community.

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Saanichton Spit Birding Trip

By Mike Edgell

Nineteen people, including eight who had travelled down from Duncan, arrived at the KOA campground on the overcast morning of October 30 for some birding at Saanichton Spit and the north end of Island View Beach. While the group assembled, so did a large, noisy and mobile flock of Robins and Starlings, which prompted half–hearted and quickly–ridiculed suggestions of count practice for the upcoming CBC!

The more serious business started with a distant view of a young Red–tailed Hawk perched on a beach log and masquerading as a Cormorant with its wings held out to dry. The leader's ability to pull birds out of thin air was quickly established when, in response to his complaint about the lack of Green–winged Teal, a group of five immediately spiralled down onto the lagoon. Other species that obligingly materialized throughout the day in response to the same comment were Hooded Merganser, Peregrine Falcon, Short–eared Owl, Western Meadowlark, and Savannah Sparrow.

Off Island View Beach were the usual rafts of Loons, Grebes, Cormorants, Oldsquaw and Scoters, together with Lesser Scaup, early Bufflehead and a lone and rather misplaced Ring–necked Duck. Of great interest along the beach itself were close–up comparisons of Ring–billed, California, Mew and Thayer's gulls and an active group of 12 Sanderlings. The marshy scrub and fields south of the pumping station yielded highlights that included two hunting Short–eared Owls and a Marsh Wren that was eventually squeaked out of its furtive rummaging in the reeds.

A wet lunch was enlivened by large numbers of Shovellers and a single Merlin passing overhead, and accompanied by the clamouring of Oldsquaws. Those members of the group that continued after lunch had a challenging time navigating the wet areas of Saanichton Spit to flush a distant group of ducks that proved to be Gadwall. They were also successful in imitating 12 beach logs and thus causing no concern to three shore–feeding Dunlin that busily scurried past only six feet away. Saanichton Bay provided the opportunity to compare all three species of Cormorant, along with Common and Arctic Loons.

A quick stop, for the benefit of the Duncan members, at Martindale L reservoir added Canvasback, but the reported Rusty Blackbird unfortunately could not be picked out of the large flock of Brewer's and Red–wings.

Sustaining Membership

Please note that the fee for Sustaining Membership is still $30, not $20 as shown in error on our new membership application cards.
A receipt for income-tax deduction cannot be issued for a $20 payment.

The Habitat Conservation Fund

By Christine Rushforth

As a new member of the Victoria Natural History Society, I would like to make a contribution to the magazine on what I think is a very important subject, the government's Habitat Conservation Fund.

More and more people today are keenly aware that we have a responsibility to protect and conserve our living heritage in British Columbia. Conservation of habitat is essential to the survival of the unique and diverse fish and wildlife populations that characterize our province.

The Habitat Conservation Fund started as an innovative concept in B.C. in 1981. Through this fund, money is raised and allocated to habitat acquisition, restoration and enhancement projects. While most of the Fund's money comes from a surcharge on various fishing, hunting, trapping and guiding licenses, an appreciable amount comes from tax deductible donations and bequests. Also, proceeds from the sale of reproductions of the artwork of Jack Grundle are applied directly to the Fund.

Since the first project on the Cowichan River in 1981, up to and including 1987/88, the Fund has financed 1,754 fisheries and 226 wildlife enhancement projects. It has also been involved in the acquisition of more than 1,200 hectares of habitat.

This year (1988/89), $2.09 million from the Fund has been allotted to 109 new projects to enhance fish and wildlife. These projects include stream clean-ups, fishways, improvements of spawning and rearing areas for trout and kokanee, and development of special brood stocks of trout. Also, moose, deer, elk, sheep and a variety of small mammals and birds will benefit significantly from the rejuvenation and renewal of their habitat.

Many of the conservation methods which are used are tried and true, but, through the Fund, new techniques are also being tried. For example, selected trees in suitable second-growth forest in the Kootenay will be top-killed, making it easier for Pileated Woodpeckers to excavate nesting cavities. This will also benefit, in the long term, other species such as kestrels and owls which require nesting cavities but do not excavate themselves. As well, saskatoon berry bushes will be re-introduced in the B.C interior to provide high-quality forage for mule deer and food for birds.

Winter kill is a term that has become familiar to many people in B.C. Fish may die from oxygen deprivation in some interior lakes, and this problem can be alleviated by adding oxygen to problem lakes. A revolutionary new approach is being tried in Kilpoola Lake near Osoyoos to solve this problem using solar power to run an aeration system. This will prevent winter kill of the exceptional rainbow and brook trout stocks in the lake.

Here on Vancouver Island many habitat conservation projects are underway. For example, streams all over Vancouver Island are in the process of being cleared to facilitate fish spawning. Beaver and Elk Lakes are currently undergoing an enhancement program. The Fund is also being used for a long-term project to protect the Vancouver Island marmot, currently on the endangered-species list. This involves recording genetic variability among the colonies and noting their distribution. This project will provide valuable information for decisions regarding future management to ensure population increase.

These are just a few examples of the many projects that are currently underway in our province. Since the Habitat Conservation Fund was established, many hundreds of proposals have come before the volunteer Public Advisory Board to be reviewed, evaluated and recommended to the Minister of the Environment. These projects have produced new and improved habitats in our province which not only benefit our unique fish and wildlife but also bring enjoyment to British Columbians who appreciate nature.

River Otters

By Wallace G. MacGregor

One of the joys of living in Victoria is the opportunity to see playful otters along the shoreline. Several times this fall the Tuesday group have seen a family of otters at Oak Bay at the foot of Bowker Avenue at Cattle Point.

The otters seen around Victoria, both those on land and in the sea, are the Canadian River Otter (*Lutra canadensis*), not the rarer Sea Otter (*Enhydra lutris*), which is only found in British Columbia in the sea off the northwestern part of Vancouver Island south to Nootka Island near Gold River.

The River Otter is smaller that the Sea Otter but is still a good sized animal. Adult males may be up to four feet in total length and weigh up to 30 pounds. These otters are frequently seen on rocky shorelines and sandy beaches and often come up on docks or piers where they sometimes steal a fish while a fisherman is cleaning his catch. They can be unwelcome visitors if they decide to leave their droppings as sign posts on a boat or in a boathouse. In some cases otters will decide to den under a house near the water, which results in rather unpleasant odors.

Otters in our area feed primarily on fish and crabs. The young otters are born in March or April, with three to five kits being the average-sized litter.

Their larger cousin the Sea Otter swims almost entirely on its back and is only seen ashore if ill. The Sea Otter doesn't come ashore even to give birth to its single young.

The otters are members of the weasel family, which includes mink, weasels, martens, fishers and wolverines. Otters are distributed in North and South America, Europe, Africa and Asia.

River Otters *Bertha McHaffie-Gow*

Hummingbird Study

Which Sugar Concentration does the Anna's Hummingbird Prefer?

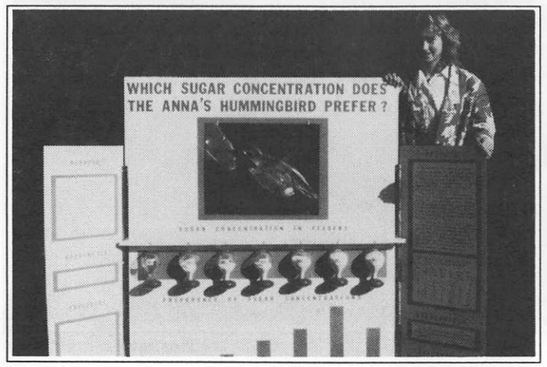
By Tessa Campbell

The Anna's Hummingbird is the only species of hummingbird which is present throughout the year on southern Vancouver Island (Godfrey 1986). This situation provides a unique opportunity to study this species, especially during the winter months. Also because of its primarily nectar diet, this species is an ideal subject in which to study taste preferences, because it regularly visits feeders at homes. Therefore, it is possible to determine the concentration of food (sugar–water) which the Anna's Hummingbird prefers and to compare my results with other studies. I expected that the taste preferences of the Anna's Hummingbird in British Columbia would be similar to that of other studies. In California this species prefers 30% sugar solution (Stiles 1976).

This experiment involved 7 hummingbird feeders filled with sugar concentrations, at 15% intervals, from 0% to 90%. Fine, granulated, white sugar solutions were expressed as percentages, that is 30% = 30 grains of sugar in 100 ml solution. To establish controls for the experiment, the kind, height, position and location of feeders was experimented with from October 1 to 18, 1987. After this, all feeders (the same kind) were placed on a horizontal rack, equally spaced (18 inches), at the same height above the ground (8 feet 6 inches), and set between two fruit trees in my backyard.

Observations were recorded daily, but randomly during the day, for 134 days, from October 19, 1987, to February 29, 1988. Data recorded included date, weather, time of day, sex of bird and length of feeding time, which was determined by using a stop watch. Nonfeeding visits were also recorded but not used in my analysis.

The results of this study are based on 338 feedings totalling 12,385 seconds of observation. At least 6 different hummingbirds visited the feeders.



Feeding activity was carried on throughout the day, from 0650 to 1836 hours. Feeding was only delayed during heavy rains and very strong winds. Feeding time ranged from 2 to 202 seconds per feeder but averaged 36.6 seconds for the whole study.

The table shows the number of times the feeders were visited during each of the 338 feedings. Hummingbirds preferred the feeder containing 75% sugar solution, which accounted for most feeding time (3,784 seconds), longest average feeding per visit (52 seconds), and nearly one–third (31%) of the combined feeding time for all feeders. Sugar solutions of 60% and 90% each accounted for 21% of all feeding time. Combined, these three solutions accounted for nearly three–quarters (71%) of all feeding time.

Summary of visits and feeding times per feeder by the Anna's Hummingbird in Victoria

Feeder	Sugar Conc.	# of Non-feeding Visits	# of Feeding Visits	Total Feeding Time (secs.)	Average Feeding Time (secs.)	Total Feeding Time (%)
A	0	14	1	2	2	0
B	15	14	9	89	10	1
C	30	10	41	1,315	32	10
D	45	18	67	2,003	30	16
E	60	32	86	2,576	30	21
F	75	15	73	3,784	52	31
G	90	16	61	2,616	43	21
		119	338	12,585		100

In California the Anna's Hummingbird prefers a 30% sugar solution (Stiles 1976), which is two and a half times more diluted than my results for British Columbia. This difference may be due to the colder northern climate, which may require more energy for survival, hence a higher sugar solution. In addition, because the bird's natural diet also contains small insects, these may be less available in British Columbia because it is colder and hence hummingbirds may feed on more concentrated sugar solutions.

In conclusion, I determined that the preferred sugar solution (75%) of the Anna's Hummingbird in British Columbia did not agree with other studies (30%) in California and I suggested reasons for this difference.

References

Godfrey, W.E. 1986. The Birds of Canada. National Museum of Canada, Ottawa, Ontario.

Stiles, G.F. 1976. Taste Preferences, Color Preferences and Flower Choice in Hummingbirds. Condor 78: 10–26.

Editor's Note: *Tessa entered her project in the Vancouver Island Regional Science Fair in April 1988, when she was in Grade 7 at Frank Hobbs Elementary School. She won second overall for Grade 4 to 12 students and the Fair's Communication award. She went on to represent British Columbia at the Canada–wide Science Fair in Winnipeg, Manitoba, the following month, and was awarded a bronze medal in Life Sciences and a Dow Chemical Canada scholarship.*

No Room at the Top

By Dr. Ian McTaggart–Cowan

A speech given at the Awards and Recognition Ceremony, University of Victoria, October 26, 1988.

You will be only too aware that the air across North America has been full of sound and fury as politicians compete to woo our support. This is the first election in my memory in which The Environment has been espoused by all parties. They have just discovered that Canadians are deeply concerned with a number of environmental issues. Clean water, clean air, acid rain, the greenhouse effect and toxic wastes are all issues difficult to escape if you read newspapers or listen to serious television.

All these concerns have a common thread: their focus is on the environment for *man*.

I am a biologist with a lifetime of research devoted largely to gaining an understanding of the lives of large mammals. I want to use my few minutes with you tonight to introduce you to the environment for other earthlings—our fellow passengers on planet earth across millions of years.

My title is "No Room at the Top" and it's perhaps a strange one for an audience of achievers such as all of you. Let me try to develop its relevance.

I hope all of you would recognize a killer whale, polar bear, grizzly bear, wolf or mountain lion if you met it in the wild. These creatures have several things in common. Each is a predator and lives by hunting and killing other creatures often much larger than itself. Hunting as a way of life is a complex and skill–requiring behaviour, and in each of these species the young require two or more years of training before they are fully ready for self support. Each also stands at the summit or top of a major ecosystem—the frozen seas, the temperate ocean edge, the great plains—and in each of these the top predator has no enemies but man.

The "top dog" position has its problems. Each of the powerful summit predators is dependent for its survival on the well–being of its prey. Anything that brings disaster to its normal prey is sooner or later a catastrophe to the predator. The impact may be as final as death by starvation, but more frequently the finely tuned biological process of the flesh eaters shuts down the reproductive input and puts the population on hold. Individuals grow more slowly, fewer young are produced and more of them die before they mature, birth intervals increase and there is increased death rate from many causes.

Recently I was asked by World Wildlife Fund, a major conservation organization, to review the status of the summit predators of Canadian ecosystems, asking of each what it is telling us about the health of the Canadian environment. As I explored this task I found myself asking, with growing concern, what the likelihood was of each of these species surviving for the next thousand years.

Let me take but one of these superb creatures and lead you with me as I explored. The trail I want you to follow is that of the grizzly bear, in real life an exhilarating experience.

> *Yes, man as a species—a summit predator himself, in a way—requires resources to live, but as a sentient being he has a responsibility to respect the essential needs of his companions on the journey of life.*

This great bear once dominated four ecosystems from the Arctic coast to the cactus–strewn mountains of Mexico and from the salmon rivers of the Pacific coast east to Hudson Bay. But it is extirpated over most of its former range. In Canada the Great Plains ecosystem has been totally destroyed; gone are the multitudes of buffalo (50 million of them), the herds of elk and the countless twinkling bands of pronghorn. Gone also are the great flesh eaters that followed the herds and lived on the buffalo—the wolf and the plains grizzly. Their habitat is our wheatland; we needed it for our survival.

But both wolf and grizzly live on in mountainous western North America from Yellowstone Park to Alaska. Thanks to our activities they are in trouble over much of this remaining range.

The grizzly has been a casualty to a clash of our cultural myths. The dominant one, simply stated, is that man has a right—almost an imperative—to commit everything to his own use, limited only by the dictates of economics.

An alternative vision is slowly emerging. Yes, man as a species—a summit predator himself, in a way—requires resources to live, but as a sentient being he has a responsibility to respect the essential needs of his companions on the journey of life.

In Canada we try hard to reverse the course of extinction when it threatens any one of our mammals and birds. We spend heavily to do so. We get carried away with the plight of individual creatures with which we can identify (the three grey whales trapped in the ice off Point Barrow).

But let us get back on our trail, the deep trodden paths of the grizzly through our farthest hinterland.

We have three rather distinctive types of grizzly in Canada, a small yellowish bear on the tundra, a hugh brown salmon–eating bear in the coastal areas of B.C. and Alaska and the silvertip grizzly of the interior mountains. The focus of those entrusted with wildlife conservation is the indefinite survival of at least one population of each of these bears.

The bottom–line question is how much land area of suitable grizzly habitat is required to ensure that a 1,000–year population of each of these ecotypes survives.

The answer to this question requires that we know, to begin with, what is the smallest population likely to survive in-

definitely and also what land area this number of bears will require.

The data for these queries has been gained through many years of painstaking research by a few courageous and dedicated biologists who have been attaching radio collars around the necks of hundreds of grizzlies and thus following their every move without intruding on them. It's the kind of research that has its exciting moments along with a large quota of discomfort. We had to know how old females were before they had their first litter (5–9 years), how frequently they had young (every 3 to 5 years), how many of their young die before maturity (over 60% in some habitats), and so on.

Using these and similar data, it has been calculated that we require about eighty females of breeding age and about the same number of males. Given the mix of old and young and male and female in any population, this number of breeding adults will occur in a population of about 390 bears.

We now know how many we must provide for. The next question is how much land each bear requires. Not surprisingly, this depends on the richness of the resources available to the bears. Each bear needs nutritious spring–feeding areas to recoup the draw–down of hibernation, and also a rich autumn food source to provide the energy for the next winter. Each also needs an area with the special requirements for digging a well–drained den that will remain snow sealed for four months or more.

On Admiralty Island, Alaska, there are about 1,000 grizzly using the rich resources of spring vegetation and autumn salmon, about 1 square kilometre per bear. I have trodden those trails, where the scent of bears is everywhere, not to mention less attractive evidence of their presence. So in similar habitat along the B.C. coast perhaps 1,000 square kilometres would carry our bear population of 390.

At the other end of the resource range, along the north slope of Alaska, bears require about 42 square kilometres per individual or 16,500 square kilometres for a viable population, an area about half the size of Vancouver Island.

With this rough biological arithmetic in hand, we have searched for areas available that can be dedicated to the summit predators and we find that there are precious few left. Even these are disappearing fast. Another Canadian myth is that there are vast areas of wilderness to which displaced creatures can retreat to live undisturbed. There aren't! There is almost no room left at the top.

The 8,000 square kilometres of our Rocky Mountain National Parks would be suitable—but this magnificent area is cut into three parts by transcontinental railway lines and twinned highways with a ceaseless parade of traffic shunned by the grizzlies. Fortunately the Parks are surrounded by wilderness areas that restore the required area. But will the tourist agencies cooperate to save these spaces?

So far we have not found an area along the extensive and remote coastal fiordland of our province where we can plan for the perpetual survival of the grizzlies of the coastal rain forest. Everywhere the single–minded dedication to removing all of the saleable primitive forest prevails.

A possible nucleus has been identified in almost the last untouched river basin, the Khutzeymateen River. You will have heard the howls of the timber harvesters at the suggestion of dedicating this small area and its environs to the great bears. Will their myth prevail?

I have done similar calculations for the other members of the big five Canadian predators, and the space required for their survival is infinitesimal in the sweep of all Canada.

Will our concern for environment have the scope and imagination to include these great ones, and to forbear tearing apart the few endangered spaces that they require?

These carnivore conservation areas will be fascinating places with management objectives not yet explored. On them the carnivores would have priority. But recall their position: for them to prosper, the entire ecosystem, the myriad of plants, insects, birds and mammals small and large, must also prosper. On these areas it will not be enough that the bears, wolves, mountain lions and wolverines live without threat from man. Here they must be first in all decisions. Roads, timber harvest, tourist development, forest–fire control, hunting by man and much more all must pass through the filter of potential impact on the top predators.

These areas will be most attractive places for people, who will come from all parts of the world to experience them. They will be totally novel. Protecting them from being loved to death will demand ingenuity.

But before they can be realized and the serious environmental problem of endangered spaces addressed, the conventional myth that always assigns our land–use priorities first to "development" must be revised.

I have been speaking to you as a biologist, but this is not a task for the biologist alone. Man is today so much the dominant force in all the ecosystems of the world that our companion creatures survive only as we decide they shall and dedicate ourselves to this purpose.

The visions of each of you, the myths that you espouse, do change the world. Disciplined thought in all the areas of learning dedicated to examining the condition of man increasingly includes the extraordinary diversity of creatures and life styles that enliven and enrich our own stay on earth.

It has been said that university education must sensitize emotion, refine perception, explain awe, promote creativity and engender understanding. It should help us distinguish between the ephemeral and the permanent, between the reasonable and the unreasonable, between the ugly and the beautiful.

As you journey through the university and refine the visions of the world you are prepared to strive for, I very much hope that you will find in them the commitment to providing some room at the top, some space for the consummate learners of the animal world, the summit predators, so that your children and their children can experience the fascination and awe these animals engender—and just because they are very special creatures, the products of eons of evolution.

The Bank Swallow on Vancouver Island

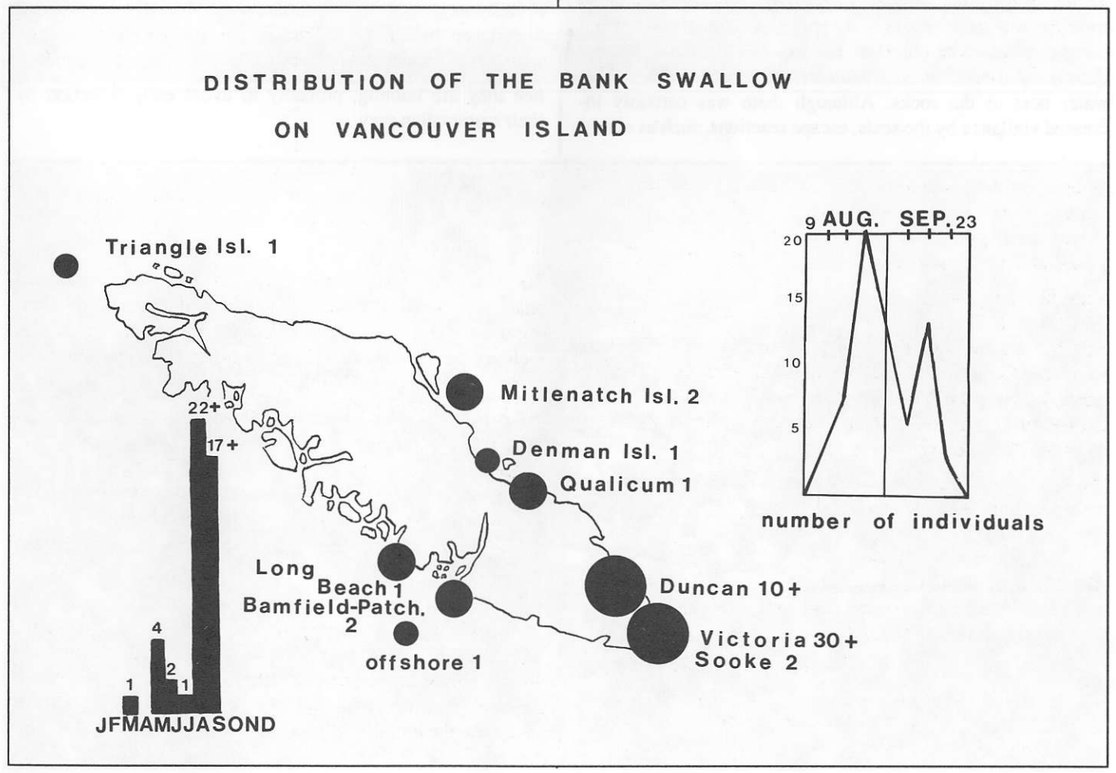
By Keith Taylor

The Bank Swallow is a very uncommon to rare fall transient on Vancouver Island. Most records are received from Cowichan Bay, Central Saanich (reservoirs in Martindale Flats) and the Victoria waterfront (Clover Point to Holland Point).

This swallow is a locally common summer resident over much of North America, nesting in large colonies from Alaska to the East Coast. It is restricted to the east side of the Cascades in British Columbia both as a breeder and largely as a migrant.

The first record of the Bank Swallow on Vancouver Island was of two at Denman Island on May 5, 1931. Spring and summer records are extremely rare and should be looked at carefully. The earliest spring date recorded was of one in Victoria on March 20, 1971 (early even for the interior). There are two records in May from Victoria, May 5, 1968 (9), and May 3, 1973, and one from Race Rocks, May 14, 1969. There are also two June records: June 23, 1971, at Duncan and June 14, 1986, one seen 48 miles to sea southwest of Tofino. One early July record comes from Discovery Island.

Bank Swallows are predictably seen at Victoria in August through September. There are two peaks of observations, in the third week of August and another with fewer observations in the second week of September. The appearance of Bank Swallows even in these months is erratic. Some years small flocks may be seen (1 to 5 birds), and a large flock of ten was seen at Qualicum Beach on August 20, 1973. Other years a single individual may be all that is encountered.



Harbour Seal Reactions to Killer Whales

By Pam J. Stacey and Robin W. Baird

Harbour seals (*Phoca vitulina*) are the main source of food around Victoria for the transient killer whales (*Orcinus orca*), but they are not consumed by the resident killer whales, who feed mainly on salmon and other fish. The two types of whales are different races, and are found in the same waters but do not interact with each other.

Harbour seals must detect killer whales using visual or acoustic cues. Researchers have tried playing back the vocalizations of killer whales to other marine mammals to test their reactions. The sound of a killer whale exhalation, or blow, might elicit a reaction from harbour seals. The sight of a killer whale dorsal fin may also be used in detection of these predators. It seems likely, though, for several reasons, that a combination of these cues may be used, and the reactions of harbour seals to killer whales probably depend on these cues.

The reactions of harbour seals to killer whales are not always easily predictable. A variety of factors are involved in the extent of reactions of harbour seals when they detect killer whales. The resident killer whales are not a great threat to harbour seals. The reactions of harbour seals when residents travel past a haulout site seem to attest to this. On several occasions we have observed resident killer whales passing closely by a harbour seal haulout, with seals visible in the water next to the rocks. Although there was certainly increased vigilance by the seals, escape reactions, such as climbing out onto the rocks, were not observed.

The visual presence of transient killer whales, however, definitely elicits an escape response in seals, who climb out on any available rock. As you can also see in the accompanying photographs, taken off Oak Bay near Trial Island, harbour seals will even overcome their fear of vessels and humans when faced with less pleasant alternatives. The seal shown here was being harassed by Y pod, three transient killer whales which are frequently seen in this area. The whales had already been playing with the seal for about fifteen minutes, leaping on top of it and making high speed passes around it, before the seal began to hide beside and under the vessel "Porpoise II". While the seal was next to the boat the whales circled around and under the boat, but did not come too close. Eventually the seal climbed up onto the engine, and into the back of the boat. After about a minute and a half, it returned to the water on its own. This escape behaviour into a boat has been noted several times before with harbour seals and at least once with a sea lion. After re–entering the water, the seal hid for a short period between the triple hulls of a U.S. whale research vessel, tried to climb into a dingy being towed by a passing sailboat, and then attempted to climb into our research

This was an extreme case where the whales had already detected and captured the seal and it tried, unsuccessfully, to escape. When harbour seals detect killer whales before the whales have detected them, such as in open water, they seem to cease all movement to avoid being detected. This tactic may actually work in most situations, since according to research undertaken by Dr. John Ford of the Vancouver Aquarium, transient killer whales are largely silent and not echolocating

hen they are hunting, probably to avoid early detection by their mammalian prey.

It is possible that harbour seals use a combination of visual and acoustic cues to detect killer whales, evidenced by their different reactions to residents versus transients. Since residents do vocalize frequently, harbour seals hearing killer whale vocalizations may know they have little to fear, whereas sighting the whales or hearing the exhalation without any underwater vocalizations could indicate a definite threat. They then respond with some sort of reaction, either stopping movement in open water so they can't be heard or hauling out on the nearest available piece of dry land—or, in some cases, boat!

Thomas Francis Park — A Reminiscence

By A.R. Davidson

I had been in New York for over a year, cycling seven miles to where I was doing office work in lower Manhattan. Unending streets, buildings, traffic, thousands of people—I couldn't take it any longer, so I bought a train ticket to Victoria, arriving here with my mother in the first week of April 1913. Victoria was suffering a depression, little money was circulating and work of any kind for any wages was hard to get; our money had run out by the time I managed to find some work. I remember getting my bicycle out of the Princess boat and exploring the surrounding countryside. The weather was warm and sunny and the spring flowers were all in bloom. What a difference there was between the fresh, clean air of Victoria and the turgid atmosphere of New York. One day I cycled as far as Munn Road; I had heard there was a hermit living there and I was curious. I never saw him, but his shack was near where the Nature House stands today.

It may have been in the late fifties or 1960 that Freeman King and Thomas Francis, the half–breed Haida Indian, got together. These two contrasting personalities met on one common ground, a strong love of the natural world and its preservation. Thomas Francis wanted his 180 acres of virgin forest kept intact after he had gone, but didn't know what to do and didn't trust any government. It would appear from what happened that Freeman King interviewed the Minister or his Deputy of the Department of Resources and Recreation, or whatever its title was. After investigation, they agreed to make the land a class "C" park, where it would be safe for all time, but a park that had to be maintained by some society as the government could not, according to the legislation, spend money on its maintenance. Thereupon Freeman King approached our Society and they agreed to be the sponsor, immediately forming a committee of four good men, Philip Monckton, a B.C. land surveyor, P.J. Croft, our President, David Stirling, a naturalist, and Allen Poynter, an electrical engineer.

These men got together at once and had the cottage built, with the help of John Davies, a member and professional builder, and much volunteer labour. On completion Thomas Francis was installed, but, alas, he was there only about a year when he became ill. Freeman King looked after the old man as if he was his brother, visited him regularly, and eventually had to contact a doctor who had him admitted to a hospital where he died, knowing that his wishes for his beloved property were fulfilled.

Freeman King then installed his wartime buddy Percy Dumbleton in the cottage as a caretaker, and he lived there for many years. I never visited the park without visiting him and his two cats.

Some time after this park was established, the Government acquired about 50 acres between Francis Park and Thetis Sanctuary and they called it the Freeman King Park, so parkland now extends for two and a half miles from Thetis on the west to Prospect Lake Road on the east. This Park is now administered by the Capital City Regional District.

Trails were made throughout the forest by Freeman and his junior foresters assisted by their parents. Their most ambitious one was what they called "The Centennial Trail," which started at the Nature House and made a circuit of the periphery of the property. Many times have I enjoyed walking around that long trail.

Growing Native...

By David F. Fraser

White Icicle and Vancouver Jade

Recently the UBC Botanic Gardens has been introducing some new plants and varieties of plants to the nursery trade. Two of these are fine selections of plants found native in our area. Both are worthy of a place in any garden.

The first of these is a fine pure white selection of our normally red *Ribes sanguineum*. White Icicle is a spectacular plant for the garden, with full trusses of white flowers, larger and longer than type. The other big advantage of this cultivar is that it flowers slightly earlier than average, a boon for early migrant hummingbirds. The plant grows quickly given average soil and water, and it is quite columnar in shape. Combined plantings of this and the red-flowering forms are particulary effective.

The second introduction is a great selection of our local Kinnickinnick, *Arctostaphyllos uva-ursi*, called Vancouver Jade. Here's a super ground cover, and this cultivar tends to be tougher in the garden than much of the local material. The problem of dying out in the middle is common with this species, and seems to be largely overcome when you use this selection. It grows quickly; we supplied the Native Plant Garden at the Royal British Columbia Museum with some Vancouver Jade this past spring, and it is covering the area nicely.

If you are looking in local nurseries for these plants, you'll notice that they are priced slightly higher than other plants of the same species. That's because every propagator of these plants pays a royalty. The money generated is used to develop and promote other new varieties. If they are as good as these ones, the extra pennies are well spent.

Thanks to Marva Jean Robinson for the artwork and help with the design of the information/membership brochure.

The Other Side of Esquimalt Lagoon

By Dannie Carsen

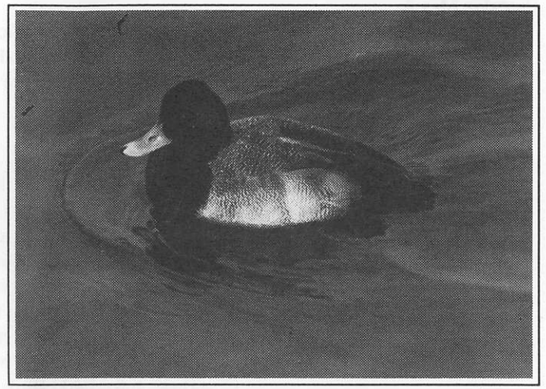
On November 12, Jeff Gaskin led a group of about 25 keen birders on a Saturday morning trip to Esquimalt Lagoon and Royal Roads. It was a cloudy day as we started our walk at the bridge end, and we were rewarded by the sight of groups of Bufflehead, White–winged Scoters, brilliantly patterned Western Grebe just offshore and a Ruddy Duck. As we walked the lagoon shore, a White–fronted Goose was casually resting with a group of Canada Geese and Lesser Scaups. Mallards, Coots, Red–breasted Mergansers and Hooded Mergansers were spotted with scopes along the opposite shore. As Jeff promised, a Snow Goose could be discerned across the lagoon grazing on the lawns of Royal Roads. Many House Finches, a Bewick's Wren, Brewer's and Red–winged Blackbirds and Double–crested Cormorants were reported by the widely dispersed group.

Near Ocean Boulevard (Palm Warbler country) several perky White–crowned Sparrows foraged and some Golden–crowned Sparrows perched near the bramble patch and hedgerows. We glimpsed a Green–winged Teal flying rapidly along the ocean side. Other sightings looking out over the ocean were a Red–necked Grebe and Horned Grebe, a Common Loon and Red–throated Loon—all noticed by a tall fellow named Rob with a large pair of binoculars. Someone said "We usually see Savannah Sparrows here too," and just on cue a group of Savannahs were spotted on the beach. An Oldsquaw was seen floating away out on the ocean along with rafts of Scoters, Western Grebes and Loons.

By this time, we realized that no birding records were to be broken, so when Jeff suggested a drive up to Royal Roads to confirm the Snow Goose, many of the group decided to go along. We had at least 3 visitors from out of town who took part—Sandy McRuer, a forester from Port Alberni who commented about the shortage of birders at the "Port," and Bruce Grant and Sheila Ray of Lasqueti Island, who proudly claimed to have there the highest number of birders per capita in B.C.

Almost everyone has been to Esquimalt Lagoon, but Royal Roads was a very pleasant change for many of us. It includes acres of large poplars and maples with a Japanese style garden and ponds. In short order we identified Bushtits, a Song Sparrow, and some low–profile Gadwall on the pond. Jeff has sharp eyes and noticed another White–fronted Goose as well as the Snow Goose among the throngs of Canada Geese on the lawns. As we walked along the picturesque ponds, we flushed a group of 12 Common Snipe which circled and swooped and finally landed again to become almost motionless amidst the clumps of grass. We began our lunch and, as we expected, it started to rain. Suddenly, Sandy McRuer said "I hear a Killdeer," and sure enough some hunched, cold and motionless specimens crouched on the lawn. At last count we totalled 30 species for the day.

Anyone who has not had a chance to visit Royal Roads should make a point of turning in at the guard house off Sooke Road and viewing life from the other side of Esquimalt Lagoon.



Lesser Scaup *Mark Nyhof*

Federation of B.C. Naturalists 1989 Annual General Meeting

Thursday, May 4 – Sunday, May 7, 1989 – University of Victoria

Thursday May 4

5:00–8:00 pm	Registration (Housing Office), tea, coffee & cookies
8:00 pm	Tour of the University Rhododendron Gardens.
10:00 pm	Owling at the University of Victoria.

Friday May 5

6:00 am	Early morning birding.
8:30–9:00 am	Registration — Cornett Building.
9:00–11:00 am	Round Table (by invitation).
9:00–11:00 am	Slide shows introducing Victoria's flora & fauna (Flowers – Kaye Suttill; Birds – Bruce Whittington; Sea Life – Pam Stacey).
12:00 pm	Lunch (not included in registration fee).
1:30–5:30 pm	Choose from the following field trips by bus. Cost $10.00 each.
	A. Sidney Spit Park. Short Ferry trip to see shore birds & fallow deer.
	B. Witty's Lagoon — 2 km walk through woods by waterfall to ocean.
	C. Thetis Lake Park. Birds & spring flowers.
	D. Island View Beach. Seabirds & sand dune plants.
	E. Prospect Lake Park. Birds & waterfowl (Giff Calvert's).
7:00–9:00 pm	Registration, Reception & Slide Show (Commons Block).

Saturday May 6

6:00 am	Early morning birding.
8:30–9:00 am	Registration (Cornett Building).
9:00 am	A.G.M. with break at 12:30 pm for lunch.
6:30 pm	Social hour at Dunsmuir Lodge (cash bar).
7:30 pm	Banquet at Dunsmuir Lodge, with Guest Speaker Wayne Campbell, Royal British Columbia Museum.

Sunday May 7

6:00 am	Early morning birding.
9:00 am	Choose from the following field trips:
	F. Botanical Beach (Drive along west coast to see a rich assortment of intertidal species) $25.00.
	G. Oak Bay Islands (Discovery, Chatham & Chain — rare plants, pelagic birds & marine life) $25.00.
	H. Whale Watching (Limit 12 people) $25.00.
	A, B, C, D & E Trips repeated if enough participants. Cost $10.00.

Registrations

Please send form (following page) with cheque made out to V.N.H.S. to:

Margaret Mackenzie–Grieve
2600 Penrhyn Street
Victoria, B.C. V8N 1G3
Tel: 477–2402

Suggested activities for those not attending the A.G.M. or for those extending their visit (Information will be available):

Butchart Gardens
Royal B.C. Museum
Gulf Island Ferry Trip
Swan Lake/Christmas Hill Nature Sanctuary
Goldstream Provincial Park
Capital Regional District Parks

Accommodation

Bed & Breakfast available at U.Vic from Thursday, May 4, to Sunday, May 7. Cost $20.00 per person/per night. Longer stays are possible.

Cost of lunches (or box lunches) & dinners are the responsibility of each participant. Approximate cost: Box Lunches $5.00, Dinner $6.00.

Please make your own room reservations with:

University of Victoria
Housing and Conference Services
P.O. Box 1700
Victoria, B.C. V8W 2Y2

Camping

There are Provincial & Private Parks in the area. Details if requested.

Registration Form

Registration Fee: $20.00 ($25.00 after April 20, 1989)

Banquet: $20.00

Name _____

Address _____

City_____Code_____Tel # _____

Club Affiliation _____

Registration: $20.00 ($25.00 after April 20, 1989) $ _____

Banquet: $20.00 _____

Field Trips
Friday 1st choice A B C D E
2nd choice A B C D E _____

Sunday 1st choice F G H A B C D E _____

TOTAL AMOUNT ENCLOSED $_____

Please indicate days you wish
Early Morning Birding _____

Screech Owls, University of Victoria *Mark Nyhof*

Mitlenatch Island Park Volunteer Warden Program

1989 Mid-June to end of August

This is a unique experience for naturalists to be volunteer wardens on Mitlenatch. Enjoy the sights and sounds for seven days.

There is a bird blind overlooking one of the Glaucous-winged Gull colonies, and Black Oystercatchers forage the beach for food for their chick(s). Pigeon Guillemot fly to and fro when feeding young and gather on stumps or rocks to serenade the island. Flowering plants are there to discover – at the right time, of course.

Return transportation to Mitlenatch from Saratoga Beach, Vancouver Island, provided by the B.C. Parks Branch (Miracle Beach).

Duties are:

1. direct visitors to points of interest;
2. caution visitors to stay out of the nesting colonies;
3. keep a record of the number of visitors.

Your preparation: be self-sufficient re food, bedding, and water (there's some help with the last).

Welcome to New Members

Oct. 4	Catherine Neighbour, of Toronto Street. Thanks to Gertrude Smith for this addition.
Oct. 11	Frank and Vera Fish, of Brentwood Bay. Interested in botany and mycology.
Oct. 11	Any and Mairi MacKinnon, of Witty Beach Road. All interests.
Oct. 17	Norma H. Patrick, of Sidney. Birds, Botany, Parks and available interesting areas.
Oct. 21	Bruce and Barbara Hanwell, of Kentwood Lane. Birding and Nature Walks.
Oct. 24	Mike Sheehan. His particular interests are sea birds and raptors.
Oct. 24	Heather Fox, of Ashgrove Street. Interested in birds.
Oct. 26	Sheila South, of Stevens Road. Bird watching.
Oct. 26	Garry and Julie Boyd, of Simcoe Street. Enjoy birding and hiking with their family.
Oct. 26	Lorna Wood, of Oliver Street.
Nov. 4	Jeffrey and Kathleen Ward, of Rosario Street. Recently from Manitoba. Enjoy birding, botany, and family outings.
Nov. 8	Philip and Betty Jeal, of Cobble Hill. Recently from Calgary (?).
Nov. 8	Ruth Isaac, of Sidney. Particular Interest: Birding.
Nov. 8	Carolyn Stephenson, of Emery Place.
Nov. 8	Maureen Bennett, of Sonria Place. Particular Interest: Invertebra.
Nov. 8	Janet Beck, of Metchosin Road. A Scholarship winner.
Nov. 14	R. John Nation, of Queensbury Avenue. Interested in Birding and outdoor books.
Nov. 15	Harry and Corinne Harsch, of Jefferson Avenue. Particular Interests: Birdwatching; Nature Walks/Hiking; Wildlife Art; Cats.
Nov. 16	June and Ernie Hills, of Cordova Bay Road. Interested in Horticulture. Thanks to Mr. and Mrs. Harry Lovett for this addition.
Nov. 21	Barbara Sedgwick, of Union Bay. Interested in Birds and Marine Life. Already a member of Comox–Strathcona Natural History Society.
Nov. 30	Brenda Robson and Brian Gibson, of San Lorenzo Avenue. Nature watchers. Willing to volunteer some time if help needed.

Classified Advertising

is available for V.N.H.S. Members at $5 per ad. Write your own ad — it will appear exactly as you submit it. Text only (no graphics or photos). Limit 35 words.

Upcoming Programs

Please meet at the location indicated for each trip. For field trips **BRING A LUNCH** and be equipped for changes in the weather. **Always phone the rare bird alert, 592-3381, the week before** a trip you plan to take in order to obtain full particulars or details about changes (sometimes unavoidable) that have been made. On VNHS trips, participants usually pool vehicles to reduce parking problems and costs. A considerable fuel bill can be run up on a trip, consuming 5 to 10 cents a km. The Board suggests that these costs be shared with the driver. Contact Lyndis Davis at 477-9952 if you want to borrow the Society scope for a scheduled trip.

If you would like to lead a field trip or have an idea for a program or club activity, please phone Dave Fraser at 479-0016.

JANUARY AND FEBRUARY PROGRAMS

Tuesday, January 10. The Wildlife Photography of Ken Toy. Come and see the photographs of National Geographic photographer Ken Toy and listen to some of his experiences in photographing wildlife around the world. V.N.H.S. meeting, 8:00 p.m. Begbie Building 159. University of Victoria. Free.

Saturday, January 14. Birding Along the Oak Bay Shoreline with Art Durkee. Meet at Cattle Point at 9:30 a.m. Trip will go to Oak Bay Marina and Shoal Bay until noon. If weather is poor, trip will go into Uplands Park.

Tuesday, January 17. Botany Night. Meet at 7:30 at the main door of the Royal British Columbia Museum. Phone the Rare Bird Alert beforehand for details of what to bring.

Saturday, January 21. Winter Annuals and Herbaceous Perennials. Botany field trip with Bob Ogilvie. Meet at the parking lot at Cattle Point at 10:00 a.m.

Wednesday, January 25. Birder's Night at Swan Lake Nature House. Meet at 7:30 p.m. Tim Zurowski will show slides of a recent trip to Arizona.

Sunday, January 29. Birding at the north end of the Saanich Peninsula with Ken Morgan. Trip will go to Pat Bay and Moses Point. Meet at the end of Mills Road at Pat Bay at 9:30. Trip will last until noon.

Tuesday, February 7. VNHS Annual Banquet. Dr. Ian Mctaggart-Cowan will speak on Shipboard Encounters with Marine Mammals. contact Dorothy McCann (592-1992) or Connie Hawley (385-2535) for tickets. Buy tickets early; we are anticipating a full house! Note that the program is on the first Tuesday of February instead of the second, which avoids Valentine's Day conflicts.

Tuesday, February 21. Botany Night. Meet at 7:30 at the front doors of the Royal B.C. Museum. Phone the Rare Bird Alert for details before the program.

Wednesday, February 22. Birder's Night at Swan Lake Nature House. Meet at 7:30 p.m. Bob Ward will be showing slides of bird sand habitats in the Victoria area.

Friday, February 24 to Sunday, February 26. Winter Natural History Trip to Kamloops. We'll be staying at Lac le Jeune Resort in cabins that sleep six people, have access to their fireplace-equipped conference room for evening slide shows, and spend our days looking for Pine Grosbeaks, Rosy Finches, Bighorn Sheep, Great Grey Owls and much more. Leaving on the 1:00 p.m. sailing on the Friday and returning early evening on the Sunday, we will have two nights in the Kamloops area. If you are a cross-country skier, this is a trip for you, as the lodge has many miles of groomed trials open at this time of year. Call David Fraser or Leah Ramsay at 479-0016. Accommodation will be around $50.00 per person; meals and carpooling costs extra. Space is limited.

SOME UPCOMING PROGRAMS

Tuesday, March 14. In Pursuit of California Wildflowers with Dr. Gerry Allen.

Tuesday, April 11. Dinosaurs of British Columbia with Rick Kool.

Tuesday May 9. Gardening for Wildlife with Tracy Hooper.

May 17 - 25. Canyonlands trip to the Grand Canyon, Bryce Canyon, Zion and Montezuma National Monument. See article in this issue for further details. Pre-trip and post-trip extensions will bring you round trip from Victoria, or if time is limited you can fly to Phoenix for the Canyons. Phone 388-4227 for more information. Note that VNHS is sponsoring this trip and bookings made by VNHS members before January 20 are at a reduced rate.

The Victoria NATURALIST

Second Class Mail Reg. 6428

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Victoria, B.C. V8R 6N4

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Christmas Hill Nature Centre
3873 Swan Lake Road
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