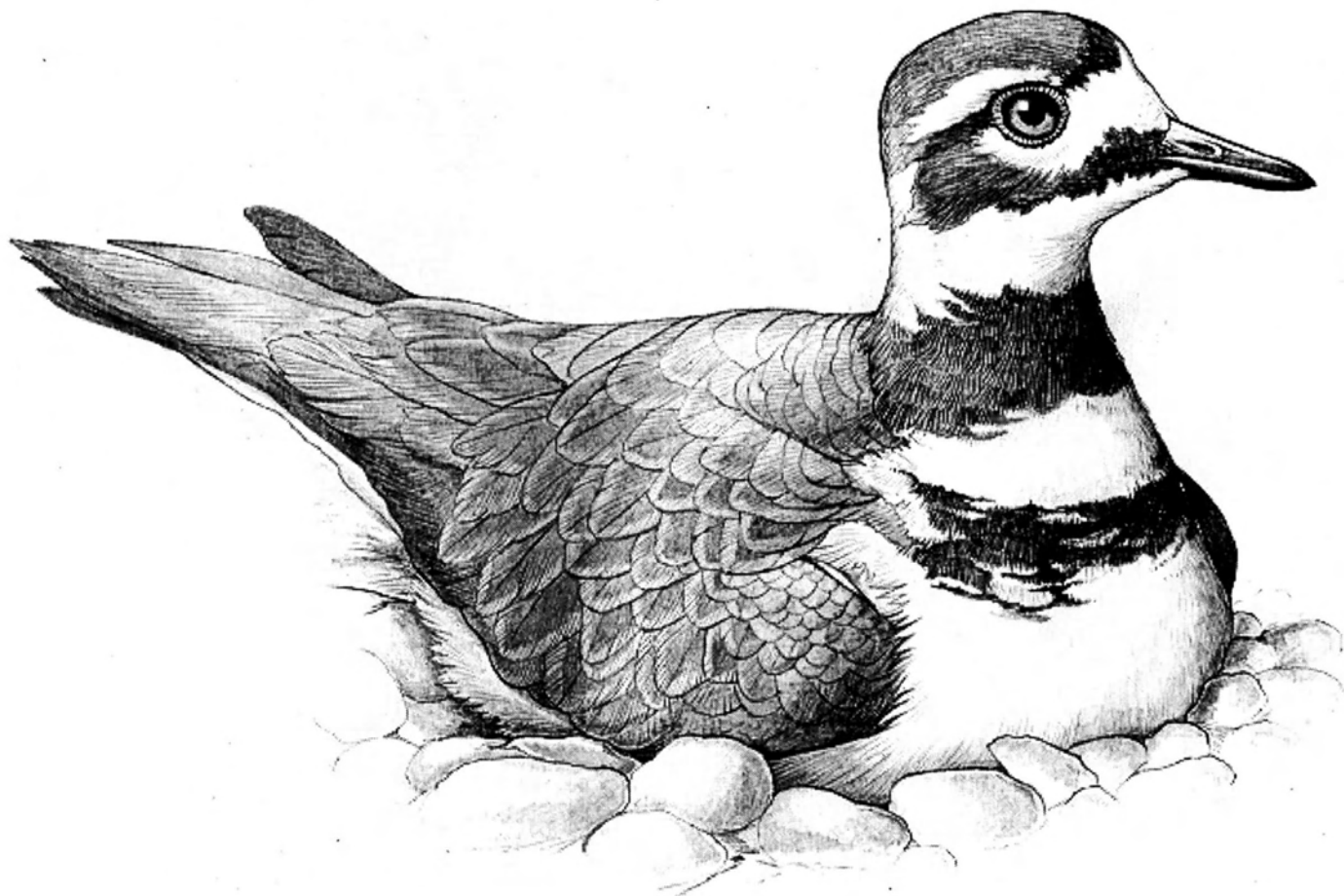


# BRITISH COLUMBIA NEST RECORD SCHEME

## 45th Annual Report - 1999 Nesting Season



R. Wayne Campbell, Andrea R. Norris, Maureen L. Funk, and Jeremy V. Kimm

February 2000

## PARTICIPANT PROFILES

Each year, the importance of the B. C. Nest Record Scheme becomes more significant as annual information is gathered and filed in a central repository for use in analyzing long-term information on birds. Two committed individuals, who together have contributed over 53 years of information to our knowledge of birds in the province, are profiled here.

### William J. (Bill) Merilees

Bill's early interests in natural history were cultivated by his parents. In 1955, he joined the Vancouver Natural History Society and was introduced to William M. Hughes, leader of the Birding Section. They became almost inseparable on field trips, bird-banding excursions, and other Society activities.

In 1958, Bill obtained his bird-banding license and the following year entered U.B.C., majoring in Zoology and Botany. His university life was busy; he participated as a volunteer in the grad student programs, in particular those co-ordinated by Rudi Drent. He co-ordinated the B.C. Nest Record Scheme in 1961 and 1962, five years after he submitted his first cards for Warbling Vireo and "Audubon's" Warbler. He still remains active today and is a strong advocate for volunteer non-government projects like the BCNRS.

From 1960-1964, he worked on Mittenatch Island as a seasonal naturalist with B.C. Parks, the latter year with Wayne Campbell as his assistant. He worked in Australia from 1966-1967 and in 1968 accepted a teaching position at Selkirk

College, in Castlegar, where he initiated, and co-ordinated, the 'West Kootenay Bird Study' until 1976. This project led to the formation of the West Kootenay Naturalists' Association. The information gathered was kindly loaned to the "Birds of B.C." project for one-time use after which it was his intention to produce a book on birds of the area.

In 1978, Bill moved to Nanaimo where he was employed by B.C. Parks as an interpretation/visitor services officer until his retirement in 1997.

His broad natural history interests are reflected in his major writings: "Humpback Whales of Georgia Strait", "Gardening for Wildlife", "Trees, Shrubs and Flowers to Know in British Columbia and Washington" (co-authored with Chess Lyons), and a history "Newcastle Island – a Place of Discovery". One of his main interests continues to be the marine mollusc fauna of B.C.

For his work, Bill has been honored by the Kootenay Doukhobor Historical Society, the Federation of B.C. Naturalists (Elton Anderson Award), the Nanaimo Field Naturalists, the Vancouver Natural History Society, and the City of Nanaimo.



### Ed Beynon

In 1977, Ed was introduced to record-keeping by the West Kootenay Naturalist's Association who were fortunate to have Bill Merilees provide a solid foundation and a biological focus for their efforts. Since then, Ed has participated in bird counts and has been a regular contributor to the *B. C. Nest Record Scheme* and all volumes of *The Birds of British Columbia*.

He grew up in Cranbrook when it was a small town and it was easy to walk or bike to the bush. Many hours were spent playing, hiking, fishing, and camping in the woods from an early age. He experienced the incredible variety and numbers of birds which could be easily seen around the potholes and grasslands in southern Alberta in the spring of 1965 and has been hooked on birds ever since!

As a UBC graduate in civil engineering, he worked in metal mining and refining, and fertilizer production in British Columbia, Alberta, Nebraska, Northwest Territories, and Labrador. Ed is married to Dawn and has three grown children and seven grandchildren. He retired to Robson in 1997.

His other interests include conservation, church, music, and various outdoor activities. He is concerned about the rapidly-expanding world population of people which will have a continuing negative effect on all other species due to habitat loss and pollution. The fight for habitat conservation has just begun and will become much more difficult as human numbers and their living requirements press in on all land and aquatic areas.



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Compiled by

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## THE 1999 NESTING SEASON

### Summary

Each nesting season is different. This year the weather was generally wet and unsettled across much of the southern half of British Columbia while in far northern regions rain was scarce and field conditions were fairly good. **Evi Coulson** wrote that in the Smithers area it was the wettest summer since she moved there in 1980. Because of the cool weather, the vegetation seemed 3-4 weeks behind, especially in the alpine; other hikers said the same.

The season was not a good year for bird reproduction. **Hylda Mayfield** wrote: "from our nest box trail of 53 boxes [in the Vernon area] we fledged 35 new **bluebirds** this year compared to 98 in 1998. This year had no second broods." Also in the northern **Okanagan Valley**, **Cliff Day** believed that some chicks in nest boxes died because of the cold, wet, and windy weather and he noted that nesting activity was started by swallows in some boxes but was not completed nor were eggs laid. In the **Princeton** area, **Jerry Herzig** noted that the season was poor with few **grouse coveys** and quite a few abandoned nests. In the **Cariboo**, **Beverly Butcher** compared the past two years for production in her nest box trail. On the same date (May 24), she found many young birds as well as eggs in 1998 but only a few Mountain Bluebird nests and only three Tree Swallow nests with eggs in 1999. Most of May 1999 was wet and cold and her follow-up check in June revealed many dead young.

The season was long - it lasted 213 days or 58% of the entire year. The earliest nest, a **Great Horned Owl**, was found in the Creston Valley by **Linda Van Damme** on February 5 and the latest active nest, a **Barn Swallow** with young being fed on the edge of their nest in Manning Park, was reported by **J. Ginns** on September 24.

Despite the uncertainty of field conditions, **524** active nest-finders tallied **8,394** individual breeding records for **249** species!! Another **1,753** historical nest records were transferred to our current cards from another **218** individuals bringing the grand total of new nests/broods added to the BCNRS in 1999 to **10,147**.

No new nesting species were added to the provincial list this year. Significant range extensions, however, were documented for **Pacific Loon**, **Western Grebe**, **Barn Owl**, **Barred Owl**, **Long-eared Owl**, **Merlin**, **Magnolia Warbler**, **Tennessee Warbler**, and **White-throated Sparrow**. As well, nests of a few peripheral species, such as **White-headed Woodpecker**, **Northern Shrike**, **Yellow-breasted Chat**, **Baird's Sandpiper**, and **Hudsonian Godwit**, were discovered.

Twenty-three species accounted for 56% of all nest cards of which historical Blue Grouse breeding records topped the list with 703. Thirteen individuals accounted for just over one-third of all cards.

Use of information in the BCNRS continued to be high. Over 1,900 requests were received of which 650 people were sent data they requested. About 50 publications appeared that incorporated some BCNRS data.

### Highlights

#### Species

Several significant events highlighted an incredible year. We received very detailed data on all aspects of the breeding ecology of nearly 600 **Blue Grouse** and a few **Ruffed Grouse** nests discovered by **Dr. Fred Zwickel** and his students during decades of research on Vancouver and Hardwicke Islands. Not only is it important to have a copy of this valuable data set outside of his home but it also provides a baseline for studies in the future and enhances the importance of having historical data safely on file in a central repository.

**Douglas Leighton**, a long-time supporter of the BCNRS, donated part of his life this summer to fill in gaps in the breeding distribution of birds in the Golden-Blaeberry Valley area. Most of the information was incorporated into the final volume of *Birds of B. C. - Wood-Warblers to Old World Sparrows*. Over 200 cards were submitted with new information on ranges for **Magnolia Warbler**, **Tennessee Warbler**, **Nashville Warbler**, **Common Yellowthroat**, **American Redstart**, and **MacGillivray's Warbler**.

Despite the lack of new breeding species, this year was filled with surprises. The pair of **White-headed Woodpeckers** that nested the past two summers in the southern Okanagan Valley did not return to their nest tree. The other known nesting pair, which is located outside the Okanagan, raised two young. A **Yellow-breasted Chat** nest with 4 eggs, the first one in the province for over a decade, was found in riparian habitat in the southern Okanagan Valley. **Laurie Rockwell** doubled our actual nests examined for the **White-throated Swift**. He was able to reach two of four nests in a rock crevice in a cliff near Naramata. The colony has been used for years as a pile of old fecal material was found at the entrance to each site.

**Kari Stuart-Smith**, and her research assistant **Chris Thevarge**, found B. C.'s first **Pine Grosbeak** nest with eggs while searching for nesting birds near Whitesail Lake in the East Kootenay. The nest was located in a conifer in a regenerating logged area. **Glenn R. Ryder** found our first coastal breeding record for the **Red-naped Sapsucker**. The nest cavity was located in a dead birch tree in **Langley** and Glenn added a convincing coloured drawing of the adult on the back of the nest card.

**John M. Cooper**, and field assistants **Cam Gillies** and **Mark Nyhof**, completed research on **Lewis's Woodpecker** in the East Kootenay in 1997 and 1998. Excellent information was submitted on nest contents, multiple use of trees, breeding chronology, and habitat.

Kootenay birders **Elaine Moore**, **Rita Wege**, **Emilee Fanjoy**, and **Robin Rohmoser** continue their third year of a monitoring program for **Osprey** nests from Balfour to Waneta. Elaine said, "it was another fun season and we really enjoyed watching "our" Osprey families grow."

Recent university graduate **Lorri Harpur** participated in the BCNRS for the first time. He decided to search for, and monitor nests, for species in the Rock Creek area visiting rangeland, wetlands, agricultural fields, forests, and even nest boxes. He located over 250

nests and for many he arranged timing for repeat visits. For example, he flagged and numbered **Yellow-headed** and **Red-winged blackbird** nests in a cattail wetland and



**Lorri Harpur**

followed them through the season providing rare documentation of nests which is unusual for any wetland-nesting species in B. C. He had difficulty explaining why he found a dead mouse in a Red-winged Blackbird nest! Can anyone help?

Most information on clutch and brood size for **Bank Swallows** in B. C. is from specimens of early collectors. Although some people estimate numbers of birds, or count burrows, to indicate the size of a colony, precise information on the stage of development of a particular colony is difficult to get. **Glenn Ryder**, however, actually examined a colony at the Hugh Keenlyside Dam near Castlegar. He rappelled over a cliff and by shining a bright flashlight into each burrow determined the actual contents of 30 nest chambers. **Glenn** also reported the largest brood of **Red-naped Sapsuckers** for the province. On 24 July he watched 8 young and 2 adults all on the same tree away from their nest near Scotch Creek.

In mid-January, **Andrew C. Stewart** started his research again on the breeding ecology of **Cooper's Hawks** in the Greater Victoria area. He finished his observations in early September having found and monitored 35 nests. The data set, copies of which are held in trust in the BCNRS, is the most comprehensive for the species anywhere.

Most breeding records for **Harlequin Ducks** are from broods spotted on rivers but **Kenneth Wright** found several nests, one on an islet in the middle of a river. When asked about tips on how to locate nests he said, "as one of the privileges of doing research I was able to fit a few females with radio transmitters and follow them to their nests!" He recorded our first information on the dimensions of Harlequin Duck nests and at the same time monitored **American Dipper** nests.

We now have the most complete set of local breeding data for the **Brewer's Sparrow** on the continent thanks to graduate student **Nancy Mahony**. Over the past three summers she has located 562 nests and provided detailed information on the location, habitat requirements, clutch and brood size, and breeding chronology for this little known sparrow in the southern interior of the province.

An intensive effort by **Michael McMann** to locate raptor nests in the Creston Valley was carried out in 1998. He completed 71 cards for active **Osprey**, **Bald Eagle**, **Red-tailed Hawk**, **American Kestrel**, and **Great Horned Owl** nests. In addition, he monitored three **Great Blue Heron** colonies. Unfortunately the detailed summaries took more time than he realized and the cards were not included in the 1998 report.

Breeding information on **Rusty Blackbirds** anywhere in the Okanagan Valley is rare. The species is locally distributed and usually found in higher elevation wetlands. **Phil Gehlen** provided excellent information, including behavioural observations, for a nesting pair throughout the summer.

**Western Grebe** production in Salmon Arm Bay was at an all-time low this year due to high water levels that did not drop until after egg-laying commenced and which covered most of the nest substrates. **Frank Kime** counted 49 nests in two sites but later could only manage to locate 10 young.

The distribution and breeding biology of alpine-nesting species is poorly known in B. C. So we were delighted that **Eva Durrance** filled out cards during her hiking trip into Cathedral Lakes and Tweedsmuir Park where she spotted broods of **Golden-crowned Sparrows**, **American Pipits**, **White-tailed Ptarmigan**, and **Fox Sparrows**.

Over the past few years there has been an alarming local decline in colonies of **Barn Swallows** and the number of young they produce. **James Patterson** did not find any **Barn Swallows** nesting in Vallican where they nested in previous years. This may be natural, but over the next year we will examine the situation more closely. It is important to follow all such nests next year. We are grateful to **Paul Levesque** who monitored 28 nests on southern Vancouver Island in 1999 with up to 10 visits per nest.

Other noteworthy breeding species included **Trumpeter Swan**, **Broad-winged Hawk**, **Hudsonian Godwit**, **Baird's Sandpiper**, **Northern Shrike**, **Gray-crowned Rosy-Finch**, and **American Tree Sparrow**.

Twenty-three species, with over 100 nests and/or broods each, accounted for 56% of all cards received. The top 10 species included **Blue Grouse** (703), **Ring-billed Gull** (573), **Glaucous-winged Gull** (540), **Barrow's Goldeneye** (529), **Canada Goose** (360), **Common Merganser** (303), **Tree Swallow** (290), **Mallard** (217), **Brewer's Sparrow** (215), and **Osprey** (205). These were mainly the results of donations of historical data, nest box trails, specific counts of colonial-nesting species, raptor-monitoring projects, and records transferred from diaries and notebooks.

Other species with unusually high numbers of cards included **Common Loon**, **Hooded Merganser**, **Cooper's Hawk**, **Peregrine Falcon**, **White-tailed Ptarmigan**, **Spruce Grouse**, **Sandhill Crane**, **Arctic Tern**, **Barn Owl**, **Great Horned Owl**, **Western Screech-Owl**, **Boreal Owl**, **Lewis's Woodpecker**, **American Dipper**, **Northern Waterthrush**, and **Golden-crowned Sparrow**.

Some other noteworthy finds were **Western Tanager** and **Lazuli Bunting** (Rita Wege - West Kootenay and Robert S. Ferguson - East Kootenay), **Gray Partridge** (Lorri Harpur - Myers Lake), **Black Swift** (Linda Van Damme - Nelson, Gordon Brown - Kaslo, and Jim Lawrence - Cooper Creek), **Williamson's Sapsucker** (Bryan Chruszcz - Whiteswan Lake and Jerry Herzig - Princeton), **Northern Waterthrush** (Lee Foster - Vanderhoof area and Linnea Cross-Tallman - Mackenzie), **Magnolia Warbler** (Linnea Cross-Tallman - Mackenzie and Morgan Anderson - West Kootenay), and **Olive-sided Flycatcher** (Myriam Leighton - Blaeberry Valley).

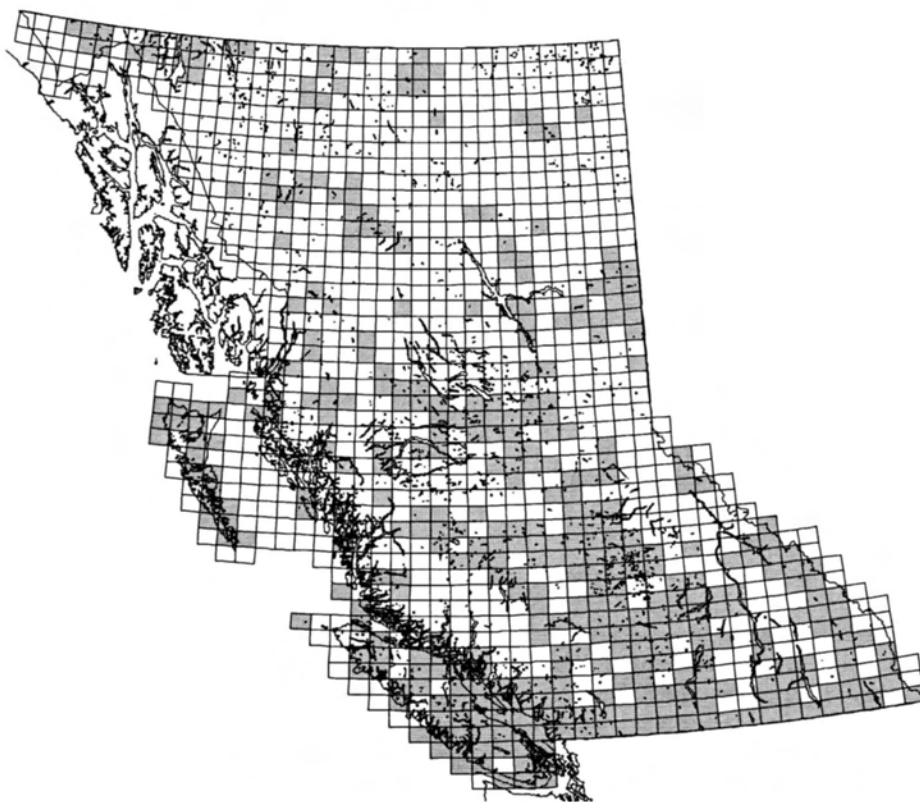
## Coverage

Fortunately, areas across southern British Columbia were still well represented this year. This information provides the base upon which long-term evaluations can be made on productivity and changes in local ranges and use of habitats. As expected, **Vancouver Island**, the **Okanagan**, **Thompson**, and **Creston** valleys, and the **Princeton** area received most attention.

A few energetic individuals visited northwest B. C. covering little known areas along the Stewart-Cassiar Highway, Atlin, and Haines Highway. The result - new range extensions were discovered for species like **Pacific Loon**, **Semipalmated Plover**, and **Least Sandpiper**.

Alpine areas of the province are still poorly represented in BCNRS files. Some people have expressed an interest to spend their holidays next year "with the ptarmigan." They will soon discover that species diversity will be low and nests will be difficult to find but each record they return with will be earned and valuable.

Historical information extracted from diaries and literature helped develop a better understanding of birds breeding on the **Queen Charlotte Islands**, and in the **Cariboo-Chilcotin** and **Peace River** areas.



*Over 30% of all grids in the province were visited by nest-recorders in 1999.*

## Participants

For the second year in a row, **Linda Van Damme** led all participants with 1,432 cards of which 815 were for the 1999 season. Her commitment to locate and record nests and young wherever she travels is exemplary. Thirteen other nest-finders submitted over 100 cards and together they accounted for just over half of all cards received. These include **Hilary Gordon** with others (695), **Kenneth G. Wright** (691), **Glenn R. Ryder** (598), **Fred C. Zwickel** with others (582), **R. Wayne Campbell** (338), **Lorri Harpur** (255), **Nancy Mahony** (215), **Douglas Leighton** (211), **Beverly H. Butcher** (168), **R. Jerry Herzig** (126), **Lucile Campbell** (111), and **Alice Beals** and **Vicky Atkins** (108).

Other participants who submitted over 50 cards included **Janice E. Arndt**, **Chris Charlesworth**, **Linda Durrell**, **John M. Cooper**, **Orville Gordon**, **Pat Janzen**, **Jeremy V. Kimm**, **Vi, John & David Lambie**, **Hylda Mayfield**, **Michael McMann**, **Guy L. Monty**, and **Rita Wege**.

Several people, who coordinate information on birds regionally throughout the province, spent time to transfer 1999 breeding information onto cards for others. These dedicated individuals were **Hilary Gordon**, **Alice Beals**, **Douglas J. Wilson**, **Maureen L. Funk**, **Jeremy V. Kimm**, and **Linda Van Damme**.

We are always pleased when professional biologists make an effort to complete nest cards for their field season and encourage their assistants to do the same. This year **Kari Stuart-Smith** and her crew sent in 51 cards from the East Kootenay and **Tom Dickinson**, along with **Stu Brookes**, from University College of the Cariboo in Kamloops, had students **Ernest Leupin**, **Ralph Heinrich**, **Stephen Jolly**, and **Dave Pehl** submit cards from the Sicamous Creek Research Forest.

**Paul Levesque**, who lives in Victoria, had to complete two sets of cards for the same breeding records. He writes "The majority of my cards were ruined in the washing machine; luckily no data was lost. If you could send me some more cards, that would be great. I promise to take better care of them!" [Thanks Paul].

## Quality of Information

We cannot go back in time to get data we may need in the future. So, it is important to invest energy when examining each nest and brood and record as much pertinent information as time allows. Over the past few years we have been reminding participants of the significance of such data and you have been responding.

This season was the best ever for the quality of information recorded on cards. Two examples, by veteran nest-finders **Douglas Leighton** and **Glenn Ryder**, show the type of detail that many of the cards contained. Some people wrote directly on cards when in the field while others preferred to maintain personal diaries and transfer information later.

Very complete cards, filled in with a lot of thought including ages of downy waterfowl broods were received from **Guy L. Monty**, **Jerry Herzig**, **Kenneth G. Wright**, **Jo Ann & Hue Mackenzie**, and **Morgan Anderson**.

British Columbia Nest Record Scheme									
Species: <b>YEWA Yellow Warbler</b>		Map Grid: <b>B2 N/6</b>		Name of Observer: <b>D. LEIGHTON</b>					
LOCALITY: <b>B+J Goodson River Park (McCarthy Marsh) 25 KM N of Golden, BC</b>		NUMBER OF EGGS OR YOUNG AT EACH VISIT				REMARKS (to be yr, including eggs only, just hatched, banded, etc.)			
Date	Month	Year	Eggs	Yng.					
	6	99	—	—					
13	6	99	4	—					♀ inc
23	6	99	—	4					nakedly - prob 1 day old
30	6	99	—	3					hatched w/ legs extended, full nest
8	7	99	—	—					nest empty / finished
If more than 7 visits are made to a single nest use another card for further visits.									
General Location: <b>in deciduous riparian thicket along edge along Columbia R</b>					NEST DESCRIPTION: <b>building on top of old nest base, new grass cup w/ cattail, below first water in</b>				
Elevation: <b>200m</b>					Height above ground: <b>1.3m</b>				
Observer: <b>D. Leighton</b>									
Date Recd:		Spec. Recd:		Museum:					

## Filling in the Blanks

We have received several complaints about the lack of space in which to write things and the needless repetition of the instructions on the back of each card. We purposely kept information spaces small so that the task of entering data electronically could be more efficient.

We will remove the "instructions" text on the card in the next printing as people want more space to write things they feel are important about a particular nest or brood. A new *Instruction Manual*, available in the spring, will contain this material. We do not expect everyone to fill in spaces for "Map Grid" and the shaded portions of the cards. We may move the "ecological" information to the back of each card which will leave more room for "Habitat" and "Nest Description".

Please print or write legibly in the spaces and use dark ink, not pencil. The 4-letter code (see WBT Wild Bird Trust of British Columbia Wildlife Report No. 2 - *Common and Scientific Names, Sequence and 4-Letter Codes*) can be used for species names and subspecies (e.g., "Audubon's" Warbler = AUWA, "Oregon" Junco = ORJU, etc.). Full names should be included in the "Observer" box. Some participants have had a rubber stamp made with their address which they use on the front of each card.

Drawings of nest locations are helpful, especially for colonial-nesting species which move about locally and regionally. **Jim Patterson** provided nice sketches for the **Cliff Swallow** colony at the Seven Mile Dam on the Pend-d' Oreille River.

Whenever possible try to describe nestlings (e.g., eyes closed, naked young, some down on head, etc.) or age downy young (especially waterfowl). This information can be used to calculate breeding times.



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## Repeat Visits

The number of eggs laid and hatched and how many young successfully fledge is one of the most important pieces of information the BCNRS can provide. Nests found locally, of course, are easy to monitor while those located away from home are more difficult. Appendix 2 suggests timing of visits to maximize information for songbirds.

**Janice Arndt** was able to record 33 "visits" for a **Pacific-slope Flycatcher** who laid eggs in an old **American Robin** nest built on a light fixture on her home. **Chris Dale** carefully watched the behaviour of a pair of **Bald Eagles** and recorded pertinent information 16 times on three cards. **David Bostock** watched a pair of **Dusky Flycatchers** feed their young to fledging and recorded relevant data for nine dates.

Many people put in a huge effort to document the outcome of nests with well-timed visits: **Lorri Harpur, Paul Levesque, David Bostock, Linda Van Damme, Kari- Stuart-Smith, Chris Thevarge, Beth Michener, Bryan Chruszcz, Stan Olson, Jody Medynski, Joanna Ribb, Claire Soluhub, Elaine Moore, Rita Wege, Emilee Fanjoy, Lee Foster, Emily Müller, Mark Phinney, Kenneth G. Wright, and E. E. Leather.**

Monitoring nest boxes for **Mountain & Western bluebirds, Tree and Violet-green swallows, chickadees, and House Wrens** is a big job. Fortunately, a few trails were followed on nests cards including the **Okanagan Valley** (Alice Beals, Vicky Atkins, and Clifford Day), **Cariboo-Chilcotin** (Beverly Butcher), and **Dawson Creek** (Len and Molly Donaldson).

## Negative Information

No information is good information especially when you expect to find something you have monitored for years and then suddenly it is no longer there. Filling out nest cards with lots of blank spaces can be very important in analyzing changes over time in numbers of colonial-nesting species, owls, hawks, and waterbirds. For example, **Long-eared Owls** being monitored at two locations over the past several years could not be located during the 1999 season. A **Great Blue Heron** colony located in the Columbia Valley relocated to a stand of black cottonwood nearly a kilometer away.



*Great Blue Heron*

## Notes From The Field

Each year, nest-finders see and experience things which are rarely included on nest cards and seldom make it into electronic data bases. Here are some of their stories:

### Cooling Down

During a hot spell on southern Vancouver Island, **Barbara Begg** watched an adult **Barn Swallow** visit her feeder and bathe. The bird immersed itself in the water 5 or 6 times, occasionally pecked at the water with bill agape and quickly returned to its nest high in the gable of a house. It was obvious the bird was cooling itself, and its young, where temperatures around the nest approached 30° C!

On Bechers Prairie, west of Williams Lake, **Wayne Campbell** observed a panting **Spotted Sandpiper** leave its nest and fly to a nearby slough for the same purpose. It splashed vigorously in shallow water for almost a minute before returning to its nest completely water-logged. The silly-looking shorebird then moistened its 4 eggs by turning them, then settled to continue incubation in the blistering sun.

### Clever Crow

Over the past few years, the introduced **Gray Squirrel** has become a common visitor to bird feeders on southern Vancouver Island. Many people enjoy hand-feeding them peanuts. The squirrels quickly realize the potential food source and busily snatch a peanut and race to a nearby soft spot in the soil to bury it for future use. A **Northwestern Crow**, incubating 4 eggs in a nest near Victoria soon realized what was being done. Every time the squirrel buried a peanut, the crow watched and when it returned for more handouts the clever black bird would fly from its nest, uncover the peanut, eat it, and return to resume its incubation duties. Apparently these encounters went on for weeks!! Too bad the nest-finder could not monitor the nest. The crow may have had the longest incubation period for its kind in the province!!

### Egg-eating Bald Eagle

Each year, **Barbara Sedgwick** carefully watches a small colony of **Great Blue Herons** which nest near her property in Union Bay. In late March and early April, the herons begin their noisy courtship ritual and start building their stick nests high up in conifers. It is well known that **Common Ravens, Bald Eagles, Great Horned Owls, raccoons,** and even **black bears** eat nestling Great Blue Herons. But on April 15 Barbara watched a **Bald Eagle** eating eggs from one of the heron nests. One Great Blue Heron was "swearing" at the eagle while others nearby sat around watching the event!!

## Stuck in the Marina

A pair of **Violet-green Swallows** found the open end of a boom on a sailboat anchored in the North Saanich Yacht Club an ideal spot to raise a family. In early June, a nest was built, eggs were laid, and incubation started. The owners, concerned that they might disturb the swallows, patiently waited for 40+ days for the nesting cycle to be completed before taking their sailboat out of the harbour!

## Bushtits Not-To-Be Bullied

While transferring notes from the field diaries of the late **Martin W. Holdom** at Crescent Beach, a noteworthy encounter between a **Brown-headed Cowbird** and pair of **Bushtits** was uncovered.

On May 13, 1964 Martin noticed a pair of **Bushtits** starting to build a nest in a birch tree near his house. Four days later, the outside of the nest was completed and it was ready for lining. On May 18, however, a **Brown-headed Cowbird** was twice driven away by the **Bushtits** as it tried to enter the nest. That evening, the nest had a gaping hole in it. The following day the pair of **Bushtits** started to repair their home and actually left the new hole in the side of the nest and used it as their entrance. By June 15 the adults were feeding young in the nest and on July 1 they all fledged!!!

## Persistent Wood Duck

**Norma and Keith Morton** have always had **Wood Duck** nest boxes on their property near Courtenay. Each year they enjoy watching families of "woodies" feed among the pond lilies on their secluded pond. Early in the year, Norma and Keith check the boxes to assure that they are secure and clean. One of the boxes, however, was found on the ground with three freshly broken eggs in it. They hurriedly replaced the box and soon the female returned to its nest site to finish laying her clutch. This incident may have accounted for only three hatched chicks, rather than the usual larger family.

## Backyard Chickadees

Some birds will pick up whatever is nearby to build or line their nests. A pair of **Chestnut-backed Chickadees**, using a nest box in a Victoria backyard, took advantage of some clothes and shoes which were placed on a sundeck to dry.

On April 5, the chickadees discovered that fluff on sweaters and coats provided exactly what they wanted for their nest. The birds were watched most of a morning as they diligently tugged and gathered up small lint balls before returning to their nest 30 feet away. By noon the clothes were "cleaned" but they wanted more. The birds soon discovered laces in a couple of pairs of shoes and frantically tried to pull them out of their eyelets - without success. Then the chickadees visited the gutters for mosses and other nesting materials!!

## Orphan Swallows

**Pat Janzen** from Clinton writes: "On Aug 15 my little granddaughter found three **Cliff Swallows** on the ground after their nest fell down. The cats would have killed them, so she brought them to me, who luckily had two nests of **Barn Swallows** with young about the same age. We put two in one and one in another because they only had three young in each nest.

On Aug 24 the **Barn Swallows** were flying and on Aug 26 the **Cliff Swallows** were flying. It was a success story. She has a real love for birds."



*Belted Kingfisher*

## Learning to Fish

On July 4 two **Belted Kingfishers** left their nest burrow in Masset Inlet. **Janet Gifford** described their first attempts at hunting as follows: "the young kingfishers spend most of their time along the creek. When fishing, they are much more awkward than the adults. They hit the water with a great splash, stay submerged longer, and frequently when they emerge without a fish, will go through a series of dives in one flight with short distances between dives. They also spend much time chasing each other. In the midst of a chase, both will land, usually in different trees, then one will launch itself at the other and then they start all over again."

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## Recognizing Nesting Material

Urban **Black-capped Chickadees** in Nelson certainly know natural nesting material when they see it. On April 24, **Linda Van Damme** was thawing owl pellets on her sidewalk so they could be later picked apart for analysis. It wasn't long before a pair of Black-capped Chickadees noticed the pellets, flew down and landed on some pellets and teased them apart to extract mouse fur. Soon they took off across the alley, bills full of material to line their nest!!

## Staggered Hatching

Most birds begin incubating eggs soon after the last egg in a clutch is laid. Synchronous hatching may be important for availability of food. Weather, predation, and other factors may interrupt the incubation period and cause staggered families of eggs and young. At a **Cliff Swallow** nest in Mackenzie, **Linnea Cross-Tallman** noticed two young fledge from a nest on July 23 and on inspecting the nest found two more eggs. They hatched two days later and the young were raised successfully.

## Robbing Nests

While conducting research on Cooper's Hawks on southern Vancouver Island, **Andrew C. Stewart** witnessed an event that probably occurs often but is seldom seen. On 19 July he watched a pair of **Cooper's Hawks** deliver a nestling **American Robin** to a nest he was watching with 4 fully fledged young. While watching a young Cooper's Hawk eat the prey a pair of robins became agitated nearby. Soon Andy noticed the male Cooper's Hawk move towards a robin nest in an ivy-covered trunk and snatch a nestling robin in one of its talons. Both adult robins chased the hawk without success. Within 3 minutes the nestling was delivered to a family of hungry and begging hawks which were standing near their nest.

## Tent Caterpillars and Nesting Birds

In 1961, **Glenn Ryder** found tent caterpillars "very bad" in the Green Timbers area of Surrey. He writes: "they seem to be at their peak now in red alders and birches which are completely stripped of their foliage. Long thick caterpillar webs hang thickly in the trees so much so that it is almost impossible to walk in the area. The damage is great to nesting bird species."

During a comprehensive search of a large area he found 93 abandoned nests with eggs as follows: **Cedar Waxwing** (35 nests), **American Robin** (14 nests), **Song Sparrow** (3 nests), **Yellow Warbler** (4 nests), **Northwestern Crow** (5 nests), **Red-eyed Vireo** (3 nests), **Rufous Hummingbird** (1 nest), **American Goldfinch** (24 nests), and **Black-headed Grosbeak** (4 nests). Of course the nests were easy to spot because there was no foliage to hide them.

## Historical Information

The task of transferring historical breeding information from museum collections, scientific literature, government, consulting, and student reports, and field notebooks to our standardized nest cards continued. About 1,753 nest records were tallied from 218 individuals including well known field naturalists like James A. Munro, Allan Brooks, J. E. Victor Goodwill, Glenn R. Ryder, Theed Pearse, Eric M. Tait, Ron Satterfield, Kenneth Racey, Elmer Callin, John Comer, Kenneth C. Boyce, Werner and Hilde Hesse, Chris Siddle, Adrian Dorst, Charles J. Guiguet, Canon Martin W. Holdom, Michael S. Rodway, J. Bristol Foster, Leo Jobin, Hamilton M. Laing, Ian McTaggart-Cowan, and Wayne C. Weber.

**Linda Van Damme** spent a lot of time during 1999 searching her old field notes for nesting records. She completed 616 cards, 191 for the period 1993-1995 and another 425 cards for 1996. **Glenn Ryder** went back into his diaries and transferred 267 nest records for the years 1971, 1997, 1998, and 1999. Noteworthy species, and nests hard to find, included **Black-throated Gray Warbler**, **Orange-crowned Warbler**, **Hutton's Vireo**, **Wilson's Warbler**, and several kinds of owls. Many of these nests had repeat visits. **Elizabeth Abbott** welcomed the chance to revisit her personal diaries and extract notes on the historical use and success of **Common Loons** nesting on lakes in the Powell River area.

**Kenneth G. Wright** went through his notebooks for his travels around the province in 1997 and 1998 and filled in 73 cards for 40 species including **Harlequin Duck**, **Common Merganser**, **White-tailed Ptarmigan**, **American Pipit**, **Townsend's Warbler**, and **Golden-crowned Sparrow**. Each card had excellent notes on habitats.

Several participants sent in cards for the 1998 nesting season. **Linda Durrell** completed 49 cards for the Chilcotin River area in the Cariboo. Noteworthy records included recently fledged young for **Western Tanager**, **Lazuli Bunting**, and **Evening Grosbeak**. She also kept track of local **Cliff Swallow** colonies. **Beverly Butcher** summarized results for her nest box trail along Dog Creek Road west of Williams Lake to Alkali Lake. Most of her 81 cards, with 3-4 well-timed repeat visits, were for **Mountain Bluebird**, and **Tree and Violet-green Swallows**.

**Michael and Joanna Preston** sent in over 130 cards for which pertinent information was extracted from old government and consultant reports, museum catalogues, journal literature, and diaries of early naturalists. **Andrew C. Stewart** read through William G. Sheldon's book "*Exploring for Wild Sheep in British Columbia in 1931 and 1932*" and discovered several noteworthy records for **Harlequin Duck** and **Rock Ptarmigan** from northeastern B. C.

Others who transferred old records included **Janice Arndt, John M. Cooper, Kathi Linnman, Stu Brookes, Cam Gillies, R. Wayne Campbell, Ed Silkens, Andrea Norris, Tom Dickinson, and Jeremy V. Kimm.**

### For the Record

Several omissions and errors crept into the 1998 report. The contributions of Ph.D. candidate **Kari Stuart-Smith** (16 nests), co-ordinator of the East Kootenay Songbird Project, and her assistant **Julie Stewart** (7 nests) were somehow overlooked. We also miss-filed 25 cards submitted by **Dirk Rinehart-Pidcock.**

**Clifford A. Day** (page 4) was erroneously listed as checking nest boxes on Vancouver Island. In fact, the location should have read "the Vernon area" or "North Okanagan." **Lucille Campbell** (page 11) was spelled incorrectly - it should have read **Lucile M. Campbell.** As well, the total number of cards she submitted on her own and with other people should have totaled 61. She should have also been listed in the section listing contributors with "over 50 cards". Finally, **Linda Durrell**, who did not submit cards in 1998, was credited with 104 cards. Is someone else missing these in their totals?

We apologize for these mistakes.

## List of Species and Nests/Broods by Family

### Family Gaviidae: Loons (72)

Pacific Loon – 6 and Common Loon – 66.

### Family Podicipedidae: Grebes (348)

Pied-billed Grebe – 38, Horned Grebe – 17, Red-necked Grebe – 83, Eared Grebe – 134, and Western Grebe – 76.

### Family Hydrobatidae: Storm-Petrels (16)

Fork-tailed Storm-Petrel – 13 and Leach's Storm-Petrel – 3.

### Family Phalacrocoracidae: Cormorants (11)

Double-crested Cormorant – 3 and Pelagic Cormorant – 8.

### Family Ardeidae: Bitterns, Herons, Egrets and Night-Herons (117)

American Bittern – 1, Great Blue Heron – 99, and Green Heron – 17.

### Family Cathartidae: New World (American) Vultures (1)

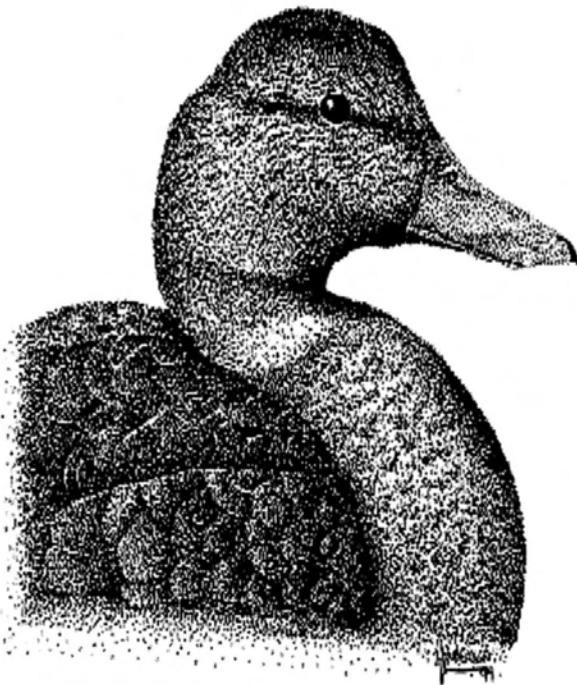
Turkey Vulture – 1.

### Family Anatidae: Geese, Swans and Ducks (2,371)

Canada Goose – 360, Mute Swan – 49, Trumpeter Swan – 4, Wood Duck – 136, Gadwall – 59, American Wigeon – 19, American Black Duck – 3, Mallard – 217, Blue-winged Teal – 59, Cinnamon Teal – 18, Northern Shoveler – 46, Northern Pintail – 30, Green-winged Teal – 19, Canvasback – 114, Redhead – 34, Ring-necked Duck – 31, Lesser Scaup – 26, Harlequin Duck – 16, White-winged Scoter – 29, Bufflehead – 49, Common Goldeneye – 104, Barrow's Goldeneye – 529, Hooded Merganser – 78, Red-breasted Merganser – 2, Common Merganser – 303, and Ruddy Duck – 37.

### Family Accipitridae: Osprey, Kites, Eagles, Hawks and Allies (462)

Osprey – 205, Bald Eagle – 122, Northern Harrier – 4, Cooper's Hawk – 42, Northern Goshawk – 5, Broad-winged Hawk – 1, Swainson's Hawk – 15, Red-tailed Hawk – 60, and Golden Eagle – 8.



*American Black Duck*

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**Family Falconidae: Falcons (67)**

American Kestrel – 22, Merlin – 11, Peregrine Falcon – 30, and Prairie Falcon – 4.

**Family Phasianidae: Partridges, Pheasant, Grouse, Ptarmigan and Turkey (1,048)**

Chukar – 4, Gray Partridge – 6, Ring-necked Pheasant – 13, Blue Grouse – 703, Willow Ptarmigan – 25, Rock Ptarmigan – 3, White-tailed Ptarmigan – 80, Ruffed Grouse – 144, Spruce Grouse – 66, Sharp-tailed Grouse – 3, and Wild Turkey – 1.

**Family Odontophoridae: American Quail (122)**

California Quail – 122.

**Family Rallidae: Rails, Gallinules and Coots (150)**

Virginia Rail – 10, Sora – 5, and American Coot – 135.

**Family Gruidae: Cranes (29)**

Sandhill Crane – 29.

**Family Charadriidae: Plovers (116)**

Semipalmated Plover – 19 and Killdeer – 97.

**Family Haematopodidae: Oystercatchers (110)**

Black Oystercatcher - 110.

**Family Recurvirostridae: Stilts and Avocets (4)**

American Avocet – 4.

**Family Scolopacidae: Sandpipers, Phalaropes and Allies (113)**

Greater Yellowlegs – 1, Lesser Yellowlegs – 5, Solitary Sandpiper – 2, Spotted Sandpiper – 49, Upland Sandpiper – 1, Long-billed Curlew – 5, Hudsonian Godwit – 1, Least Sandpiper – 3, Baird's Sandpiper – 2, Long-billed Dowitcher – 1, Common Snipe – 20, and Wilson's Phalarope – 23.

**Family Laridae: Jaegers, Skuas, Gulls, Terns and Allies (1,270)**

Bonaparte's Gull – 15, Mew Gull – 62, Ring-billed Gull – 573, Herring Gull – 28, Glaucous-winged Gull – 540, Caspian Tern – 3, Arctic Tern – 36, Forster's Tern – 2, and Black Tern – 11.

**Family Alcidae: Auks, Murres and Puffins (9)**

Pigeon Guillemot – 9.

**Family Columbidae: Pigeons and Doves (73)**

Rock Dove – 14, Band-tailed Pigeon – 18, and Mourning Dove – 41.

**Family Tytonidae: Barn Owls (15)**

Barn Owl – 15.

**Family Strigidae: Typical Owls (102)**

Flammulated Owl – 1, Western Screech-Owl – 24, Great Horned Owl – 26, Northern Hawk Owl – 1, Northern Pygmy-Owl – 2, Barred Owl – 13, Great Gray Owl – 3, Long-eared Owl – 6, Short-eared Owl – 8, Boreal Owl – 5, and Northern Saw-whet Owl – 13.

**Family Caprimulgidae: Goatsuckers (35)**

Common Nighthawk – 33 and Common Poorwill – 2.

**Family Apodidae: Swifts (19)**

Black Swift – 3, Vaux's Swift – 6, and White-throated Swift – 10.

**Family Trochilidae: Hummingbirds (73)**

Black-chinned Hummingbird – 5, Anna's Hummingbird – 9, Calliope Hummingbird – 13, and Rufous Hummingbird – 46.

**Family Alcedinidae: Kingfishers (49)**

Belted Kingfisher – 49.



*American Avocet*

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**Family Picidae: Woodpeckers (365)**

Lewis's Woodpecker – 67, Yellow-bellied Sapsucker – 17, Red-naped Sapsucker – 70, Red-breasted Sapsucker – 72, Williamson's Sapsucker – 6, Downy Woodpecker – 7, Hairy Woodpecker – 19, White-headed Woodpecker – 1, Three-toed Woodpecker – 32, Black-backed Woodpecker – 10, Northern Flicker – 32, and Pileated Woodpecker – 32.

**Family Tyrannidae: Tyrant Flycatchers (150)**

Olive-sided Flycatcher – 2, Western Wood-Pewee – 6, Alder Flycatcher – 8, Willow Flycatcher – 19, Least Flycatcher – 9, Hammond's Flycatcher – 5, Gray Flycatcher – 1, Dusky Flycatcher – 20, Pacific-slope Flycatcher – 11, Say's Phoebe – 12, Western Kingbird – 23, and Eastern Kingbird – 34.

**Family Laniidae: True Shrikes (2)**

Northern Shrike – 2.

**Family Vireonidae: Vireos (34)**

Cassin's Vireo – 2, Hutton's Vireo – 9, Warbling Vireo – 19, and Red-eyed Vireo – 4.

**Family Corvidae: Jays, Magpies and Crows (108)**

Gray Jay – 15, Steller's Jay – 12, Blue Jay – 1, Clark's Nutcracker – 4, Black-billed Magpie – 31, American Crow – 21, Northwestern Crow – 7, and Common Raven – 17.

**Family Alaudidae: Larks (3)**

Horned Lark – 3.

**Family Hirundinidae: Swallows (635)**

Purple Martin – 8, Tree Swallow - 290, Violet-green Swallow - 43, Northern Rough-winged Swallow – 13, Bank Swallow – 98, Cliff Swallow – 69, and Barn Swallow – 114.

**Family Paridae: Chickadees (76)**

Black-capped Chickadee – 27, Mountain Chickadee – 12, Chestnut-backed Chickadee – 30, and Boreal Chickadee – 7.

**Family Aegithalidae: Bushtit (23)**

Bushtit – 23.

**Family Sittidae: Nuthatches (28)**

Red-breasted Nuthatch – 16, White-breasted Nuthatch – 3, and Pygmy Nuthatch – 9.

**Family Certhiidae: Creeper (8)**

Brown Creeper – 8.

**Family Troglodytidae: Wrens (62)**

Bewick's Wren – 15, House Wren – 24, Winter Wren – 14, and Marsh Wren – 9.

**Family Cinclidae: Dipper (31)**

American Dipper – 31.

**Family Regulidae: Kinglets (15)**

Golden-crowned Kinglet – 11 and Ruby-crowned Kinglet – 4.

**Family Muscicapidae: Bluebirds, Thrushes and Allies (455)**

Western Bluebird – 30, Mountain Bluebird – 148, Townsend's Solitaire – 10, Swainson's Thrush – 19, Hermit Thrush – 12, American Robin – 228, and Varied Thrush – 8.

**Family Mimidae: Mockingbird, Thrashers and Allies (15)**

Gray Catbird – 15.

**Family Sturnidae: Starling and Allies (71)**

European Starling – 71.

**Family Motacillidae: Wagtails and Pipits (3)**

American Pipit – 3.

**Family Bombycillidae: Waxwings (67)**

Bohemian Waxwing – 1 and Cedar Waxwing – 66.



*Gray Jay*

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**Family Parulidae: Wood-Warblers (147)**

Orange-crowned Warbler – 9, Nashville Warbler – 4, Yellow Warbler – 38, Magnolia Warbler – 2, Yellow-rumped Warbler – 17, Black-throated Gray Warbler – 7, Townsend's Warbler – 5, Blackpoll Warbler – 1, American Redstart – 18, Ovenbird – 1, Northern Waterthrush – 12, Connecticut Warbler – 1, MacGillivray's Warbler – 8, Common Yellowthroat – 15, Wilson's Warbler – 8, and Yellow-breasted Chat – 1.

**Family Thraupidae: Tanagers (16)**

Western Tanager – 16.

**Family Cardinalidae: Cardinals, Grosbeaks and Allies (33)**

Rose-breasted Grosbeak – 2, Black-headed Grosbeak – 13, Lazuli Bunting – 17, and Indigo Bunting – 1.

**Family Emberizidae: Towhees, Sparrows, Longspurs and Allies (494)**

Spotted Towhee – 15, American Tree Sparrow – 1, Chipping Sparrow – 31, Brewer's Sparrow – 215, Vesper Sparrow – 9, Lark Sparrow – 3, Savannah Sparrow – 18, Grasshopper Sparrow – 1, Fox Sparrow – 4, Song Sparrow – 39, Lincoln's Sparrow – 7, White-crowned Sparrow – 24, Golden-crowned Sparrow – 24, and Dark-eyed Junco – 103.

**Family Icteridae: Blackbirds, Orioles and Allies (428)**

Bobolink – 1, Red-winged Blackbird – 183, Western Meadowlark – 1, Yellow-headed Blackbird – 107, Rusty Blackbird – 6, Brewer's Blackbird – 38, Common Grackle – 19, Brown-headed Cowbird – 52, and Bullock's Oriole – 21.

**Family Fringillidae: Cardueline Finches and Allies (55)**

Gray-crowned Rosy-Finch – 1, Pine Grosbeak – 2, Purple Finch – 3, Cassin's Finch – 1, House Finch – 12, Red Crossbill – 5, White-winged Crossbill – 2, Pine Siskin – 13, American Goldfinch – 8, and Evening Grosbeak – 8.

**Family Passeridae: Old World Sparrows (15)**

House Sparrow – 15.

*Total nests/broods – 10, 147*

*(1999 season – 8,394, historical – 1,753)*

*Total species – 249*

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**List of Active and Historical (\*) Contributors in Alphabetical Order**

**A** Mrs. Abbey – 1, Elizabeth Abbott – 9, Kay Adams – 1, R. H. Adrian – 1, David Aldcroft – 2, David Aldcroft and W. D. Kragh – 1, Andy Anderson – 1, E. M. Anderson – 7\*, Jerry and Gladys Anderson – 6\*, Morgan Anderson – 28, R. M. Anderson – 1, W. B. Anderson – 1, William J. Anderson – 1, Lorraine Andrusiak – 3, Jerry Ansell – 1, Ted Antifeau – 1, Janice E. Arndt – 60, R. Askevold – 1, Vicky Atkins – 28, and Madeline Austin – 1.

**B** John Backlund – 1\*, Brian Baker – 8, G. Barclay – 1, Chris Barner – 2, Ian and Henry Barnett – 2, Gordon Barry – 1, Virginia Bartkow – 1, J. Baumborough – 2, Helen Bavin – 1, Helen and Pat Bavin – 1, Derek Beacham – 6\*, Alice Beals – 48, Alice Beals and Vicky Atkins – 60, Alan Bear – 11, William Beaufort – 1, Frank L. Beebe – 11\*, R. Dorothy Beestra – 3, Barbara Begg – 25, Barbara Begg and Sheila Rymer – 1, Mrs. J. P. Bekker – 1, G. M. Bell – 1, Katie Bell – 2, Jim F. Bendell – 2\*, Tanya M. Bennett and Maureen L. Funk – 6, Fred Bennie – 1, Michael Bentley – 1, Marion Benton – 6, William D. Benton – 1, Douglas and Elinor Bertram – 1, J. Bevan – 2, Ed Beynon – 45, Ed Beynon and Gwen Nicol – 1, R. R. Billings – 1, Joe Blake – 1, Thomas Blakiston – 1\*, Peter Blökker – 7, Donald A. Blood – 4, Barry Booth – 2, David Bostock – 1, Jack Bowling – 7, Jack Bowling, Andra Bismanis and Jocelyn Salton – 1, Tom Bowsakowski – 4, Kenneth C Boyce – 26\*, Susan J. Boyce – 1, Malcolm Boyd – 1, Bob Bradley – 1, Dorothy M. Bradley – 2, Charles A. E. Brandt – 1, Beverly Bravender – 1, Sandy Briggs – 1, Tom R. Briggs – 3, Tom and Gwen Briggs – 1, Tom Brighthouse – 13, British Columbia Fish and Wildlife – 4\*, British Columbia Council Staff – 1\*, Tom Broadley – 1, Stu Brookes – 18, Allan Brooks – 93\*, Gordon Brown, Jim R. Lawrence and Linda Van Damme – 1, Marie Bruce – 5, Nancy E. Buck – 1\*, Markus Buelow – 1, C. Burns – 1, James Burns – 39, Walter Burton – 2, Chris Bush – 1, David Bush – 3, David Bustard – 1\*, Beverly H. Butcher – 168, Robert W. Butler – 2\*, Robert W. and Sharon Butler – 1, Andreas Buttimer – 14, Don Byers – 20, and Robert Byers – 1.

**C** Damon Calderwood – 8, Giff Calvert – 4\*, Carol Campbell – 3, Eileen Campbell – 1, Lucile M. Campbell – 111, Lucile M. Campbell and Randy Hopkins – 4, Lucile M. Campbell, Randy Hopkins, and F. Otis – 1, Lucile M. Campbell and F. Otis – 1, R. Wayne Campbell – 338, R. W. Campbell and Richard R. Howie – 7, Canadian Wildlife Service Staff – 1, Hazel and Steve Cannings – 1, Geoffrey B. Capes – 1, G. Clifford Carl – 2\*, Bruce and Nicola Carmichael – 1, Harry R. Carter – 5, Rob Catchpole – 4\*, Robert Cerenzia – 2, Alan R. Charbonneau – 1, Chris Charlesworth – 80, Chris Charlesworth and Jack Bowling – 1, Trudy A. Chatwin – 8\*, B. Chruszcz – 5, Myke J. Chutter – 4\*,

Paul and Rosemary Clapham – 2, Murray Clark – 1, C. H. D. Clarke – 1\*, Jenny Clarke – 1, June Cochrane – 18, D. Code – 15\*, Ed Coffin – 1, Gwen Colby – 1, Kelly and Jennifer Collard – 1, J. Mary Collins – 1\*, Mary and Tom Collins – 1\*, Cyril Colonel & Linda Van Damme – 1, John Comer – 31\*, Chris Cook – 1, J. K. Cooper – 2\*, John M. Cooper – 28, F. Corbould and P. Hengeveld – 1, Evi Coulson – 3, Evi and Mel Coulson – 4, Eric Counsell – 1, M. E. Courtnall – 4\*, Vic Cousineau – 26, Vic and Cecile Cousineau – 2, Terry Cox – 2, Tom Coyle and Karen Dubord – 1, Dosie Crawford – 1, Linnea Cross-Tallman – 41, Lyle Crowe – 5, D. Cumfferman – 1, R. A. Cumming – 5\*, and H. H. Currie – 2\*.

**D** Chris Dale – 1, Mark K. Daly – 3\*, P. Dance and Sandy McRuer – 1\*, S. J. Darcus – 1\*, Eleanore Davidson – 1\*, Gary S. Davidson – 2, Lyndis A. Davis – 4, Neil K. Dawe – 9, Cliff Day – 18, C. de B Green – 1\*, Mike Delarondo – 1, R. Despot – 1, Brent Diakow – 3\*, Paul Diggle – 1\*, J. S. Dixon and Harry S. Swarth – 1\*, Len Donaldson – 1, Len and Molly Donaldson – 26, Adrian Dorst – 3, B. Doughton – 1, Douglas D. Dow – 2\*, D. Doyle – 1, Rudi Drent – 2\*, Betty Drew – 1, H. S. Drinker – 1, Ducks Unlimited Canada – 1, Eva Durance – 38, Eva Durance and Sandra Purton – 1, and Linda Durrell – 51.

**E** R. York Edwards – 1\*, P. Elliott – 9, Maurice Ellison – 18\*, Lindsay Elms – 1, Alice L. Elston – 3, Michael Elston – 1, Michael and Alice L. Elston – 2, and A. J. Erskine – 4\*.

**F** Emilee Fanjoy – 1, Emilee Fanjoy and Elaine Moore – 12, Robert Ferguson – 2, Joyce Fitz-Gibbon – 3, J. Fletcher – 1, Robert G. Footit – 1\*, L. Forbes – 1, William Forbes – 1, Michael Force – 1\*, Michael Force and Brian M. Kautesk – 1\*, Michael Force and Tom Plath – 2\*, Bruce S. Ford – 9\*, Barry Forman – 1, J. Bristol Foster – 6, Lee Foster – 24, Shawna and Chris Foster – 1, Shawna and Lee Foster – 2, M. Foubister – 1, C. D. Fowle – 18\*, David F. Fraser – 5\*, Richard Fraser – 1, B. G. Frederick – 2\*, Shaun Freeman – 2, D. Frost – 1\*, Kathleen Fry – 1\*, Kathleen Fry and M. Keith – 5, Ralph Fryer – 1\*, Lucille Funk – 3, Maureen L. Funk – 7, Maureen L. Funk, R. Wayne Campbell and Andrea R. Norris – 1, Maureen L. Funk, Claudia and Darren Copley – 1, and Richard Fyfe – 1.

**G** C. B. Garrett – 2\*, Jeff Gaskin – 17\*, Bryan R. Gates – 5\*, Tracee Geernaert – 3\*, Phil Gehlen – 1, D. V. George – 9, D. Germyn – 1, Curt Gesch – 1, L. A. Gibbard – 6, R. Gibbs – 1, Ally Gibson – 1, Caren Gibson – 1, Carlew Gibson – 1, George G. Gibson – 8, Janet Gifford – 12\*, Ryan Gill – 2, Graham E. Gillespie – 1, Cam Gillies – 12, Cam Gillies and J. M. Cooper – 47, J. Ginns – 29, W. Earl Godfrey – 2\*, Luther J. Goldman – 8, Betty and Jim Goodman – 1, J. E. Victor Goodwill – 30\*, Margaret E. Goodwill – 7\*, Margaret and J. E. Victor Goodwill – 6\*,

Hilary Gordon – 611, Hilary Gordon and Marie Bruce – 52, Hilary and Orville Gordon – 31, Hilary Gordon and Joyce Henderson – 1, Orville Gordon – 73, Carl Gough – 5, Louise Goulet – 1\*, Louise Goulet and L. Fox – 4\*, Doug Graham – 1\*, James Grant – 27\*, M. Grant and Richard R. Howie – 1, Tunie Grant – 5, Tunie Grant and Hilary Gordon – 1, W. Grant – 1, Al Grass – 3, Jude Grass – 4, J. Greenfield – 1, R. Greyell – 1, Christian Gronau – 2, Charles J. Guiguet – 40, Richard Guillet – 1, Roy Gurr – 1, Jim Gylus – 1.



*Common Raven*

**H** Roger Hadfield – 1, Penny Haering – 3, Tom Hall – 1, Joe Halstenson – 1, Daphne Hamilton – 1, J. A. Hanson – 2, Vicki Hanson – 1, Willie Haras – 13, George A. Hardy – 4\*, Lorri Harpur – 255, Margaret Harris and Al Preston – 1\*, G. and A. M. Hart – 2, M. Harwell – 1, John Hatfield – 3, Ian Hatter – 1\*, David M. Hawes – 2, R. B. Hay – 25, Wendy Hayduck – 2, W. Grant Hazelwood – 10\*, Dorothy Hearn – 1, Howard Hearn – 1, Margo Hearne – 10\*, Ralph Heinrich – 4, Joyce Henderson – 2, Joyce Henderson and Andrea Rogers – 1, Phil S. Henderson – 4, P. Hengeveld and K. Murphy – 1, Ed Hennan – 1\*, Simon Henson – 1, Nathan Hentze – 15, Herring family – 1, R. Jerry Herzig – 126, Werner Hesse – 2\*, Werner and Hilde Hesse – 9\*, Ted Hillary – 8, Stefan Himmer – 1, John Hind-Smith – 3, Mark Hobson – 1\*, Keith Hodson – 3, Martin W. Holdom – 2\*, Madge Hollington – 3\*, Jack and Madge Hollington – 1\*, Beryl Holt – 5, John Holt – 1, Tracy Hooch-Antink – 1, Gwen Hooper – 1, Mary Hooper – 1\*, Dennis Horwood – 1, Bob and Angela Houston – 1, Richard R. Howie – 16, Jared Hubbs – 2, and Donna Humphries – 2\*.



**I**Richard Ikona – 1, Doug Innes – 10, Doug Innes and Fred Busch – 1, Doug and Marian Innes – 2, Doug Innes and Bob Ranshaw – 2, Doug Innes and Frank Strong – 1, John Ireland – 2\*, and John Ireland and Dave Aldcroft – 1\*.

**J**Ross D. James – 1\*, T. G. Jamieson – 1, Pat Janzen – 51, Dale Jensen – 1, Richard S. Jerema – 5\*, Richard S. Jerema and John E. Polson – 1\*, Leo Jobin – 6\*, Fran Johnson – 1, J. Johnson and Chris Siddle – 1, W. B. Johnstone – 1\*, Steven Joly – 16, Anne M. N. Jones – 22, Gordon Jones – 1, and Jeffrey B. Joy and Kenneth G. Wright – 1.

**K**Gary W. Kaiser – 10\*, Gary W. Kaiser and Scott Webb – 3\*, Fritz Karger – 1, Brian M. Kautesk – 2\*, B. Keating – 1, Laura Keber – 1, J. Keizer – 1, J. Keizer and I. Stirling – 1\*, Ken Kennedy – 1, Frances Kermod – 2\*, Elspeth Kerr – 11\*, Frank Kime – 2, Frank Kime, Joyce Henderson and Andrea Rogers – 1, Jeremy V. Kimm – 47, Jeremy V. Kimm and M. Farmer – 1, Jeremy V. Kimm, Maureen L. Funk, Andrea R. Norris, Tanya M. Bennett – 2, Jeremy V. Kimm and Cathy Hodgson – 1, Jeremy V. Kimm and Jason Kimm – 21, Jeremy V. Kimm and Sandi Somerville – 1, Dave King – 1\*, Sandra Kinsey and Laird Law – 2, Sandra Kinsey and Mark Phinney – 1, Dick Kirby – 1, Richard W. Knapton and Bruce A. MacDonald – 1\*, Gladys and John Knezevich – 1, Ann Knowles – 2, H. Korten – 1, W. Douglas Kragh – 3\*, Nancy Krueger – 2, Dennis Kuch – 1, Peter Kucher – 1.

**L**Elsie Lafreniere – 1, Hamilton M. Laing – 17\*, David Lambie – 1, John Lambie – 6, John A Lambie – 1, John D. Lambie – 1, John A. and John D. Lambie – 1, John A., John D. and Dave Lambie – 1, John and Vi Lambie – 1, John and Vi Lambie – 48, John, Vi and Dave Lambie – 5, John, Vi and Dave Lambie and Linnea Cross-Tallman – 1, Vi Lambie – 5, Vi and Dave Lambie – 1, Ken Langelier – 1\*, E. E. Leather – 1, Martin C. Lee – 3\*, Sybil Lees – 13\*, Sybil Lees and Elspeth Kerr – 5\*, Doug Leighton – 211, Doug Leighton and Andre Weilenmann – 1, Myriam Leighton – 5, G. Lelliott – 1, Enid K. Lemon – 1, Moira Lemon – 1\*, Ernest Leupin – 21, Paul Levesque – 27, Pat Levitt – 2, Joan Linburg – 1, Kathi Linnman – 1, Eric C. Lofroth – 4\*, David Low – 1, Betty Lunam – 1, Jim and Betty Lunam – 4, Robert E. Luscher – 8\*, and Allan M. Lyon – 3\*.

**M**Bruce A. MacDonald – 17\*, E. MacDonald – 1, S. D. MacDonald – 3, Wallace MacGregor – 1\*, M. Mack – 1, Hue and Jo Ann Mackenzie – 7, Hue and Jo Ann Mackenzie, Prue and Bernie Spitman – 1\*, Jo Ann Mackenzie – 1, Rob Mackenzie – Grieve – 17\*, A. C. Mackie – 2, Alan L. MacLeod – 23\*, J. Macoun – 1, David S. K. Magnuson and Julie A. Beynon – 1, W. J. Maguire – 1\*, W. S. Maguire – 2\*, Nancy Mahony – 215, Diana V. Maloff – 22, N. J. Maloff – 1, David A. Mark – 1\*, Murray A. Mark – 3\*, K. Martin – 1,

Nancy Martin – 1, Patrick W. Martin – 2\*, Patrick W. Martin and Ian McTaggart-Cowan – 1\*, Hylda Mayfield – 52, D. McAllister and Pat Swift – 1\*, T. T. McCabe – 1\*, Peter McCallister – 1, Wayne McCrory – 1\*, A. S. McGill – 3, Barb McGrenere – 2\*, Barb and Mike McGrenere – 6\*, Mike McGrenere – 2\*, Sandy McLademan – 1, Sue McLean – 5, Bette McLennan – 1, Ed McMackin – 5, Michael McMann – 71, Martin K. McNicholl – 2, Ian McTaggart-Cowan – 20\*, Al McTavish and W. Douglas Kragh – 1, J. Medynski – 3, R. M. Mengel – 1, W. J. Merilees – 8, Arthur L. Meugens – 2\*, Susan Mewhart – 1, B. Michener – 5, Don Miller – 1, Marilyn Miller – 1, Mike Miller – 2, Mike and Stella Miller – 1, D. Milligan – 1, Alex Mills – 1\*, Catherine Minshull – 1, Gail Mitchel – 1, George J. Mitchel – 3, Erica Momeyer – 5, Guy L. Monty – 68, Elaine Moore – 6, Elaine Moore and Emilee Fanjoy – 15, Elaine Moore, Emilee Fanjoy and Diane Luchton – 1, Elaine Moore and Rita Wege – 1, C. W. Morehen – 2, Art Morgan – 13, Art and Lois Morgan – 1, Mary Morris – 1\*, Mary Morris and Brian Eccles – 1\*, Jack Morrison – 1, Norma J. Morton – 1, Norma and Keith Morton – 1\*, R. Mueller and D. A. Blood – 1, Alexander Muir – 10, Emily Müller – 16, David A. Munro – 29\*, Ian Munro – 1, James A. Munro – 499\*, James A. Munro and Ian McTaggart-Cowan – 1\*, Ken and Joanne Murcklen – 9, O. J. Murie – 37\*, and G. B. Murphy – 1.

**N**Eve Neale – 2, R. Wayne Nelson – 2\*, John Neville – 1, George Newell – 2, Fran Newson – 3, Gwen Nicol – 1, C. E. Nielson – 5, Andrea R. Norris, Maureen L. Funk and R. Wayne Campbell – 2, Andrea R. Norris, Jeremy V. Kimm, Maureen L. Funk – 2, Phil R. Nott – 2, and Mark Nyhof – 36.

**O**Derek O'Brien – 1\*, Brent Olson – 3, Stan Olson – 4, Wilfred. H. Osgood – 1\*, and Ted Osmond-Jones – 4\*.

**P**A. Pace – 2, Roger Packham – 1, Linda Page – 1, Rick Page – 1\*, Rick Page and A. Tom Bergerud – 1\*, Gail Palfreyman and Chris Atkinson – 1, Calvor Palmateer – 3\*, Mary Palmer – 1, Myrna Palmiere – 3, R. E. Park – 1\*, Mary Pastrick – 2, C. A. Patch – 2\*, C. L. Patch – 2\*, Jim Patterson – 12, Marilyn A. Paul – 1\*, W. Adrian B. Paul – 2\*, W. Adrian P Paul – 1\*, Theed Pearse – 19\*, David Pedley – 2, David and Lynn Pedley – 4, Lynn Pedley – 2, David Pehl – 3, Vi Peters – 1, Dan Peterson – 1, Brian J. Petrar – 4, Roy W. Phillips – 1\*, Mark Phinney – 25, Barbara Phipps – 1, Tom Plath – 3\*, J. Plowden-Wardlaw – 1\*, Alf Porcher – 1\*, G. Allen Poynter – 10, Helen and Allen Poynter – 1, Al Preston – 1\*, Michael I. Preston – 6, Michael I. Preston and Tanya M. Bennett – 8, Michael I. Preston and Maureen L. Funk – 2, Michael I. Preston and Jeremy V. Kimm – 5, Michael I. Preston and Andrea R. Norris – 6, Michael Price – 4\*, and Roy Prior – 5\*.

**Q** Ron Quilter – 1.

**R** Kenneth Racey – 11\*, Marilyn Rack – 1, William S. Rae – 1\*, A. L. Rand – 2\*, M. Reid – 1, Tom E. Reimchen – 7, Sheila Reynolds – 4, Diane Richardson – 7, Ralph W. Ritcey – 1, Joanna Robb – 7, Anna Roberts – 18\*, Leila G. Roberts – 38\*, Syd Roberts – 1, Ian Robertson 1, Neil Robins – 2, Robin D. Robinson and Mark Gardiner – 1, Steve H. Robinson – 5, Wilma F. Robinson – 1, Mark Robson - 1, I. Laurie Rockwell – 20, Joy A. and Michael S. Rodway – 5\*, Michael S. Rodway – 11, Gail Ross – 2\*, G. Rungren – 1, Bruce Runyan – 1, Charles E. Rushton – 4\*, George Russel – 1, J. David Routledge – 2, Glen R. Ryder – 598, and Sheila Rymer – 1.

**S** Ronald Santonocito – 2, John G. Sarles – 1, Karl Sars – 2\*, Karl Sars and S. Stewart – 1\*, Mike Sather – 6, Mike Sather and J. Donaldson – 1, Mike Sather, K. Jay and B. Smith – 1, Mike Sather and B. Smith – 1, Ron Satterfield – 91\*, Ron and Joy Satterfield – 29\*, Jack Satterly – 1, Barry Sauppe – 1, Greg Saxon – 1, Chris Schmidt – 1, Madelon A. Schouten – 1, Gregg Scott – 2, Lorraine Scott – 1, Spencer G. Sealy – 1\*, Barbara M. Sedgwick – 7, K. E. Seel – 1, Brian Self and J. Hards – 1, Jim Selk – 1, William G. Sheldon – 10, Nan Seney – 3, J. Shepard and D. A. Ross – 1, M. G. Shepard – 14\*, T. E. Shepard – 7\*, Frank M. Shillaker – 2\*, T. M. Shortt – 6, Chris Siddle – 20, Chris Siddle and Chris Charlesworth – 2, Ed Silkens – 9, Joe Silvey – 1, Fred A. Simpson – 9\*, John Sinclair – 1, George P. Sirk – 2, Glen W. Smith – 1\*, Ian D. Smith – 4\*, James N. M. Smith – 1\*, Pat Smith – 3, Daphne Solecki – 33, C. Solohub – 8, Herbert Spalding – 1, Prue and Bernie Spitman – 2, William Spreadborough – 9\*, Tine Stace-Smith – 1\*, Pam Stacey – 1\*, John Stainer – 1\*, Bill Stalker – 1, J. Stanwell-Fletcher – 2\*, H. A. Stelfox – 7\*, Andrew C. Stewart – 47, R. M. Stewart – 8\*, David Stirling – 11, G. Straley – 1, Jim and Hazel Street – 42\*, K. Stuart-Smith – 20, Dan Sturman – 2, Sherwood S. Stutz – 3, Ken R. Summers – 18\*, Harry S. Swarth – 9\*, and Harry S. Swarth and W. W. Strong – 1\*.

**T** Eric Tait – 1\*, Jeremy B. Tatum – 13\*, P. A. Tavemer – 6\*, Keith Taylor – 5\*, Keith Taylor and Jeff Gaskin – 1\*, Howard A. Telosky – 24, John S. Tener – 14, C. Thevarge – 3, Deb Thiessen and Jeff Gaskin – 1, Diana Thompson – 3\*, John Toochin – 5\*, Rick L. Toochin – 8\*, Bill Townsend – 1, Roger Tremblay - 6, William Tremblay – 1, Charlie Trotter – 2\*, Jim Tuck – 11, Doug Turnbull – 1\*, and Danny Tyson – 2\*.

**V** Jim Vallance – 1, Linda Van Damme – 1,432, D. Van den Berg – 1\*, B. Van Drimmelen – 1\*, Harry Van Oort – 5, Harry Van Oort and Ryan Gill – 1, Harry Van Oort and Mandy Kellner – 2, K. J. Van Tighem – 1\*, Victoria Natural History Society – 2\*, and Bridget and Ken Vogan - 1.

**W** Tony Wacheshen – 1, Carson Wade – 2\*, L. R. Wade – 1\*, Lynne Wade – 5\*, Roy and Margaret Wainwright – 1\*, Rueben M. Ware – 1\*, Ruth Waterfield – 12, L. Waterhouse, B. Cavers and Neil Dawe – 1, Bruce Waterton – 2, Brad Watts – 5, Syd Watts – 1, Scott Webb – 1, Robin R. Weber – 1\*, Robin W. Weber – 1\*, Wayne C. Weber – 11\*, Wayne C. Weber and Brian Self – 1\*, Robert W. Weeden – 1\*, Rita Wege – 76, Rita Wege and Larry Prossor – 1, Rita Wege and Robin Rohrmoser – 8, Jean Wellburn – 1, M. Weninger – 3, Ray M. Wershler – 1, Margaret West – 2, Rick West – 1, Yvonne Whebell – 1, Ed G. White – 3\*, S. D. Whitman – 8, Bruce Whittington – 10\*, Bruce Whittington and Alan L. MacLeod – 1\*, Douglas L. Wilkinson – 1, Eldred Williams – 8, Jack E. Williams – 5, L. R. Williams – 1, Mark Williams – 3, Murray Williams – 4, M. Y. Williams – 6\*, P. Ray Williams – 24\*, George Wilson – 2, Gwynneth Wilson – 1, Alice Windebank and Barbara Fraser – 1, Alice Windebank and Dan Stevenson – 1, John S. Wise – 1, T. W. Wollser – 1, John G. Woods – 1\*, Gwen Wright – 1\*, Kenneth G. Wright – 691, Kenneth G. Wright and Trudy A. Chatwin – 1, Mark Wynja – 1, and Mark Wynja and Kenneth G. Wright – 1.

**Y** Robin Yellowlees – 2\*, Paul York – 1\*, Bob and Francis Young – 1, C. H. Young – 3, C. J. Young – 1\*, and J. R. Young – 1.

**Z** Ellen Zimmerman – 3, Tim Zurowski – 4, Fred C. Zwickel, and research assistants (Ray Allan, Don M. Albright, Fran Backhouse, Dave Blumer, Ginny Brown, Mark A. Degner, Autumn Downey, Sue J. Hannon, Cathy Helik, Dave P. Hervieux, Jim Hines, Bob Holmes, Ian Jamieson, Rick A. Lewis, Cheryl Marion, Dave D. Maskell, Lynn Maslin, Don T. McKinnon, Joe F. Niederleitner, Marie T. Nietfeld, Deanne M. Patsula, Hilary G. Russell, Kathy E. Smith, Helen Speed, J. Brad Stelfox, Chris Thomson, Doug Torrance, Brigette Vimard, Heather J. Walker, Dennis M. Walsh and Dave J. Yablecki). – 582.

*Total contributors – 742  
(Active-524, Historical 218).*

## Requests For Information

The thirst for knowledge and demand for information about mammals, birds, reptiles, and amphibians grows each year as people become more interested and concerned about wildlife in British Columbia. The task of fulfilling these requests, which includes compiling, copying, and sending material, has almost developed into a full-time job. Due to deadlines for the final volume of "Birds of B. C." hundreds of requests from the 1,900+ that were received could not be completed. We were able to respond to about 650 of these requests.

The following diverse list is a partial summary of names, affiliation or residence, and species or topic for which information was sent.

**A** **Darren Adams** (Sooke - Brown Pelican), **Donna Albright** (Surrey - hummingbirds), **B. Alexander** (Toronto, ON - birding locations in B. C.), **Mary Allen** (Regina, SK - Burrowing Owl), **John Anderson** (New York, NY - Bobolink), **M. Anderson** (100 Mile House - Ruddy Duck), **Tim Anderson** (Port Alberni - Barred Owl), **Jerry Armstrong** (Vancouver - waterbirds around Stanley Park), and **Jim Austin** (Vanderhoof - hummingbirds).

**B** **Steve Baillie** (Nanaimo - Pacific-slope and Hammond's Flycatcher), **Patricia Banning-Lover** (West Vancouver - birds of Oyster River), **Alan Bear** (Comox - Bushtit), **Elgin Bell** (Boise, ID - Turkey Vulture), **Jim Bennett** (Prince George - Bullock's Oriole), **Maureen Bennett** (Edmonton, AB - Black-billed Magpie), **Stephen Bennett** (Castlegar - NE warblers), **John Black** (Campbell River - Red-necked Grebe), **George Best** (Calgary, AB - Snowy Owl), **Barry Booth** (Canadian Nature Federation, Delta - Important Bird Areas in B. C.), **Don Bradley** (Fort Nelson - bison), **Charles A. E. Brandt** (Black Creek - blackbirds and wetlands), **Daphne Brooks** (Seattle, WA - gray squirrel), **Murray Brown** (Langley - White-tailed Kite), **Dr. Fred Bunnell** (Center for Conservation Biology, UBC - Yellow-bellied, Red-naped, and Williamson's Sapsucker, Lewis's, Black-backed, Three-toed, and White-headed Woodpecker, Boreal, Mountain, and Chestnut-backed Chickadee, and Red-breasted and Pygmy Nuthatch), **Don Burbidge** (Princeton - Harlequin Duck), **Marion Butler** (Chilliwack - swallows), **Beverly Butcher** (Williams Lake - Tree Swallow), and **Andreas Buttimer** (Vancouver - locations for select interior birds).

**C** **David Campbell** (Duncan - Say's Phoebe), **Barry Campbell** (Penticton - American White Pelican), **Neil Campbell** (Smithers - Osprey), **Richard J. Cannings** (Naramata - Yellow-breasted Chat), **Harry R. Carter** (U.S. Geological Survey, CA - Common Murre), **William Clarke** (Spokane, WA - Sky Lark), **George Clulow** (Vancouver Natural History Society - Mourning Warbler, and WBT Wild Bird Trust of B.C.-Important Bird Areas in B. C.), **June Cochrane** (Moberly Lake - American Robin), **Jennifer Collard** (Quesnel - "Yellow-shafted" & "Red-shafted" flickers), **Stuart Collins** (Ottawa, ON - pelagic birds), and **John M. Cooper** (Sidney - select passerine species for *Birds of B. C.*, Volume 4).

**D** **Brent Daly** (New Westminster - Double-crested Cormorant), **Gary S. Davidson** (Nakusp - Swamp Sparrow and Q.C.I. birds), **Marie Davidson** (Surrey - Steller's Jay), **Glen Davies** (Prince George - Snow Bunting), **Lorne Davis** (Vancouver - Crested Myna), **Neil K. Dawe** (Canadian Wildlife Service, Qualicum Beach - passerine species for *Birds of B. C.*, Volume 4), **Margaret Dawson** (Vancouver - House Finch), **Bev Day** (Delta - Red-tailed Hawk), **Eileen Dickson** (Vancouver - Mute Swan), **F. Dobson** (Abbotsford - Trumpeter Swan), **Brian Douglas** (Powell River - Barred Owl), and **Valerie Dunn** (Williams Lake - warblers).

**E** **Joe Easingwood** (C-FAX Radio, Victoria - bird migration), **Barry Edwards** (Toronto, ON - birding places in B. C.), **F. Edwards** (Port Hardy - Bald Eagle), **Joan Elliott** (Victoria - hummingbirds), **Peter Elliott** (Vancouver - Spotted Owl), **Don Ellis** (Victoria - swallows), **Patrick Ellison** (Surrey - Peregrine Falcon), **Robert Erickson** (Prince George - hawks), and **John Evans** (Fort Collins, CO - Crested Myna).

**F** **Barbara Fast** (White-Rock - Bald Eagle), **Robert Ferguson** (Golden - Barn Owl), **Cam Finlay** (Victoria - Varied Thrush), **Maureen Fisher** (North Vancouver - Northern Pygmy-Owl), **W. Fitzpatrick** (Vancouver - Mute Swan), **Betty Fletcher** (West Vancouver - Steller's Jay), **Bill Forbes** (Chilliwack - Trumpeter Swan), **Aileen Foster** (Prince George - owls), **Sandra Fouts** (Richmond - Barn Owl), **David Fraser** (B.C. Ministry of Environment, Lands and Parks, Victoria-Caspian Tern and Spotted Owl), **Rita Fraser** (Prince George - Spotted Owl), and **Laura Friis** (B.C. Ministry Environment, Lands and Parks, Victoria - Western Grebe and Sandhill Crane).

**G** **Helen Gage** (Vancouver - endangered B.C. birds), **Bob Gammer** (Creston Valley Wildlife Authority - wetland birds), **Bob Gardner** (Surrey - hummingbirds), **Martin Gebauer** (Enviro-Pacific Consulting, Vancouver - American Avocet), **Wayne Gibbs** (Victoria - American Coot), **Nicole Gibson** (North Vancouver - Northern Pygmy-Owl), **Barbara Gillispie** (Langley - hummingbirds), **Janice Gordon** (Whistler - Gray Jay), **Max Gotz** (Whistler - birds of Alta and Green lakes, Whistler), **Margaret Grant** (Delta - Barn Owl), and **Bonnie Gray** (Vancouver - feeding hummingbirds).

**H** **Ken Haddad** (New Westminster - Black-capped Chickadee), **Bruce Hall** (Nanaimo - Bald Eagle & sea lions), **Larry Halverson** (Parks Canada, Radium - Osprey), **George Hardy** (Tsawwassen - Great Blue Heron), **Linda Harris** (Vancouver - seagulls), **Ralph Harrison** (Madison, WI - Lewis's Woodpecker), **Lorri Harpur** (Rock Creek - waterfowl, Northern Goshawk, Black-capped Vireo, and Golden-cheeked Warbler), **Lex Hedley** (Vancouver - passerines in peril in B.C.), **Charles Helm** (Tumbler Ridge - records of birds for Tumbler Ridge area), **Jean Henderson** (Saanich - hummingbirds), **Jerry Herzig** (Princeton - records of birds for Princeton area), **John Henderson** (Prince Rupert - Snowy Owl), **Nathan Hentze** (Cumberland - B.C. bird research), **Jim Hobson** (Prince George - Golden Eagle), **Darren Howell** (Arcata, CA - Blue-gray Gnatcatcher), and **Rick Howie** (B.C. Ministry of Environment, Lands and Parks, Kamloops - Whooper Swan, Ring-billed Gull, Western Meadowlark, riparian black cottonwood species).

**I** **R. Inglis** (Vancouver - hummingbirds), **Doug Innes** (Courtenay - Barn Owl), **D. Irvine** (Vernon - Great Blue Heron), and **Bob Irwin** (Everett, WA - Xantus's Hummingbird).

**J** **Howard Jackson** (Victoria - gulls), **Earl James** (Nanaimo - bluebirds), **Betty Jamieson** (Vanderhoof - Calliope Hummingbird), **Pat Janzen** (Clinton - Common Snipe), **Dr. Joseph R. Jehl** (Hubbs-Sea World Research Institute, San Diego, CA - Short-billed and Long-billed Dowitcher), **Daphne Jenkins** (Prince George - Bohemian Waxwings), **Richard Johnson** (Delta - Bald Eagle), **Gail Jones** (North Vancouver - Turkey Vulture), and **Jeff Joy** (B. C. Ministry of Forests - Red-breasted Sapsucker).

**K** **Gerry Keith** (Hope - Bald Eagle), **Ruth Kennedy** (Williams Lake - birds hitting windows), **Jack Kenneth** (Langley - Bushtit), **Brina Kessel** (University of Alaska, Fairbanks - Gray Jay), **Jack Kinnis** (Prince George - warblers), **Martin Klassen** (Los Angeles, CA - bird atlases), **Diana Klinger** (Vancouver - Peregrine Falcon), **Brenda King** (Vancouver - hummingbirds), **B. Knight** (Quesnel - swallows), and **John Knowles** (Whistler - jays).

**L** **Marilyn Lambert** (Victoria - seabirds), **Vi Lambie** (Mackenzie - Four-letter bird codes), **Jim Lane** (Cranbrook - Osprey), **Ross Lawrence** (Castlegar - Osprey), **W. Lawson** (Burnaby - marsh birds), **Don Lee** (Vancouver - Canada Goose), **Enid Lemon** (Victoria - Least Tern), **Allan Lester** (Burnaby - Great Blue Heron), **William Lewis** (Kamloops - Yellow-headed Blackbird), **R. Lincoln** (Merritt - Common Raven), **B. Little** (Kamloops - swans), **Bill Low** (Sidney - hummingbirds), and **Betty Lunam** (Courtenay - Osprey).



*Red-tailed Hawk*

**M** **Scott A. MacDougall-Shackleton** (Princeton University, NJ - Gray-crowned Rosy-Finch), **Craig Machtans** (Canadian Wildlife Service, Yellowknife, YT - Connecticut Warbler), **Lisa Mackie** (Quesnel - swallows), **Derrick Marven** (Duncan - Northern Goshawk), **Lynn MacPherson** (Prince George - Winter Wren), **Dave McCallister** (Ministry Environment, Lands and Parks, Vanderhoof - nesting birds in B. C.), **Ian McCallister** (Bella Bella - Ovenbird), **Dwight McCulloch** (Canadian Wildlife Service, Delta - Western Grebe, Great Blue Heron, Long-billed Curlew, Long-billed Dowitcher, Spotted Owl, White-headed Woodpecker, Sage Thrasher), **Scott McDougal-Shackleton** (University of Toronto - Gray-crowned Rosy-Finch), **Ron McLaughlin** (MacMillan Bloedel Ltd., Nanaimo - B.C. Blue Grouse, raptors, Common Raven), **Ian McTaggart-Cowan** (Victoria - select passerine species for *Birds of B.C.*, Volume 4), **Bruce McWilliams** (Kelowna - American Avocet), **William J. Merilees** (Nanaimo - Pacific-slope Flycatcher, and Blue-headed and Cassin's vireo), **George Mervin** (Vancouver - American White Pelican and Caspian Tern), **Dianne Mitchell** (Courtenay - owls), and **Kathleen Moore** (Cranbrook - Williamson's Sapsucker).

**N** **Carl Nielsen** (Tacoma, WA - Sage Thrasher), **D. Neilson** (Edmonton, AB - Snowy Owl), **Audrey Nelson** (Surrey - endangered birds), **Brian Nelson** (Seattle, WA - Xantus's Hummingbird), **Keith Newman** (Prince George - owls), **Mark Newton** (Boston Bar - Golden Eagle), **Pat Nicholls** (Los Angeles, CA - Xantus's Hummingbird), **Jean Nobel** (Quesnel - Common Loon), **Gene Norman** (San Diego, CA - Xantus's Hummingbird), **Andrea Norris** (Victoria - Bushtit, Bewick's Wren), and **Mary North** (Coquitlam - bird songs).

**O** **John O'Connor** (Victoria - American Dipper), **Rick Olson** (Kamloops - vultures), **Sean O'Neill** (Delta - Barn Owl), **Joanne Outerbridge** (Shangri-la, Victoria - Hooded Merganser, Green Heron, hummingbirds), and **Phyllis Owen** (Prince George - Spotted Owl).

**P** **Joe Pacsay** (Nicholson - Harris's Sparrow), **P. Dick Palmer** (Vanderhoof - forest birds), **Lorne Parsons** (Port Alberni - Brown Pelican), **Walt Patterson** (Port Hardy - Mallard), **Mary Pearce** (North Vancouver - swallows), **Myrna Pearman** (NatureScape, Red Deer, AB - Ruby-throated Hummingbird), **Carol Peters** (Pitt Meadows - Sandhill Crane), **Marion Peterson** (100 Mile House - Black Tern), **Carol Pettigrew** (Bird Emergency and Kare Society, Blueberry Creek - bird counts and population trends for south-central B.C.), **Mark Phinney** (Dawson Creek - Pine Pass birds), **Sylvia Pincott** (Abbotsford - Horned Lark), **Rosamond Pojar** (Smithers - Clark's Nutcracker), **Douglas Pollard** (Seattle, WA - Bewick's Wren), **Marilyn Powell** (Edmonton, AB - Snowy Owl), **Michael Preston** (Calgary - B.C. Nest Record Scheme, Common Raven), **H. Pratt** (Vancouver - Purple Martin), and **Rick Price** (Maple Ridge - Blue Jay).

**R** **Nina Raginsky** (Saltspring Island - waterbirds of Georgia Basin), **Gladys Ramsay** (Vancouver - B.C. Nest Record Scheme), **Stan Reid** (Penticton - Peregrine Falcon), **Tom Reimchen** (University of Victoria - seabirds), **Doris Reynolds** (Vancouver - Anna's Hummingbird), **Joyce Richards** (Summerland - loons), **John Richardson** (Campbell River - Bonaparte's Gull), **Dorothy Roberts** (Revelstoke - winter bird-feeding), **William Roberts** (Kamloops - Spotted Owl), **Ian Robertson** (Robertson Environmental Services Ltd., Langley - Hutton's Vireo, NE B.C. bird records), **Terry Robinson** (Prince George - Barred Owl), **Ruth Robinson** (Dawson Creek - Blue Jay), **Mike Rogers** (Osoyoos - Northern Mockingbird), **Virginia Rogers** (Nanaimo - hummingbirds), **Fred Ross** (Trail - bluebirds), **Dr. Ron Ryder** (Colorado State University, Fort Collins - Cattle Egret, *Birds of British Columbia - Volume 3*), **Judy Russell** (Maple Ridge - bird feeders) and **Patricia Rutherford** (New York NY - Scissor-tailed Flycatcher).

**S** **Bill Saunders** (Vernon - Great Blue Heron), **Madelon Schouten** (Princeton - rare vertebrates in B.C.), **Barry Scott** (Fraser Lake - gulls), **W. Seaton** (Los Angeles, CA - bird atlases), **Nan Seney** (Powell River - Barn and Barred Owl), **Al Sharp** (Delta - swans), **Lynn Short** (Delta - owls), **Chris Siddle** (Vernon - Hoary and Common Redpoll and Baltimore and Bullock's Oriole), **Ed Silkens** (Campbell River - Bushtit), **Robert Sinclair** (Regina, SK - Ferruginous Hawk), **Margaret Singleton** (Hazelton - B.C. Nest Record Scheme), **Bonnie Smith** (Smithers - B.C. Nest Record Scheme), **Mary Springer** (University of Victoria - Brown Pelican), **Jamie Stephen** (B.C. Ministry of Environment, Lands and Parks, Duncan - Red-tailed Hawk, Bald Eagle, Peregrine Falcon, Blue Grouse, and Great Horned Owl), **Tom Stevens** (Toronto, ON - Western & Mountain bluebirds), **Jason Stirling** (Surrey - Green Heron), and **Darren Swann** (Prince Rupert - Eurasian Wigeon).

**T** **Daphne Taylor** (Port Hardy - Western Screech-Owl), **Linda Taylor** (Surrey - B.C. Nest Record Scheme), **Peter Taylor** (Tofino - owls), **John Theberge** (University of Waterloo, ON - Common Grackle), **Lorraine Thomas** (Vancouver - endangered birds), **Elizabeth Thompson** (Abbotsford - Trumpeter Swan), **Ann Thornton** (Surrey - Bald Eagle), **Graham Turnbull** (B.C. Ministry of Environment, Lands and Parks, Nanaimo - Bald Eagle), and **Jim Turner** (Delta - falcons).

**V** **Linda Van Damme** (Nelson - Redhead, Bufflehead, Long-billed Curlew, Common Snipe, Great Horned Owl, Western Kingbird, Black-throated Sparrow, Harris's Sparrow, Brambling), **Hank Vander Pol** (Victoria-albinism in hummingbirds), and **W. Vickers** (Vancouver - Common Raven).



*Bufflehead*

**W****Terry Wahl** (Bellingham, WA - Washington state bird records), **Ron Walker** (Christina Lake - House Finch), **Nicole Wallace** (Sidney - waterbirds and seabirds), **Ken Walton** (Toronto, ON - B.C. checklists), **B. Webb** (Vancouver - birds at risk in Vancouver), **George Weber** (Fort St. John - Common Grackle), **Wayne C. Weber** (B.C. Ministry of Environment, Kamloops - Whooper Swan, BCNRS annual report, Birds of Dawson Creek), **Rita Wege** (Nelson - Osprey), **Ralph Wells** (Cranbrook - Merlin, Boreal Owl & Williamson's Sapsucker), **Nathaniel T. Wheelwright** (Bowdoin College, ME - Savannah Sparrow), **Howard White** (Seattle, WA - Ancient Murrelet), **Brenda Williams** (Tacoma, WA - Yellow-breasted Chat), **Bruce Williams** (Pedder Bay - Belted Kingfisher), **Jan Williams** (Kelowna - Bullock's Oriole), **John Williston** (Whistler - Blue Jay), **Ken Wilson** (Fort St. John - B.C. Nest Record Scheme), **David White** (Cranbrook - Red-necked Grebe), **Charles Wilson** (Fort Nelson - Gray Jay), **Bill Wong** (Vancouver - birds and oil spills), **Dr. John G. Woods** (Parks Canada, Revelstoke - Common Yellowthroat), and **Kenneth Wright** (West Vancouver - Harlequin Duck, Cariboo "Junction" bird records).

**Y****Dorothy Young** (Canal Flats - Pileated Woodpecker).

**Z****Fred Zwickel** (Cortes Island - Blue Grouse).



*Blue Grouse  
(Female and chick)*

## Sample Request For Data

An important function of the BCNRS is to provide long-term information on the nesting biology, distribution, monitoring, habitat requirements, and productivity for birds breeding in the province. This allows analysis of data provincially or regionally over time. Frequently, biologists need provincial summaries to help plan their research.

Dr. Fred Bunnell, professor in the Faculty of Forestry at the University of B. C., was interested in the use of dead and live trees for nesting birds in B.C. The table below summarizes this information for 1,311 nests for 10 species of cavity-nesting birds.

Species	Nests	#Live Tree	%Live Tree	# Dead Tree	%Dead Tree
Lewis's Woodpecker	255	120	47.0	135	53.0
Yellow-bellied Sapsucker	57	32	56.1	25	43.9
Three-toed Woodpecker	129	69	53.5	60	46.5
Black-backed Woodpecker	32	20	62.5	12	37.5
Mountain Chickadee	192	83	43.2	109	56.8
Chestnut-backed Chickadee	126	51	40.4	75	59.6
Boreal Chickadee	22	11	50.0	11	50.0
Red-breasted Nuthatch	229	83	36.2	146	63.8
Pygmy Nuthatch	230	70	30.4	160	69.6

The results show that some species such as the **Boreal Chickadee** show little preference for a dead or live tree in which to nest but others like the **Black-backed Woodpecker** prefers live trees while weak excavators like the **Pygmy Nuthatch** prefer dead trees.

The general summary above emphasizes the potential of the BCNRS and its importance to the conservation and management of birds in the province.

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## Recent Publications and Reports

Information from WBT data bases were used recently in the following scientific papers, books, reports, articles, and theses.

- Beauchamp, W.D., F. Cooke, C. Lougheed, and L.W. Lougheed. 1999. *Seasonal Movements of Marbled Murrelets: Evidence From Banded Birds*. Condor 101:671-674.
- Brennan, L.A. 1999. *Northern Bobwhite (Colinus virginianus)*. In The Birds of North America, No. 397 (A. Poole and F. Gill, editors). The Birds of North America, Inc., Philadelphia, PA. 28 pages.
- Bunnell, Fred L., Elke Wind, and Ralph Wells. 1999. *Dying and Dead Hardwoods and Their Implications to Management*. Paper presented at the Ecology and Management of Dead Woods in Western Forests Symposium, 1999 November 2-4, Reno, NV.
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- Burness, G.P., K. Lefevre, and C.T. Collins. 1999. *Elegant Tern (Sterna elegans)*. In The Birds of North America, No. 404 (A. Poole and F. Gill, editors). The Birds of North America, Inc., Philadelphia, PA. 28 pages.
- Campbell, R. Wayne. 1999. *The Avocet's Tale*. Marshnotes Winter 1999:11.
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- Campbell, R. Wayne, Maureen L Funk, Lyndis Davis and Jeremy V. Kimm. 1999. *British Columbia Nest Records Scheme: 44th Annual Report - 1998 Nesting Season*. WBT Wild Bird Trust of British Columbia Wildlife Report No. 5, West Vancouver. 24 pages.
- Cannings, Richard. J. 1998. *The Birds of British Columbia: A Taxonomic Catalogue*. British Columbia Ministry of Environment, Lands and Parks Wildlife Bulletin No. B-86, Victoria. 243 pages.
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- Ewins, P.J. and D.V. Weseloh. 1999. *Little Gull (Larus minutus)*. In The Birds of North America, No. 428 (A. Poole and F. Gill, editors). The Birds of North America, Inc., Philadelphia, Pa. 20 pages.
- Garrison, B.A. 1999. *Bank Swallow (Riparia riparia)*. In The Birds of North America, No. 414 (A. Poole and F. Gill, editors). The Birds of North America, Inc., Philadelphia, PA. 28 pages.
- Gotz, B. Max. 1999. *Shadows of Whistler: Kenneth R. Racey and Friends in Alta Lake*. Pique 6.07:14-18.
- Hartwig, Carol L. 1999. *Effect of Forest Age, Structural Elements and Prey Density on the Relative Abundance of Pileated Woodpecker (Dryocopus pileatus abieticola) on South Eastern Vancouver Island*. M. Sc. Thesis, University of Victoria, Victoria, British Columbia. 162 pages.
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- Johnson, Donald R. 1999. *Ospreys Incubate Goose Egg to Hatching*. Journal of Raptor Research 33:176.
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- Machtans, Craig S. *Extra-limital Observations of Broad-winged Hawk, Connecticut Warbler and Other Bird Observations from the Liard Valley, Northwest Territories*. Submitted to Canadian Field-Naturalist.
- Marin, Manuel. 1999. *Food, Foraging, and Timing of Breeding of the Black Swift in California*. Wilson Bulletin 111:30-37.
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- Muller, M.J. and R.W. Storer. 1999. *Pied-billed Grebe (Podilymbus podiceps)*. In The Birds of North America, No. 410 (A. Poole and F. Gill, editors). The Birds of North America, Inc., Philadelphia, PA. 32 pages.
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- Schroeder, M.A., J.R. Young, and C.E. Braun. 1999. *Sage Grouse (Centrocercus urophasianus)*. In The Birds of North America, No. 425 (A. Poole and F. Gill, editors). The Birds of North America, Inc., Philadelphia, PA. 28 pages.
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*Long-eared Owl*



## RARE AND SENSITIVE SPECIES

We received 18 requests for specific information on the breeding location of rare and sensitive species, mainly from bird listers and photographers. Species most desired included White-headed Woodpecker, Great Gray Owl, Yellow-breasted Chat, Broad-winged Hawk, Sage Thrasher, Boreal Owl, Black Swift, Rock Ptarmigan, Northern Goshawk, Northern Hawk Owl, and Flammulated Owl.

To maintain the trust and confidence of private landowners, conservation organizations, professional biologists, concerned naturalists, and BCNRS participants, all such requests are kept confidential. However, a person making a serious study of a rare species may, with approval, be allowed access to the relevant information.

## FIELD TIPS AND TECHNIQUES

### Woodpecker Cavities - Active or Not?

Finding woodpecker nest sites when they have young is a snap because you can often hear the buzzing nestlings or spot adults carrying food. But what about active nests early in the season when adults are on eggs?

Each time a woodpecker returns to its nest tree, it lands on the trunk and works its way toward the nest hole. Just before it enters, the bird props itself out from the trunk using stiff tail feathers. Over a period of time, a small worn spot develops below the entrance indicating current use of the nest site. Of course, the "tail spot" is best seen on the smooth bark of deciduous trees such as trembling aspen.

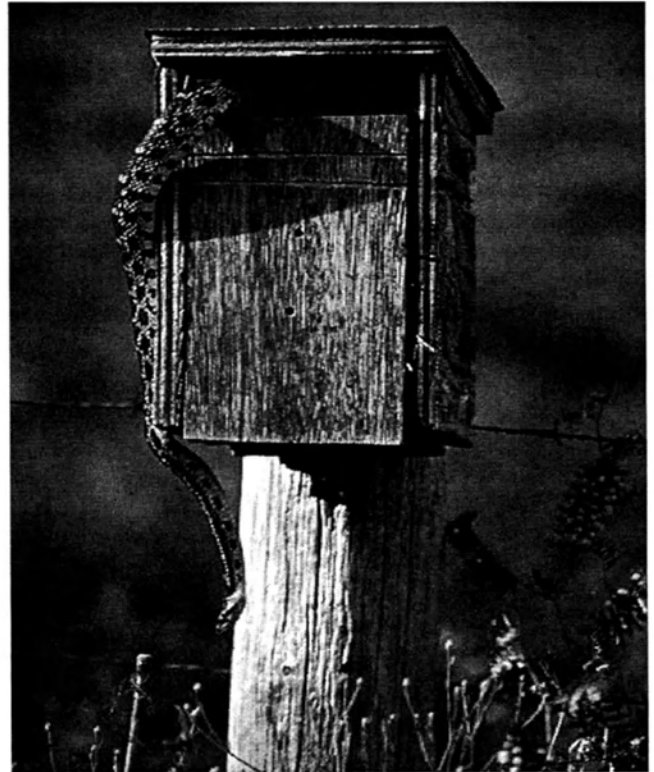
### Swooping for Poorwills

As any nest-finder will attest, finding **Common Poorwill** nests is the ultimate challenge. If you are lucky, after hours of walking and searching, an adult may be flushed from the ground. If the nest contains eggs you can spot them easily because they are pure white. If you can't see eggs, stop and immediately drop a hat or something visible and then carefully begin your search for the camouflaged chicks. Don't search too far from where you stopped as the adult will try to lure you into the hinterlands.

To cover more area when searching potential breeding grounds, **Mark Nyhof** combs the area with a long stick. In one complete circle he can cover an area about 25 feet. Most of us will have to work harder as the distances we can cover will be less - Mark is 6'6" tall!!

## Snakes and Nest Boxes - a Caution

Where do you stand when checking bluebird nest boxes? After **Linda Van Damme** saw a snake enter a **Western Bluebird** box and come out bulging an hour later with 2 large nestlings, she decided that from now on, in the dry southern interior where **rattlesnakes** and **gopher snakes** live, she would cautiously stand away from the opening when checking a nest box. Who knows if tapping on the box would interrupt the snake's meal and cause it to flee. Imagine the heart stopping surprise if you were to flip the front and have this 4 ½ foot gopher snake feeling threatened!



*Gopher Snake*

### Old Oriole Nests

The best time of year to search for **oriole** nests is in late autumn and winter when leaves are off the trees. The hanging pouches, attached to drooping branches at their rim, are easily spotted. Since orioles usually return to the same site to nest each summer you can mark the location of the nests and follow up the following summer to record their activity. Some nest-finders have actually mapped the nest locations and determined the density of populations locally. The record for number of nests in a single tree (black cottonwood) and consecutive nesting by a known individual is **six years**. Fortunately, an abnormality in the male's plumage allowed the bird to be identified.

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## Checking Bushtit Nests

**Alan Bear** wrote asking if it was permissible to remove an abandoned **Bushtit** nest to check for contents. Legally it isn't, but the nest can easily be checked by slowly elevating the bottom of the nest and gently checking for eggs or young with a finger through the opening at the top. The nest should then be lowered slowly to its original position. Most species do not reuse nests the following year but we have several instances in our files that suggest some **Bushtits** remodel old nests and use them the following year.

### FROM THE SCIENTIFIC LITERATURE

#### Canada Goose Eggs in Osprey Nests

Use of the same nest by Canada Geese and Ospreys is a fairly common occurrence now in parts of south-central British Columbia. Egg-laying in late-nesting Canada Geese can be interrupted by Ospreys returning to their favourite nest sites. In northern Idaho, Don Johnson speculated that a goose was scared off before egg-laying could be completed. The pair of Osprey then built their nest and when the first egg was laid, several weeks later, began incubating both eggs. When the mixed clutch was discovered on June 1, the Canada Goose egg was already pipped!!

*Journal of Raptor Research 1999, 33(2):176.*

#### Sharp-shinned and Cooper's Hawk Nesting Habitat

In a recent study in Wisconsin, Dale R. Trexel et al. looked at differences in the preferred nesting habitats of Sharp-shinned and Cooper's Hawks. Cooper's Hawks were found to nest in stands of trees that contained a lower density of larger trees than its counterpart. Cooper's Hawks also preferred a larger proportion of hardwood cover than the Sharp-shinned.

*Wilson Bulletin 1999, 111(1): 7-14*

#### Breeding Birds and Cattle

Cattle grazing and breeding birds have long been enemies, but a new study suggests that the two can coexist peacefully. Stanley A. Temple et al. recently looked at different methods of pasture management in an effort to find a compromise between ranchers and birds. It was found that a 1:2 ratio of ungrazed grassland to rotationally grazed pasture would, if maintained, produce more nesting birds than any other system, including mown hayfields.

*Studies in Avian Biology 1999, (19): 196-202*

## Nesting Trumpeter Swans and Differing Quality of Foods

Introducing birds into new regions to enhance historical populations requires a lot of research and planning. Paul Henson and James Cooper looked at the incubation behaviour of swans in natural habitats in Alaska with those introduced into former habitats in Montana, Idaho, and Wyoming. Alaskan swans fed on emergent plants whereas Tristate birds fed on submerged plants that required more search and handling time. They concluded that the difference in quality of food resulted in lower incubation constancy for birds south of Alaska.

*Journal of Wildlife Management 1993, 57(4):709-716.*

#### Red-naped Sapsuckers Nest Higher Each Year

Red-naped Sapsuckers, among other woodpeckers, frequently nest year after year in the same stand of trees, and even in the same tree. Research has suggested that Red-naped Sapsuckers move higher up in the same nesting tree in successive breeding seasons. This is thought to be because heartwood decay, which turns a healthy tree into a prime sapsucker nesting tree, spreads from the lower reaches of a tree's trunk upward. It is also believed that the heartwood decay tapers as the tree does, and at lower heights, where the trunk is wider, the sapsuckers are more likely to find adequately extensive decay to accommodate nesting cavities.

*Wilson Bulletin 1993, 105(4): 674-679*

#### Lessening Disturbance to Colonial Waterbirds

In addition to birders, colonial waterbirds, many with loud calls, displays, and overall activity attract many non-birders to view them. There is a concern, however, of nests or colonies being abandoned as a result of human intrusion by birders and non-birders alike. In order to lessen the impact of human intrusion on waterbird colonies, "buffer zones" must be put into place which range anywhere from 10-600m, species-dependant. These buffers allow humans to observe the birds while having a minimal impact on the breeding biology or success of these birds. It is strongly recommended that colonies not be entered.

*Waterbirds 1999, 22(1): 68-79*

## Northern Flickers Lose Out to European Starlings Despite Boxes

Northern Flickers are frequently the target of nest-stealing European Starlings. Danny J. Ingold conducted a study in Ohio to determine whether the addition of nest boxes nearby would ease the burden on the flickers by attracting the starlings to them. European Starlings, however, showed a strong preference for the real thing, with only 3 out of 40 pairs opting for a nest box when an excavated cavity was in the area. This left Northern Flickers to excavate new cavities and greatly hampered breeding success.

*Wilson Bulletin 1998, 110(2): 218-225*

## Double-nesting by Ring-billed Gulls in Michigan

Although occurring many years ago, this record is of enough interest to include here. The author, W.E. Southern, observed in 1975 two Ring-billed Gull nests in a colony that were unusually close to each other. On closer inspection, it was found that the two nests shared a common side between them, and the adults sitting on the nests, which contained 2 and 4 eggs, showed no aggressive territorial behaviour toward each other. In fact, the two equally contributed to the defense of the territory. The birds were colour marked and observed to be the same two all of the time. Eventually the nest which held two eggs was abandoned, and the material was incorporated into the other nest. The two birds then took equal duties caring for the four young that subsequently hatched from the surviving nest. Could it be a pair that was incubating two nests at once? As the birds were never sexed, we'll never know.

*Wilson Bulletin 1978, 90(2):299-301*

## Breeding Bird Survey Data Used to Determine Trends

In a recent study, Bruce G. Peterjohn and John R. Sauer used data from the North American Breeding Bird Survey (BBS) to determine population trends for 25 species of grassland birds between 1966 and 1996. The study found 13 species to have significantly declined, while only 3 showed significant increases in populations. The others showed no change of significance. Among the species found to have declined were a number that breed in British Columbia, including Ring-necked Pheasant, Horned Lark, Vesper Sparrow, Grasshopper Sparrow, Bobolink, and Western Meadowlark. The only British Columbia species to experience a significant population increase was the Ferruginous Hawk.

*Studies in Avian Biology 1999, (19): 27-44*

## Depredation of Duck Nests

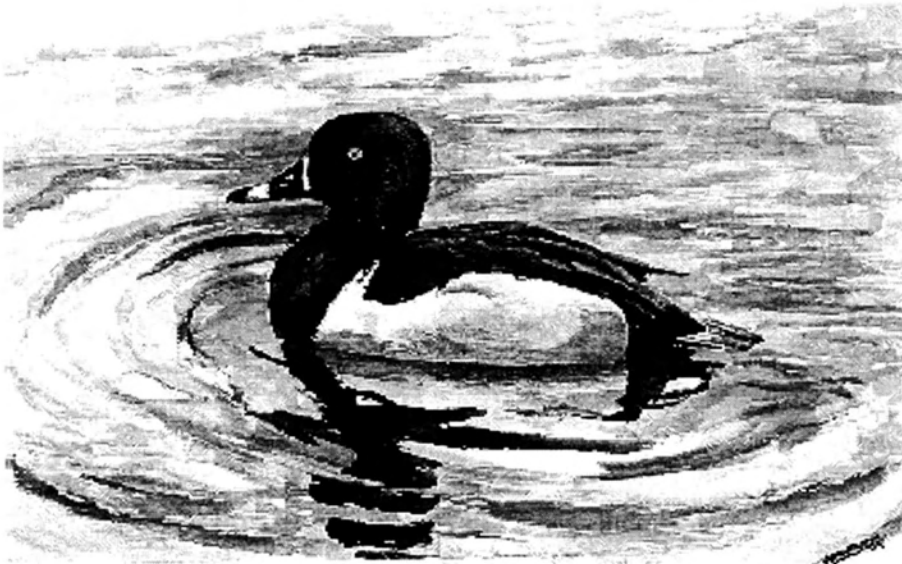
Predation among nests visited is a large concern among BCNRS participants. Using artificial duck nests to conduct research on nesting success, researchers in Yukon Flats National Wildlife Refuge in Alaska discovered that duck nests visited more often were by a large margin the most heavily depredated. Of nests visited every day, 100% suffered losses to predators, while only 35-45% of nests visited every 7-28 days were affected.

*Journal of Wildlife Management 1993, 57(2):244-248*

## Pileated Woodpecker Nesting Habitat

Pileated Woodpeckers have long been used as general indicators for the health of old-growth forests. A more detailed look was taken at nesting and roosting trees used by this species in Montana, where it was found that the Pileated Woodpecker prefers old growth forest that is predominately western larch. Heartwood decay, which becomes more prevalent as a forest matures, is also a key characteristic of trees supporting nesting woodpeckers. In addition, snags, logs, and the presence of carpenter ants also play a role in creating "healthy" nesting habitat for Pileated Woodpeckers.

*Wildlife Society Bulletin 1999, 27(3):846-857*



*Ring-necked Duck*

## APPENDICES

### Appendix 1. Plumage Development of Young Waterfowl

In the spring of 1997, the first B.C. Nest Record Scheme manual was issued by the WBT Wild Bird Trust of British Columbia, along with participating partners, as WBT Wildlife Report No. 1. An important omission in that manual was the inclusion of plumage changes of waterfowl developed by J. B. Gollop and W. H. Marshall in their 1954 publication *A Guide for Aging Duck Broods in the Field*. This information, when recorded on nest cards, is very useful in determining breeding chronology and mortality figures as the young pass from the downy stage to the flight stage. Brood ages are recorded at three stages of growth as follows:

**CLASS I** – (Levels A, B and C) – downy stage that covers the period from hatching to the time body feathers begin to appear among the down. It usually lasts about three weeks.

**CLASS II** – (Levels A, B and C) – this stage, from about the fourth week through the sixth week, covers the period when the body feathers gradually replace all of the down plumage.

**CLASS III** – (Single Level) – this stage of development, which lasts for about 10 days, includes the period when the young appear fully-feathered just before their first flight.

Information for each brood can simply be recorded on each nest card as I-A, I-C, II-B, III, etc. The drawings, which have been modified from F. C. Bellrose's *Ducks, Geese and Swans of North America*, should be used as the reference.



*Class I A, young are down-covered;  
1-7 days of age*



*Class I B, young down-covered,  
but color fading;  
8-13 days of age*



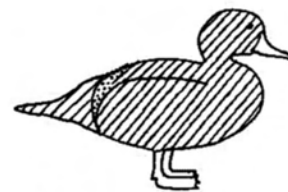
*Class I C, young down-covered, but color faded,  
body elongated;  
14-18 days of age*



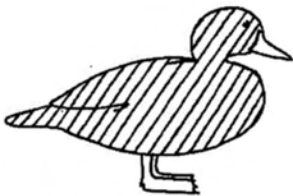
*Class II A, first feathers appear,  
replacing down on sides and tail;  
19-27 days of age*



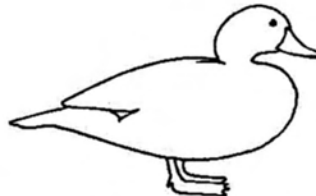
*Class II B, over half of body covered with feathers;  
28-36 days of age*



*Class II C, small amount of down remains,  
among feathers of back;  
37-42 days of age*



*Class III, fully feathered but incapable of flight;  
45-55 days of age, flying at 56-60 days*



*Adult Dabbling Duck*

## Appendix 2. Guide to Timing of Visits to Nests of Passerine (Song) Birds.

Contents of Nest when found or last visited	Next visit should be	Notes needed at next visit
Nest under construction	2-4 days later, to determine laying schedule.	No. of eggs, warm or cold; parent at nest or not.
1-3 eggs	3-5 days later, to confirm completion of clutch.	No. of eggs, warm or cold; parent at nest or not.
4-7 eggs	3-5 days later, to check clutch size.	No. of eggs, warm or cold; parent at nest or not.
Eggs and newly hatched young.	6-8 days later, to check survival of young.	Number, size, and degree of feathering on young.
Young, naked or downy	5-7 days later, to check survival of young.	Number, size, and degree of feathering on young.
Young, pin-feathered	3-5 days later, to check survival of young.	Number, size, and degree of feathering on young.
Young, mostly feathered	2-4 days later, to check on fledging.	Number, and flying ability of young.
Young which fly when approached.	7-10 days later, to check on reuse of nest.	

### Evidence of Failure

(if nest contained eggs or live young at an earlier visit)

Evidence of failure	Notes needed
Broken eggs	Evidence of predator (tracks, droppings, condition of nest)
Dead young, in or near nest	Evidence for desertion (young unharmed), Or predation (young injured, predator sign)

**\*NOTE\*** Most passerines have a clutch of 4-7 eggs, laid at daily intervals; incubation periods of up to 12-15 days; nestling periods of 11-19 days (open nesters near lower figures, cavity nesters near upper figures).

## Appendix 3. WBT Provincial Repository for Historical and Current Field Notes, Books, Reports and Photographs.

The systematic gathering of information on the birds of British Columbia is only about 50 years old. But during that time valuable information costing millions of dollars in wages and volunteer time and critical to the knowledge, conservation, and management of birds in British Columbia has been misplaced or lost. Part of the problem has been the lack of a central repository where historical and current information is channeled, maintained, and distributed in a medium friendly to a wide audience.

Over the past five years, WBT Wild Bird Trust of British Columbia has established a comprehensive repository for information on wildlife in the province. Part of their collection includes the B.C. Nest Record Scheme which brings us back to the 1999 report. A major chunk of B. C.'s ornithological history was preserved for future generations this year when retired professor **Dr. Fred Zwickel** donated nearly 600 detailed nest data sheets on his long-term research on **Blue**

**Grouse** on Vancouver Island. The notes have already been catalogued and bound and now await transfer to current nest cards for computer data entry. Other scientists, naturalists and people with a love for wildlife are now in the process of assuring their field notes, libraries, and field equipment make it to the provincial centre for safe-keeping.

WBT also maintains a large collection of photographic material (slides, prints, films, art work, and video tapes) which illustrate wildlife in the province. These are catalogued and document such things as raptor nest sites, breeding colonies, habitats, rare occurrences, unusual behaviour, and other topics of interest to ornithology. For example, during the 1999 nesting season the following individuals submitted a variety of photographs along with their nest cards: **I. Laurie Rockwell, Jack E. Williams, Alexander Muir, Kenneth G. Wright, Lee Foster, Lorri Harpur, Morgan Anderson, Vicki Hansen, R. Wayne Campbell, Christian Gronau, Penny Haering, Emily Müller, and Janice Arndt.** Several others, including **Emily Müller** and **Morgan Anderson**, provided field sketches to accompany cards.

**Special Publications**

**1. The Birder's Complete Life Checklist of British Columbia Birds**

R. Wayne Campbell. Leaflet. April 1998. \$2.50

**2. Four Trip Field List for British Columbia Birds (Including Mainland and Offshore Waters).**

R. Wayne Campbell. 22 pages. October 1998. Out of Print.

**Wildlife Reports**

**1. British Columbia Nest Record Scheme Instruction Manual.**

R. Wayne Campbell. 46 pages. April 1997. [No charge to participants in *Birds in the New Millennium* projects] \$5.00

**2. British Columbia Birds: A Species List - 1997 (Common and Scientific Names, Sequence, and 4-Letter Codes).**

R. Wayne Campbell. 22 pages. January 1998. [No charge to participants in *Birds in the New Millennium* projects] \$5.00

**3. British Columbia Nest Records Scheme: 43rd Annual Report ~ 1997 Nesting Season.**

R. Wayne Campbell, Maureen L. Funk and Lyndis Davis. 22 pages. March 1998. [No charge to participants in *Birds in the New Millennium* projects] \$5.00

**4. Spring and Summer Birds of Dawson Creek, 1991-1995**

Mark Phinney. 60 pages. December 1998. \$7.00

**5. British Columbia Nest Records Scheme: 44th Annual Report ~ 1998 Nesting Season.**

R. Wayne Campbell, Maureen L. Funk, Lyndis Davis and Jeremy V. Kimm. 24 pages. February 1999. [No charge to participants in *Birds in the New Millennium* projects] \$5.00

**New Titles**

WBT Publications to watch for in 2000 include, *British Columbia Birds - A Complete Checklist*, *Birds of the Cowichan Valley (1968-1981)*, *Bird-Finding Guide to the Okanagan Valley, B.C.*, and *Owls of the Creston Valley*.

## WBT Wild Bird Trust of British Columbia

### WHO WE ARE!

**WBT Wild Bird Trust of British Columbia**, established in 1993, is a provincial, charitable, non-profit organization concerned with the conservation of wild birds and their habitats. It undertakes research and education activities to increase our knowledge of British Columbia birds and to establish a sound basis for conservation.

It has active programs to acquire, protect, and enhance wildlife habitats. It provides results of field research to professional and general audiences through a variety of scientific and popular publications. WBT also participates in developing and carrying out educational programs in co-operation with government agencies, students, conservation groups, industry, sportsmen, and naturalists.

### WHAT WE ARE DOING!

#### **Wildlife Habitats**

- **Maplewood Flats** (North Vancouver) - established a Wildlife Conservation Area to protect the largest remaining wetland on Burrard Inlet. As stewards, we have enhanced habitat for the largest colony of **PURPLE MARTINS** on mainland B.C. and restored an important wetland.

- **McFadden Creek** (Salt Spring Island) - working with the Collective Waterbird Watch acquired and secured the largest **GREAT BLUE HERON** nesting colony along coastal British Columbia.

#### **Research Activities**

- Developed a visionary project **BRITISH COLUMBIA BIRDS IN THE NEW MILLENNIUM** in which conflicts between humans and birds will be presented in a series of innovative and popular field guides, reference books on vulnerable and persecuted species, and regional books to address conservation and management concerns.

- Established a **SPECIAL PUBLICATION** and **WILDLIFE REPORT** series for distribution of current information on the fast moving world of birds.

- Developed a protocol for a provincial **BIRD CONSERVATION CENTRE** which will house electronic wildlife data bases, such as the B.C. Nest Record Scheme. This will be the largest ornithological reference library in the province and will be based on original field notes, diaries, field survey data, banding information, and a collection of colour and black- and-white photographs. It will also provide research space for visiting professional and amateur ornithologists.

#### **Education Programs**

- Steering **NATURESCAPE BRITISH COLUMBIA**, a program promoting caring of wildlife habitat at home.

- Operating the **GREENING OF SCHOOL GROUNDS**, a program to enhance school yards for wildlife.

- Operating **WILDLIFE WATCH** which alerts and informs the public about the best wildlife viewing places in the Lower Mainland.

This is only the beginning! With your help we can protect many areas throughout the province and be an informed and effective **VOICE FOR BIRDS IN BRITISH COLUMBIA**. A large membership is the key to making this happen. Please **Join Us** and **GIVE WILDLIFE A CHANCE!**