BRITISH COLUMBIA NEST RECORD SCHEME

50th Annual Report - 2004 Nesting Season

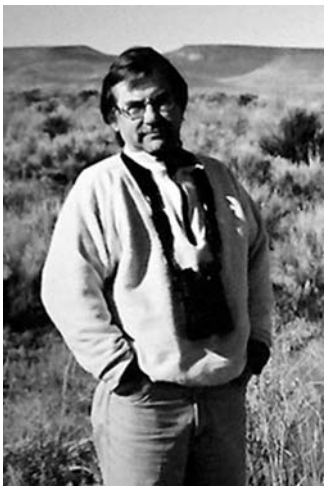
R. Wayne Campbell, Michael I. Preston and Linda M. Van Damme

Biodiversity Centre for Wildlife Studies Report No. 3 **April 2005**

PARTICIPANT PROFILES

Maintaining trust and friendship over decades takes an enormous amount of time and commitment. The participants below have a combined 67 years of supporting the British Columbia Nest Record Scheme as well as a host of other bird-related activities in the province. Both are high school teachers whose careers are winding down and will retire from English and mathematics classes in late June 2005. Chris and Gary claim that it is not "retirement" but more "redirection" as they both want to get involved in projects that have been "on the back burner" for decades. A good part of that time will be devoted to activities related to the Biodiversity Centre for Wildlife Studies.

Chris Siddle



Chris was born in Mission, BC, on a natural acreage surrounded by acres of woods. By Grade 5 he was curious about birds and started naming them using what was at hand – a British field guide. Two years later the first comprehensive North America field guide appeared by Roger Tory Peterson and Chris used money he won from a book report contest to purchase what would become a life-long obsession. Graham Peacock, an elementary school principal and avid outdoorsman who actually took time to open classroom windows and watch birds, encouraged him. Even Rock Pigeons were appreciated.

His passion to learn intensified by Grade 10 when he joined professional ornithological organizations like the *American Ornithologists' Union*, *Cooper Ornithological So*ciety, and *Pacific Northwest Bird and Mammal Society*. About the same time he began corresponding with Charles J. Guiguet, curator of Birds and Mammals at the B. C. Provincial Museum. Mr. Guiguet always answered Chris' letters in great detail. By 1967 Chris was contributing to the B. C. Nest Record Scheme.

An interest in literature, psychology, collecting books, and stamp collecting also dominated his early years and he took these to the University of BC where he graduated in 1973 having met and married Sonja Madsen in 1971. He received his teaching certificate from Simon Fraser University in spring 1975 and by summer he moved to Fort St. John where he began his teaching career. He stayed there for 14 years, raising daughters Liz and Kath, before moving south to Vernon in 1989.

He soon realized that the ornithology of the Peace River region of the province was poorly known and made a point of meeting Wayne Campbell who had started a mega-project on *The Birds of British Columbia*. He donated his records for one-time use for the project and was the major contributor to increasing our knowledge of birds in the southern Peace River region. Chris has also participated in a variety of surveys conducted in the province and served as regional editor for Northwestern Canada (that included the Yukon Territory) for *American Birds*.

In 1983 he met Gary Davidson and they have since become good friends. Both were teachers and had similar philosophies. They wanted to contribute to ornithology beyond listing.

Chris presently serves as a Director of the Biodiversity Centre for Wildlife Studies.

Gary S. Davidson

Gary was born in England and moved to British Columbia where he spent his childhood and early adult years in Vancouver living in an urban apartment block. He joined the Boy Scouts as an avenue to the outdoors and camping, and later became involved as a leader participating in several Jamborees throughout Canada. His interests include sports, stamp collecting, and all manner of outdoor activities.

While attending the University of British Columbia he became interested in identifying birds by using a field guide to determine that his "flash of yellow" seen in Pemberton was actually a MacGillivray's Warbler. After graduation Gary moved to Fort Nelson where he met Tony Erskine who piqued his interest even further. Together they carried out breeding bird surveys and published their results in the scientific journal *The Canadian Field-Naturalist*. Tony instilled the importance of keeping field notes, which Gary maintains today.

After two years in Fort Nelson, Gary and his wife, Marie, moved to Nakusp where he has been teaching ever since. In 1974 he met Wayne Campbell who encouraged him to participate in the B. C. Nest Record Scheme and *The Birds of British Columbia* project. He subsequently contributed over 20 years of data from the West Kootenay region.

In 1983, he met Chris Siddle and together they have looked for birds throughout British Columbia and at favourite spots in North America. While on a teaching exchange in Tasmania in 2004, Gary invited Chris to join him for a month to search for some of the island's endemics. They have also carried out field projects on the Lewis's Woodpecker, northeastern warblers, and wildlife in transmission corridors.

BRITISH COLUMBIA NEST RECORD SCHEME

50th Annual Report - 2004 Nesting Season

Compiled by

R. Wayne Campbell, Michael I. Preston and Linda M. Van Damme

Biodiversity Centre for Wildlife Studies Report No. 3 **April 2005**

CONTENTS

PLEASE NOTE

The post office we have used for the past 31 years was closed due to safety concerns. Our new address is:

British Columbia Nest Record Scheme
P.O. Box 32128
3651 Shelbourne Street
Victoria, BC. Canada
V8P 5S2

THE 2004 NESTING SEASON

Summary

We ended last year's Annual Report by saying: *Let's celebrate the 2004 season, and our 50th anniversary, with enjoyment, new discoveries, and lots of nest cards*. Your response was huge!

Since 1997 we've prepared for the start of each nesting season by printing 10,000 new nest cards each year. That usually lasts us a full season, with a few remaining for the following year. Over the past few years, however, we've had to increase that number by hundreds each year. In 2004, we never imagined that we would require nearly three full batches of cards for a single season! Well over **27,000 nests** and/or **broods** were newly discovered or transferred from historical collections, notebooks, and reports. That total, for a single year, represents more cards than were submitted for the first 17 years of the British Columbia Nest Record Scheme! **Well Done!**

What was really significant and satisfying, was that the cards were not prepared *en masse* to reach a total but were written with careful thought and detail. Even most of the historical cards contain information beyond observer, species, location, date, and contents.

We received a telephone call from the Cornell Laboratory of Ornithology, which operates the North American Nest Record program. They wanted to "rekindle" their program and were looking for advice on how British Columbia was able to receive more cards in a year than any other regional and national program in the country. The answer was simple: "trust". It was also important to establish an honest and open communication with contributors, maintain the scheme at arms length from governments, and frequently present summary information to show how using real data can help protect birds and their habitats. We have been invited to New York to present and discuss the "British Columbia" model.

Decreasing water levels throughout the interior of the province is a growing concern and may be partly due to more general drought-like conditions that have persisted over the past few years. For example, at Scout Island (Williams Lake) water levels decreased significantly from 1998 to 2004 (Figure 1). In the Peace River region many colonial-nesting species, like **Black Tern**, did not breed this season. Some lake levels in that region dropped by over a metre and many smaller, but permanent wetlands had dried up completely. Some **Common Loons** had difficulty finding a nesting spot near water and had to lay their eggs well up on beaver lodges.

In the **Telkwa** area, **Evi Coulson** reported that they had one of the sunniest and warmest summers of the past 25 years, beginning in April.

Long-term monitoring projects established by the Wildlife Data Centre continued this season with inventories of aquatic and terrestrial nesting colonies. Raptor nests and nest box trails were also closely monitored again. The species database for Barn Swallow was also started.

This year's total of **27,645 breeding records** was the highest-ever recorded since the British Columbia Nest Record Scheme began in the mid-1950s. Of these, **6,984 cards** were submitted by **273 active participants** for the 2004 nesting season. Another **20,661 nests** and/or **broods** were added to our growing collection from historical sources. A total of 266 species were represented.

No new species were discovered in 2004 but range extensions were obtained for **Lark Sparrow** (Lynx Creek – see Myers, S. 2004. *Lark Sparrow Breeding in the Peace River Region of British Columbia.* Wildlife Afield 1:65-66), **Williamson's Sapsucker** (Kimberley), **American Black Duck**, **Black Tern**, and **Purple Martin** (all Pitt Meadows), **Bushtit** (Powell River), and **Red-eyed Vireo** (Peter Hope Lake).

In total, 46 species were represented by more than 100 cards.

Highlights

Families and Species

The provincial list of breeding species stands at 314 although there is strong suspicion that the Eurasian Wigeon may be breeding in the Cariboo. The 2004 season was, however, filled with lots of surprises and more importantly better representation for some species from new areas of the province.

Surprisingly, the family with the most nests reported was the waterfowl at 5,338 nests and broods. The top three species in this family were **Mallard** (1,154), **Canada Goose** (898), and **Barrow's Goldeneye** (560). Broods of geese, ducks, and swans are, of course, quite common and easy to spot and identify. Families with colonial-nesting species, as expected, also had high numbers. In order, the top three were **Cormorants** (2,454 nests), **Swallows** (1,853 nests), and **Grebes** (1,440 nests).

Overall the top 10 species included **Glaucous-winged Gull** (4,552), **Ring-billed Gull** (1,448), **Pelagic Cormorant** (1,376), **Mallard** (1,154), **American Coot** (1,063), **Canada Goose** (898), **Double-crested Cormorant** (818), **American White Pelican** (678), **Eared Grebe** (649), and **Cliff Swallow** (638) of which seven are

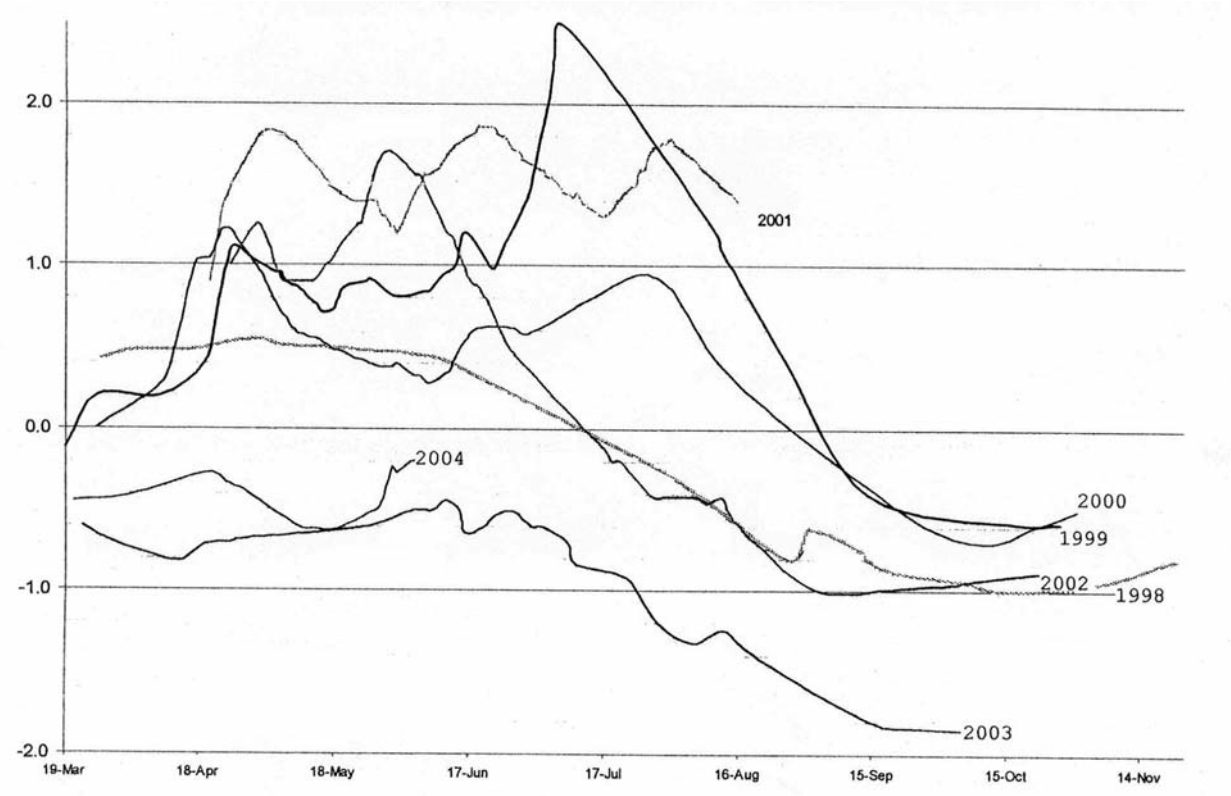


Figure 1. Summer lake levels at Williams Lake based on the normal level (0.0 line) from 1998-2004.

colonial-nesting species. These accounted for 37 % of all nests and broods reported in 2004. Individual nest counts were submitted for each of these species.

For the second year in a row a pair of **Black-necked Stilts** successfully raised a family at **T'Kumloops Marsh** in Kamloops. A note on the unsuccessful nesting of Black-necked Stilt at two other locations in British Columbia is currently being prepared for the next issue of Wildlife Afield (Vol 2:1).

Twenty new species were added to this year's total from the 2003 total. Some of the highlights in this group include **Brandt's Cormorant**, **American Golden-Plover**, **Wandering Tattler**, **Crested Myna**, **Black-throated Green Warbler**, **Grasshopper Sparrow**, and **Common Redpoll**.

Species for which 2004 cards were received that greatly enhanced our 50-year collection included **Western Grebe** (170), **Harlequin Duck** (73), **Bufflehead** (339), **Golden Eagle** (19), **Ruffed Grouse** (239), **Spotted Sandpiper** (133), **Herring Gull** (537), **Forster's Tern** (21), **Williamson's Sapsucker** (107), **Barn Owl** (31), **Great Horned Owl** (72), and **Common Grackle** (40).

Although the **Williamson's Sapsucker** is fairly common in the south-central interior of the province, breeding records for the rare subspecies in the extreme southeast have not been reported since 1949. While walking in **Kimberley Nature Park** in the spring **Ruth** and **Kent Goodwin** heard a piercing squeal that sounded like a young black bear. They followed the squeals and eventually discovered an active nest with both adult sapsucker's in attendance.

Linda Van Damme continued her main research on nesting **Double-crested Cormorants** and **Ospreys** in the Creston Valley, while Cyril Colonel concentrated mainly on raptors and documenting **Barn Swallow** nest activity. **Allen Poynter** visited **Duck Lake** in the Creston Valley on 3 June and counted 18 adult **Forster's Terns** flying about with one adult sitting on a nest at the fringe of the **Western Grebe** colony.

Doug Brown was busy travelling around the province, and although he had lots of highlights his favourites included a **Northern Goshawk** nest at Carbon Creek and a recently fledged brood of **Black-throated Green Warblers** along the Sukunka River. He needed a hardhat to check the goshawk nest!

In the 2003 report we mentioned that second broods of **Say's Phoebes** were rare and we encouraged specific details for double-brooding. **June Slocombe** wrote to say that she has had a pair raise two broods for four consecutive years in the same equipment shed in **Rossland**. June moved to Sundre, Alberta, in late 2004. We will miss her enthusiasm for finding and reporting nests. We have agreed to send her copies of future Nest Record Reports so she can keep up with results of her investment and support of our activities.

With global warming and climate change we are beginning to see the results of 50 years of continuous data gathered on breeding birds in the province. **Janice Arndt** found a **Nashville Warbler** nest with four

nestlings, about two days old, on 28 May. According to *The Birds of British Columbia* this is about one week early. By 2 June the nest was empty but adults were still collecting food.

Carolyn McGhee discovered a **Northern Waterthrush** nest with five eggs near the **Stellako River** that helped fill in gaps in the species' breeding range in the province. **Tim Newman** discovered a **Broad-winged Hawk** nest at **Tabor Lake** near Prince George, **Laird Law** and **Sandra Kinsey** found evidence for breeding near **Del Rio**, and **Wayne Campbell** monitored a nest used again in 2004 near **Lone Pine** in the Peace River. **Wayne Matkoski** discovered our seventh breeding location for **Harlequin Duck** nesting on **Vancouver Island**.

Chris Charlesworth knew that very little was known about the **Dusky Flycatcher** in the **Okanagan Valley** so he monitored the fate of five nests found in a power-line corridor. His findings were published as *Observations of Breeding Dusky Flycatchers in the Central Okanagan Valley of British Columbia* (see Wildlife Afield 1:59-61).

While conducting thesis research north of Campbell River, **Michael Preston**, with his wife **Joanna**, found an **American Kestrel** nest in an old-growth variable retention study site. Since *The Birds of British Columbia*, this record is the furthest northern breeding record on Vancouver Island. The find was also a pleasant relief from all the **Dark-eyed Junco** and **Winter Wren** nests they had been monitoring.

Trumpeter Swans continue to expand their breeding range. **Laird Law** and **Sandra Kinsey** found a brood at **Peavine Creek**. This active field team also found four young **Connecticut Warblers** at **Moberly Lake**.

For the first time in 17 years **Chris Czajkowski** had a **Bald Eagle** nest at her alpine retreat above **Nimpo Lake**. She also explored the area and reported broods of **Rock** and **Willow Ptarmigan**.

Swainson's Hawk nests, always a good find, were reported by **Peter Blokker** and **Vicky Atkins**. A **Rock Wren** at **Coldstream** discovered by **Vicky Atkins** was a good record as well.

Coverage

With the exception of the central and north mainland coast all coastal areas, including large offshore islands and the Lower Mainland, had nearly complete representation. Manning Park, the entire Okanagan Valley, Cariboo-Chilcotin area, West and East Kootenay, Thompson-Nicola, Shuswap Highland, the Prince George region, and southern Peace River region were also well covered.

Coverage of Spatsizi Wilderness Park, parts of the upper Alaska Highway, Atlin, and the Haines Road areas were mostly the result of historical collecting expeditions of Harry S. Swarth, A. L. Rand, Allan Brooks, William Spreadborough, and M. Y. Williams.

In total over 35 % of all grids in the province were represented in 2004 (Figure 2). The top nine locations with the highest numbers included **Stum Lake** (1,430 cards), **Okanagan Landing** (1,255 cards), **Vancouver** (1,160 cards), **Mitlenatch Island** (1,058 cards), **Creston Valley** (1,010 cards), **Tofino** (976 cards), **Barkley Sound** (958 cards), **Riske Creek** (901 cards), and **Iona Island** (834 cards).

Remote forested regions of Vancouver Island were again well covered thanks to the efforts of **Mike** and **Joanna Preston** and **Mark Nyhof**. The southern Peace River region, including the vicinity of Hudson's Hope, Chetwynd, Tumbler Ridge, Fort St. John, Cecil Lake, Boundary Lake, and Dawson Creek received the best coverage ever. Wayne and Eileen Campbell recorded well over 1,400 nests and/or broods.

Participants

The following 20 individuals submitted more than 100 nests and/or broods for our 2004 report: **R. Wayne Campbell** (2,494), **Glenn R. Ryder** (1,598), **Ken Kennedy** (1,503), **R. Wayne** and **Eileen C. Campbell** (886), **Linda M. Van Damme** (791), **Sandy Proulx** (433), **Vicky Atkins** (368), **Doug Brown** (345), **Mark Nyhof** (302), **Michael I.** and **Joanna Preston** (275), **Ed Beynon** (212), **Les Gyug** (178), **Rita Wege** and **Larry Prosser** (160), **Chris Charlesworth** (121), **Laird Law** and **Sandra Kinsey** (116), **Beverly H. Butcher** (112), and **G. Allen Poynter** (101).

Doug Brown probably visited more parts of the province than anyone else did. He spent time in the **Okanagan Valley**, **Sunshine Coast**, **Texada Island**, **Queen Charlotte Islands**, and the **Peace River** – and all areas in between. On one walk, 45 minutes around **Crooked River Park**, north of Prince George, he found 15 nests and/or broods including **Dark-eyed Junco**, **Boreal Chickadee**, **Solitary Sandpiper**, **Barrow's Goldeneye**, **Hooded Merganser**, **Merlin**, **Yellow-rumped Warbler** ("Audubon's"), **Song Sparrow**, and **Red-necked Grebe**.

Linda Van Damme found an impressive 64 species in her study area in the **Creston Valley** with high numbers for **Red-necked Grebe** (52 nests/broods), **Canada Goose** (59 nests/broods), **Osprey** (31 nests), **Red-tailed Hawk** (12 nests), **Great Horned Owl** (8 nests), and **Barn Swallow** (87 nests).

Michael McMann transferred breeding records of **raptors** from his notes for 2002 through 2004 for **Castlegar**, **South Slocan**, **Creston Valley** and other sites in the **West Kootenay**. His notes were excellent and contained additional information, such as history and behaviour, that is not often recorded on cards.

Hilary Gordon and **Linda Van Damme** continued to be faithful promoters of the BCNRS in Shuswap Lake and the Creston Valley areas respectively. At the same time they encouraged others to increase the quality and completeness of the information being recorded. In the North Okanagan, **Vicky Atkins** enlisted

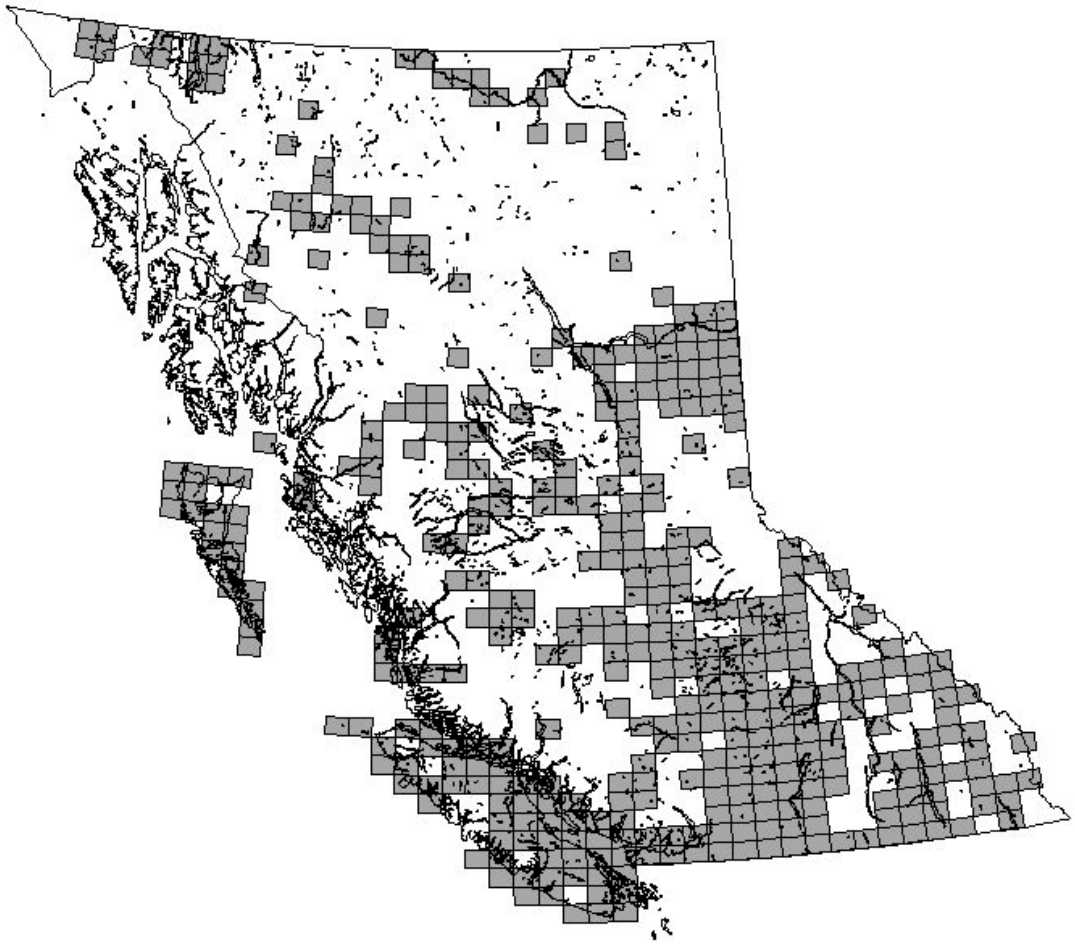


Figure 2. Provincial coverage for the British Columbia Nest Record Scheme in 2004.

Trevor and **Laila** to help look for nests this year making it a truly family affair.

Alice Beals and **Vicky Atkins** realized the importance of monitoring species nesting in urban and residential environments. Together they recorded information on 30 **Western Kingbird** nests in the northern **Okanagan Valley**. They hope to check the same route in 2005.

Quality of Information

Filling in the Blanks

It is gratifying to see that the general interest in recording additional and useful information is increasing. Part of this "wave" is the awareness that specific information is not "overload" information and that our electronic databases have been developed to include and sort such details. Especially helpful was the number of participants who recorded the estimated age and sex (when possible) of fledged young.

Please remember to print or write legibly within the spaces and use dark ink, not pencil. The 4-letter code (see WBT Wild Bird Trust of B. C. Wildlife Report No. 2 – *Common and Scientific Names, Sequence and 4-Letter Codes*) can be used for species names and subspecies (races).

For example, if a **Yellow-rumped Warbler** nest is found please indicate either "**Audubon**" Warbler (AUWA) or "**Myrtle**" Warbler (MYWA). Other species with easily identifiable subspecies include **Dark-eyed Junco** (e.g., "**Oregon**" or "**Slate-coloured**" Junco), **Horned Lark** (e.g., "**Arctic**" and "**Dusky**" Horned Lark), **Northern Flicker** (e.g., "**Red-shafted**" or "**Yellow-shafted**" Flicker), and **White-crowned Sparrow** (e.g., ""**Gambel's**" and "**Puget**" White-crowned Sparrow).

Colour phases are also important to record especially for raptors like **Red-tailed Hawk** and **Swainson's Hawk**. The phases can be described as "light", "intermediate", "rufous", and, "dark". Most Red-tailed Hawks nesting in the Atlin area of northwestern British Columbia are "dark" morphs.

Whenever possible, please try to describe the stage of development for nestlings (e.g., eyes closed, naked young, some down on head, pin feathers, well feathered, left nest, etc.) or the estimated age of downy

young, (e.g., loons, grebes, seabirds, waterfowl, grouse, and shorebirds). Please refer to **Appendix 1** for drawings for different stages of development.

Nancy Krueger realized that recording information on cards while in the field reduces errors. During a B. C. Field Ornithologists' field trip in the vicinity of **Tumbler Ridge** she encouraged birders to fill in cards on the spot.

Documentation with Photographs

In 1972 a photo-file was established **by Wayne Campbell** and **David Stirling** to document the occurrence of unusual or rare amphibians, reptiles, birds and mammals in British Columbia. This was mainly in response to the needless killing of vagrant animals by museum personnel for their collections. The file, today called the **BC Photo File for Wildlife Records**, continues with over 3,200 catalogued entries. The original scope has grown to include topics of behaviour, mortality, environmental abnormalities, unusual regional records, impact of natural hazards on wildlife, marine and fresh-water colonies and marine mammal haulouts, staging areas, albinism, environmental pollutants, and specific nest site locations.

Often photographs complement descriptions that increase the value of a particular record or event. A program started in the mid-1960s to document specific locations and nest sites for marine and fresh-water colonial-nesting birds still continues. In recent years we have added specific sites for all birds of prey including owls. For example, **Harry R. Carter** and **Michael S. Rodway** discovered an active **Peregrine Falcon** nest site on Galiano Island in 1978. In their notes they describe the location of the site as "*in a protective rock crevice running vertically along the cliff face between Gray Peninsula and Retreat Cove*". Their photograph (Figure 3) complements the breeding record with a specific location that can be referenced in the future. Even with such technologies as GIS and GPS, a photograph usually tells a truer story.

For the first time **Ospreys** were discovered by **Mark Nyhof** nesting on a tall lamp standard on playing fields at the University of Victoria in 2004. Unfortunately **Common Ravens** took the eggs but the photo record, 50 years from now, will be an invaluable reference.

Documenting nesting islets in large lakes for species like **Herring Gull** are helpful because most are unnamed and have no good description of their location (Figure 4).

Figure 3. Location of Peregrine Falcon nesting ledge on Galiano Island, BC. 19 June 1978 (Harry R. Carter and Michael S. Rodway). B C Photo 3137.

Figure 4. Unnamed rocky islet in Stuart Lake, BC. containing breeding Herring Gulls. 7 June 1977 (R. Wayne Campbell). B C Photo 3129.

Useful photo documentation was received in 2004 from **Wayne Matkoski** (Harlequin Duck), **Kris Andrews** (site maps for nests and prints for Williams Lake) **Hilary Gordon** (newspaper clippings for nesting species), **Chris Charlesworth** (prints and slides for many species in Kelowna area), **Linda Van Damme** (Black-capped Chickadee, European Starling, and House Sparrow), **Beverly H. Butcher** (Western Kingbird and Barn Swallow), **Trevor** and **Laila Atkins** (Barn Swallow), **Cyril Colonel** (most raptor nest cards with prints of nests attached), **Vicky Atkins** and **Alice Beals** (Bald Eagle, Spotted Sandpiper, Western Kingbird and a newspaper article on Osprey), and **R. Wayne Campbell** (many species for the western Peace River region).

Cyril Colonel has taken photo-documentation to the next level with a very impressive series of coloured booklets on nest sites for raptors and terrestrial colonial birds in the **Creston Valley**. In 2004, he submitted new reports for **Bald Eagle**, **Red-tailed Hawk**, and **Barn Swallow**. Each nest site was fully documented with appropriate biological information. These reports complement nest cards and will be catalogued in the Wildlife Data Centre. In addition, he supplied updates for his 2003 reports for **Double-crested Cormorant**, **Great Blue Heron**, and **Osprey**. He, and field partner **Linda Van Damme**, plan to continue their research in 2005.

Again, some contributors are adding GPS co-ordinates or UTM scores on nest cards. The more precise the location the more valuable the record. Such

information is consistently received from **Sandra Kinsey**, **Laird Law**, and **Mark Phinney**.

All species that lay eggs in the nests of other species, such as Brown-headed Cowbird, Redhead, American Coot, Lesser Scaup, Canvasback, and Ruddy Duck, should have two separate cards filled out. This also includes feeding of fledged Brown-headed Cowbirds by their host.

Diagrams

Many contributors included a sketch on the back of a card showing the precise location for a nest, the exact location for a major colony, and the distribution of species nesting in a confined area. These are very helpful to have on file and become more useful with time as habitats are altered.

Repeat Visits

It is encouraging to see that each year more repeat visits are being made to nests. This is very encouraging, as we cannot go back in time for additional information. We get one chance on a visit to a nest or brood and we should make every effort to maximize the observation period.

Glen McInnes made 94 observations for the 172 days that a pair of **Ospreys** nested on the **Stave River**. The adults arrived at their nest on 24 March and finally left with their family on 11 September. **Willie Haras** put in a big effort to record repeat visits to determine success for many nests and continued monitoring species at traditional nesting sites. For one pair of **Mountain Chickadees** he made 12 visits, from egg-laying through fledging.

Biologist **Janice Arndt** was able to revisit many of her nests including a **Song Sparrow** nest on 16 occasions. She also provided excellent information on habitat. **Jennifer Bergen** and **Don Young** usually average 8 to 14 visits for most of their cards while **Vicky Atkins** made up to 13 visits to nests of **Northern Flicker** and **Tree Swallow**.

In the **Creston Valley**, **Cyril Colonel** carefully made repeat visits to most of the raptor nests he and **Linda** located. Many others, especially those involved in thorough coverage of specific areas (e.g., Creston Valley and Kelowna) as well as monitoring activities that included bluebird trails, Ospreys, and raptors, carefully planned repeat visits to get additional information on clutch, brood size, and productivity.

Negative Information

Completing cards for species that have traditional nesting sites such as birds of prey, colonial-nesting swallows, swifts, some waterbirds, colonial marine birds, and loons can be helpful in interpreting changes in distribution, effects of weather on breeding activities, chemical contamination, and disturbance. For example, the traditional **Bank Swallow** colony opposite the gas station at **Kokanee Bay** on Lac La Hache was not is use in 2004. But a new site, 50 m to the south, was occupied with about the same number of adults. These cards are filed for reference but are not included in the report summary.

Correcting information on cards already submitted is also a form of negative information. **Ed Silkens** sent a lengthy letter concerning some information that needed to be changed for nesting **American Dippers** on the **John Hart Generating Station** near Campbell River.

Notes from the Field

While looking for nests and trying to sort out the number of young in broods we encounter natural events that stay with us for a lifetime. Here are some of our favourite stories from this year's cards.

Battle of the Goldeneyes

A lot can be learned about bird behaviour and competition for nest sites as **Herb Carter** found out when he installed a camera inside a duck box. A female [**Common**] **Goldeneye** was incubating her clutch of 8 eggs on 10 May when Herb observed an intruder enter the box: "*the fight was on, as they were rolling around with one bird grabbing the other by the back of the neck and shaking it around*."

"*I know better than to interfere but I couldn't help it. I ran outside, climbed up the ladder and tapped on the side of the box, one bird flew and the other settled back on the eggs. I managed to record 5 minutes of action but missed the initial part. After reviewing the recording the most aggressive bird was the nesting duck, the intruder really got the worst of it and flew out when my tapping distracted them both* (Figure 5). *I was wondering if left alone there would have been one dead or very injured duck. Is this a common event?*"

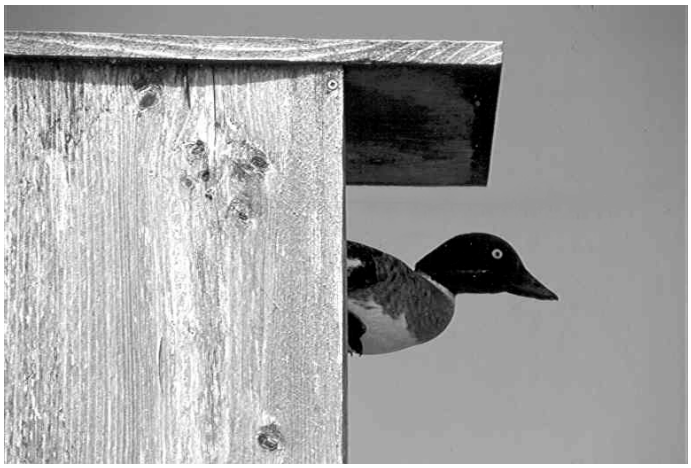


Figure 5. Female Common Goldeneye leaving nest box in Creston, BC. 18 May 2004 (Linda M. Van Damme).

Just a Moment Please

While assisting with studies of the American White Pelican at Stum Lake, **Glenn Ryder** had an unusual experience with a pair of **Tree Swallows**. While exploring the woods one day he found a recently fallen tree that contained a good flicker cavity. He cut a large segment of the trunk containing the cavity and carried it back to camp. No sooner had he propped it up on a fence did he suddenly hear a loud chirping sound. He quickly noticed that a pair of Tree Swallows were poking their heads inside the cavity and calling loudly to each other.

Glenn grabbed a shovel and began digging a hole near the lakeshore to "plant" the trunk. While still firming the ground around the stub both swallows went in and out of the nest cavity. They spent the rest of the day "over-joyed" with their new home and successfully raised a family.

Bouncing Bushtit Babies

In the spring, **Paul Simpson** noticed a pair of **Bushtits** building a nest in a willow tree in his yard. To his dismay he returned home from work one day to find the nest laying on the lawn. The Bushtits had chosen some old branches on which to attach their nest that had snapped in the wind. As he picked up the nest he could hear faint peeps of babies inside the nest and then noticed mom and dad nearby in the willow. He carefully hung the nest back in the tree, about 10 feet up, with a twist tie. Both parents were back carrying on family duties before Paul's feet came off the ladder.

The next morning the nest was again on the ground but this time one of the parents was standing on top of it. The babies were still alive, thank God, as Paul felt totally responsible for their predicament. This time he really secured the nest and again both parents quickly entered.

For the next hour Paul watched for activity when suddenly two crows appeared and headed down the trunk toward the nest. "*I learned real quick why Bushtits build their nests on the most spindly branches!*" He quickly ran outside and painstakingly spent half an hour threading a zap strap through the opening of the nest to maintain the opening and then reattached the nest to a new growth of branches with locking wire. Meanwhile, the concerned parents flitted within a foot or two of his head.

Paul checked the nest site a couple times a day and within a week or two all the babies were grown up and took up residence in an adjoining maple tree.

Egg Transfer?

Tunie Grant, who lives in rural **Grinrod**, wrote: "*...my husband was down at the pond today [June 1, 2004] training the labrador when a hen **merganser [Hooded]** that had been around for a few days flew over his head. He noted she was carrying something white in her beak. Just after she got past him, he saw her drop the white thing & heard it smash on the ground. The duck flew on so he walked over to take a look. It was an egg – totally smashed with bright yellow yolk all over the shell. He has been a duck lover/hunter/conservationist all his life and kept saying he had never seen such a thing & that I should tell you! I wonder if she had/has a nest on our island & was transferring her egg to safety*."

A Freebie!

A familiar sight in the Creston Valley each summer is watching **Ospreys** catch and carry fish to their hungry family. Workers at the **Imasco Plant**, north of Wynndel along Highway 3A, were shocked when one of the nesting pair of Osprey dropped its catch as it flew across the yard. One worker picked up the fish, cleaned it, and took it home for supper!

Maybe the Osprey pair were showing their appreciation for the safe nesting platform that had been erected by the workers. Two young were successfully reared by summer's end.

A Helping Hand

On 3 July **Gerry McFetridge** found a **Western [Pacific-slope] Flycatcher** nest built under an eave of a house in **Nelson**. On 24 July the nest was found on the ground with two dead and 2 live nestlings, all with eyes unopened. The nest and two remaining young were returned to the original position under the eaves. Two days later a parent was observed feeding the nestlings whose eyes were now wide open. By 30 July the young were on their way to Mexico!

Ann Edwards, who lives in **Port Coquitlam**, watched two **Brown Creepers** with their family of three recently fledged young moving around western red cedar and western hemlock trees on 28 June. Without warning, two of the young flew off and into the window of a nearby cabin and fell to the ground. The stunned young were placed in an upright position in an open box. Half an hour later both flew up to trees where the rest of the family was "waiting". They were fed immediately by one parent and often only "if they stayed in a spot and did not move".

On 8 June, while searching for nests along the lower **Pitt River** dyke, **Donald Waite** watched a female **Yellow Warbler** playing the "broken wing" act. He soon discovered a nest in the fork of a young sapling with 2 eggs. About a week later he revisited the nest to find that it had become unattached during a storm and was unable to support the weight of an incubating adult. He tied the nest back to the tree with string and soon an adult was back on the nest incubating. The nest was successful fledging both young.

Heather Kellerhals sent us some notes she made in 1997 regarding a problem she solved for nesting **Barn Swallows**. A nest containing four young "peering over the nest" had just fallen from its shaky base in a shed. Two young died but two were still alive. She and her son quickly

cut a section of the lip off a plastic garden pot, nailed it to a rafter, and placed the nestlings in it. Within minutes the parents were back feeding their family and over the next few days they fledged. Soon afterwards the adults starting plastering the cut lip with mud pellets and soon another nest, with eggs, was started. In no time the second family was peering over the lip of their new home and soon joined their siblings in aerial displays.

On 9 August a young **Osprey**, too young to fly, was found below its nest by **Cyril Colonel**. The bird was unharmed but its feathers were soaking wet from the rain. Cyril bundled it up in a towel (Figure 6), called the local Conservation Officer, who suggested the bird either be sent to a rehabilitation facility or cared for in the Creston Valley. Attempts to return the bird to the 18-m high nest were not successful.

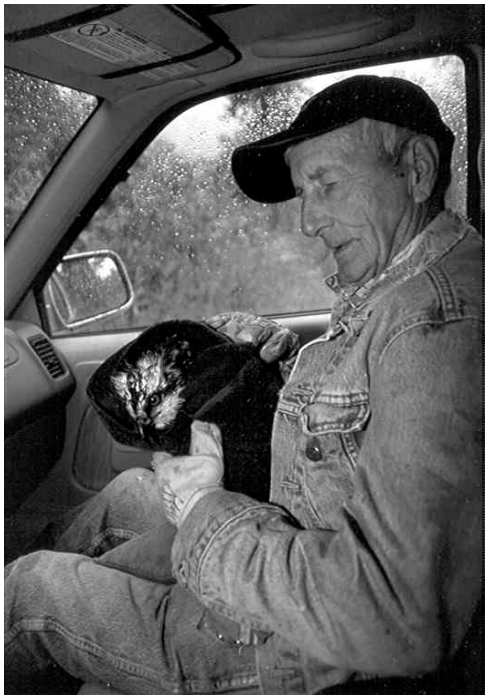


Figure 6. Cyril Colonel with nestling Osprey picked up below its nest in Creston, BC. 9 August 2004 (Linda M. Van Damme).

The local rehabber for birds of prey, Helen Jamieson, suggested the Osprey be reared locally until it was ready to fly. Cyril built a pen for the bird and for the first 10 days it enjoyed a lavish diet of imported pink salmon. Each day it eagerly waited to be fed, grabbing chunks of flesh as it was presented to it. Eventually, a couple of teen-aged boys began catching fish for the Osprey at Duck Lake, the bird's more natural food. As it grew the Osprey's habit of grabbing the food by its talons and ripping pieces off was more evident. By three weeks the growing bird was pumping its wings and lifting off the platform, suggesting that it would soon be ready for its maiden flight. On 26 August, the juvenile was released.

Architectural Wonder

Donald Miller, a professor from the University of New Hampshire, studied bird adaptations in high elevation country in Spatsizi Park in the mid-1970s. He marvelled how **American Tree Sparrows** could "disappear" in their compact nest of feathers to avoid wind chill and temperatures often below zero. He soon discovered the nests are built so well that one was found, two days after young had fledged, with a ½ inch of water still in the nest following a rainstorm.

Gander at a Goose

Meghan Tripp, an inquisitive 12 year old from **Fernie** was out exploring her favorite beaver pond when she came across a **Canada Goose** nest with 6 eggs. She wondered where the parents might be and thought perhaps the nest had been abandoned. She and her friend decided to take one egg to see if it would hatch. Wrapped in towels she stowed it away in her dresser drawer leaving a small space heater on low to keep the egg warm. Faithfully, the egg was turned every day for 2 weeks.

Figure 7. Canada Goose gosling hand reared by 12-year old Meghan Tripp in Fernie, BC.

Home alone one day, Megan noticed the chick started to hatch and exclaimed it was "*so amazing*". Once hatched the chick was wet so Meghan wrapped it in a towel, not quite sure if she should dry it. After a few hours, the chick dried naturally and turned into a yellow fuzz ball. Her mom ground up some grain and corn to feed the gosling (Figure 7) until it was able to eat the grains whole. Meghan said when it was really small she let it sleep with her, but then it stayed in the spare bedroom once it got bigger. Eventually her dad built a pen for it outside. Meghan giggled as she related how her dad would make these bird sounds and the goose would peck at his hand.

She taught the goose to fly by running down a hill flapping her arms as the goose followed her. Sometimes, she rode her bike down and the goose would fly after her. A fish pond was the perfect place to learn to swim but the most fun was jumping in her inflatable boat and paddling around the beaver pond with the goose trailing alongside. She was hoping it might fly away on its own but Meghan realized she was the surrogate mother. The goose did disappear for a few days, and one day staff from the local Beaver Lumber store called to say a goose was following people around in their parking lot. Later, a Conservation Officer relayed that he had found the bird behind Extra Foods, picked it up, and took it to the marsh at Morrissey.

In the spring of 2005, Meghan was excited to see another Canada Goose nesting in the beaver pond. She said that "this year I'm just going to watch and not take home any more eggs. But last year was such an awesome experience!"

The Job's On Hold

Summer is a busy time for rural folks who take the opportunity of good weather to repair buildings. **Ralph Stabler**, who lives in **West Creston**, willingly postponed a much needed replacement of a shed roof when he discovered a pair of **Violet-green Swallows** nesting between a crevice in some cedar shakes. When the swallow family fledged Ralph commented "*they sure are good parents*". By summer's end a new roof was in place.

A World Record?

Naturalist **Glenn Ryder** spends a lot of time in the field and commits to follow-up on unusual findings. He noticed an **American Robin** flying with nesting materials into a new house that was under construction in **Mount Lehman.** He checked inside and found many new nests on beams, some under construction and others complete. He was able to follow the nesting attempts and at the end of the season the robin had started or completed 21 nests! Of five completed nests only 2 held single eggs and one nest contained 6 eggs. Two remained empty and unused.

Waiting for Monday

In **Chilanko Forks**, a pair of **Barn Swallows** chose to build a nest on a beam inside an automotive repair shop. The swallows could be seen darting in and out of the garage throughout the day carrying on their nesting duties. And, as if able to tell time, they always managed to fly into the garage before the doors were closed at 6:00 pm. When the mechanic arrived at 7:00 am the next day he was greeted by the friendly twittering calls of the adults.

The garage was closed on Sundays and the owner felt badly about leaving the swallows inside for over 24 hours. However, he soon learned how resourceful they were in catching bugs inside the shop and stealing those caught in spider webs.

It wasn't the first year that a family of four was raised and likely not the last.

Matching Wits With A Predator

Each year **Charles Ollen** enjoys hosting **Barn Swallows** that nest on his home in **Penticton**. In mid-June he was saddened to watch an **American Kestrel** raid a nest on a light fixture and take 5 nestlings. The parent swallows were very agitated but decided to try a second attempt to raise a family. To help the swallows, Charles constructed a wire mesh cage around the nest. For over a month the swallows entered their nest through a hole in the mesh and successfully fledged 5 young before mid-August.

Recycling at its Best

Each year **Lorne and Stacey Ostendorf** welcome **Cliff Swallows** that build their nests under the eaves of their country home in **Wynndel**. This year, after a severe rainstorm, two nests fell down one with five small but feathered young. One nestling perished but Lorne figured that the live young still had a week or so before they would be large enough to leave their nest.

He quickly modified a plastic milk jug, added some dry hay as lining, and fastened it under the eaves near the original nest site. In no time the parents were feeding their salvaged family. But to make the nest their own mom and dad added a ring of mud to the outside of the jug (Figure 8).

Figure 8. Rescued nestling Cliff Swallow in its modified nest in a plastic milk jug in Wynndel, BC. 7 June 2004 (Cyril Colonel).

California Quail Egg Laying Marathon

On April 23rd **Russell Cannings** found a **California Quail** nest tucked in against the foundation of his home in **Naramata**. It was in a shady corner where the shed is attached. The nest was quite exposed after an old metal stand went out in the garbage, so a toboggan was leaned over the corner to give the nest some privacy. The site may have been used last year because just before Russell discovered the nest, some old egg-shells (obviously properly hatched) appeared by the shed door. The birds must have cleaned them out of the old nest cup as egg-laying began.

The nest contained 7 fresh eggs at noon on the 23rd, and the number increased by leaps-and-bounds or perhaps by grunts-and-groans! The biggest increase in the shortest time was on the 25th when between 0900 hrs and 1800 hrs four eggs were laid.

The amazing egg-laying schedule was:

Date	Time	Eggs
23 April	1200	7
24 April	0900	9
24 April	1300	11
25 April	0900	12
25 April	1800	16
26 April	0730	16
26 April	1030	18
27 April	0800	20
27 April	1300	21
28 April	0930	21
28 April	1330	24

By May 1 there were 27 eggs in the nest and then the laying stopped. And no female quail ever incubated them.

The Birds of North America states that the California Quail female lays 3 eggs every 4 days on average; but some nests ("dump nests") fill up more quickly because they are used by more than one female. Presumably there were three females involved here, with 9 eggs being laid in two days. Dick Cannings wasn't sure which bird was going to do the incubation, but jokingly commented that each female probably expected another bird to do it. Two pairs of adults were seen in the immediate vicinity of the nest on two occasions, but never more than that. It would have been nice if the birds were colour banded so we could see who was involved!

Dick removed the eggs from the nest on 21 June and sent this near record-setting clutch to the Cowan Vertebrate Museum at UBC. By the state of some of the eggs, he should have acted sooner, because the odor forced him out of the kitchen and into the garage. The record clutch size for California Quail seems to be Bob Gibbard's recollection of a 28-egg clutch in his parents yard, only a few blocks from the nest at the Cannings.

Historical Information

The never-ending task of extracting breeding information from historical sources such as field notebooks, museum catalogues, old reports, correspondence, naturalist club newsletters, books, and scientific journals continued. The task is often very time-consuming because so much text has to be read to extract details for a single breeding record.

In 2004 an **unprecedented volunteer effort** was put into transferring historical information to current cards. The period covered **114 years**, from 1889 through 2003. The task is tedious, as museum catalogues must be searched for British Columbia records. Fortunately many museums supplied details for the province making the task easier. Here is some of the information that we were able to extract for British Columbia: **Field Museum of Natural History** (Chicago) – A. C. Wilk and R. A. Cumming for Queen Charlotte Islands in 1930, 1940, and 1946; **National Museum of Canada** (Ottawa) – William Spreadborough for Richter Pass in 1905**; Museum of Vertebrate Zoology** (Berkley, CA) – H. S. Swarth for Kispiox Valley and Flood Glacier in 1910 and 1919; **University of Florida State Museum** (Gainesville) – C. F. Newcombe for Seabird Rocks in 1896; **University of Michigan Museum of Zoology** (Ann Arbor) – R. M. Stewart for Masset in 1939; **Academy of Natural Sciences of Philadelphia** (Philadelphia, PA) – S. N. Rhoads for Vernon and Lac La Hache in 1892: and **United States National Museum** (Washington, DC) – C. R. Young for Arrowhead in 1909 and R. R. MacFarlane for Fort St. James in 1889.

Much of the information from the 1940s was extracted from the detailed reports of **James A. Munro**. The 1980s still remain our weakest decade mainly because the Royal British Columbia Museum decided to concentrate on revitalizing its collecting programs and discouraging volunteer field observations. If you have field notes for that period please let us know. That information is critical to our projects that are looking at the effect of climate change, agricultural development, and forestry on birds.

Transferring information from the "gray" literature, such as unpublished government and consultant reports, always produce surprises. Buried within the Appendix of a report British Columbia Hydro Wildlife Studies – Liard River Valley, Summer 1980 we found eastern breeding range extensions for **Pacific (Arctic) Loon** and **Semipalmated Plover**.

The top five years for historical records were **1993** (2,202 cards), **1970** (1,743 cards), **1973** (1,655 cards), **1972** (1,606 cards), and **1980** (1,354 cards). See Figure 9 for the number of historical records transferred during 2004.

A committed group of people really put in a big effort to get historical information on file and centralized. These include **Rita Wege** who went back over her field notes from 1998 to 2004 and transferred 61 records of **Canada Goose** breeding in Osprey nests. **Mark Hobson**

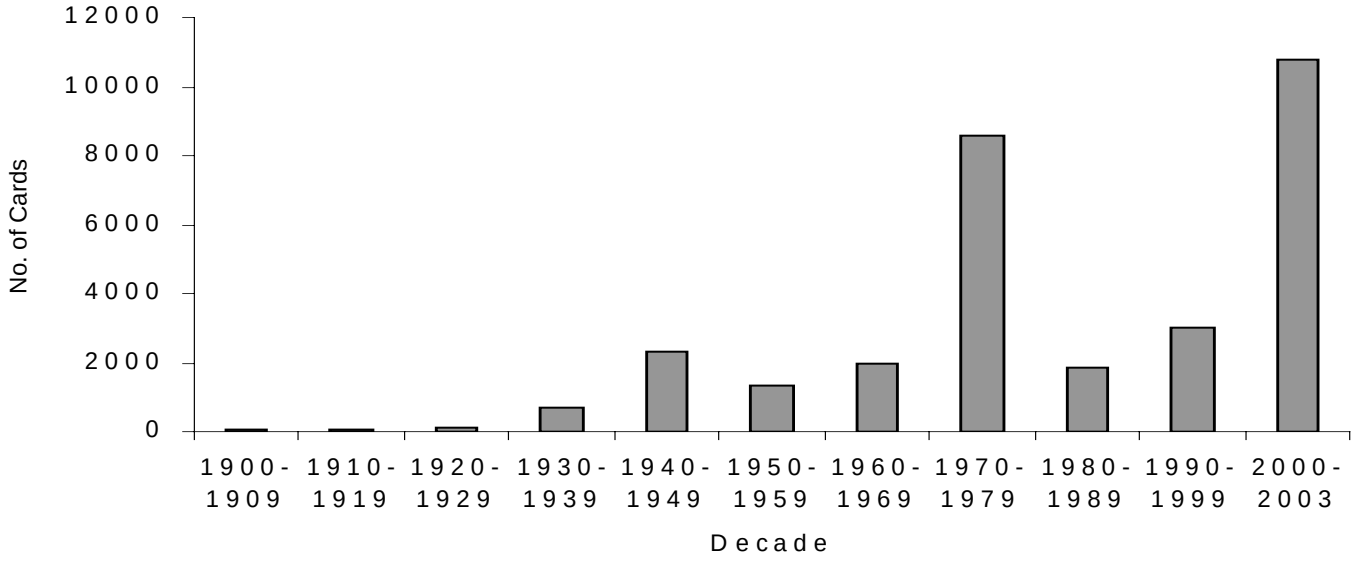


Figure 9. Summary of historical nest records by decade transferred to the British Columbia Nest Record Scheme by volunteers in 2004.

(Tofino) and **Jan Bradshaw** (Chase) tallied **Barn Swallow** records from **Lemmens Inlet** for our future analysis of trends in the province. **Rick Bonar** (Alberta) found a stack of old cards for the 1980s that were uncovered while moving storage boxes around his home. **Glen McInnes** (Mission) provided information from the 1990s. **Linda M. Van Damme** (Creston) completed historical cards for many people. **Vi** and **John Lambie** (Mackenzie) completed nest cards, mainly **Osprey**, from the files of the Peace-Williston Fish & Wildlife Compensation Program for 1995 to 2002. **Hilary Gordon** (Salmon Arm) continued her role as a regional co-ordinator by transferring information sent to her by correspondence, telephone, and word-of-mouth. **Les Gyug** (Westbank) provided significant information for five species of woodpecker from previous field studies. **Glenn R. Ryder** (Aldergrove) continued summarizing historical records from his field notes for all species dating back to 1943. **J. E. Victor Goodwill** (Victoria) organized many hundreds of breeding records from his extensive field notes in late 2003 for transfer to nest cards. **Joanna Preston** compiled nest cards from the field diaries of **Ivar Nygaard-Petersen** and **Mark Hobson**. **R. Wayne Campbell's** official retirement project started with the searching of museum catalogues, historical diaries and notebooks, and unpublished reports (e.g., Parks Branch summer naturalist reports) for breeding information. **Chris Siddle** found time before retirement to include a few old records with his 2004 cards.

Our entire **woodpecker** database grew considerably by the efforts of **Les Gyug**. Together with **J. Ross Munroe**, **Ray Werschler**, **Wayne Smith**, and **Jeff Hoyt**, they conducted research projects between 1996 and 2003 and found active nests for nine of the 12 species breeding in the province. **Williamson's Sapsucker**, at 49 nests, was a wonderful surprise. Their research covered 12 map grids.

Linda Van Damme transferred information from consultant reports for **Harlequin Duck** and **Great Blue Heron**. The Columbia Basin Fish and Wildlife Compensation Program sponsored these projects, conducted by Pandion Ecological Research. In total 206 breeding records were transferred.

Searches also continued by volunteers to extract breeding information from naturalist club newsletters like the *Muskrat Express*, *Wandering Tattler*, and *Shuswap Naturalist*.

Everyone records information differently. Some enjoy the experience of writing a detailed account of their observations from which we have to transfer useful information to a nest card. The original correspondence, however, remains on file.

As an example, in 1970 **Brigitte French** watched a pair of **Violet-green Swallows** nest in her yard in Coquitlam. This is her letter dated 11 January 1971:

Report on one pair of Green and Violet Swallows - Summer 1970

7th May: *We had one birdhouse with a 1 ¼" entrance hole located under the eaves (hanging) at the south side of the house and one pair of green and violet swallows came to inspect it. After this other pairs paid visits, but we don't know of course which one finally started bringing twigs and bits of grass in, which happened for the first time on the 10th May. They did not really get busy until the 14th May.*

18th May: *A pair of barn swallows arrives and seems to fight over the house. My husband rushes into the basement, makes two more nestboxes, which he hangs*

under the same eaves at even distances, but barn swallows decide instead to start building over the light-bulb in the carport. Report on them on separate page.

19th May: *Another pair of green and violet swallows arrives and fights over the house, gets beaten off, but does not take up one of the other two houses.*

21st May: *Only the female seems to be building the nest. He sits on the clothesline and watches and fights invaders off. Starlings try for the house too and he is not afraid to tackle them.*

30th May: *One blue egg in nest. She sits on it.*

7th June: *We did not try to look into the nest again in order not to disturb the birds. She is still sitting on the eggs, but leaves them more often than before.*

17th June: *The young ones must have hatched. Parents are coming and going all the time.*

6th July: *The young ones are still in the nest. Only one sits at the entrance hole and gets all the tidbits. We wonder how the other two make out. We leave on our holiday for Qualicum Beach and are unable to watch the young ones leaving the nest. In Qualicum we see a nest with green and violet swallows and they left the nest on the 9th July. We assume ours must have left at about that date too.*

No second brood. Mother keeps nest clean by carrying droppings away from the nest. A lot of droppings are left in the nest though.

We were able to extract useful breeding information from this letter as well as occurrence records for Barn Swallow and European Starling.

Although our emphasis will be to fill in some of the gaps for the 1980s we will continue to transfer historical information for all years.

List of Species with Total Breeding Records by Family

Family Gaviidae – Loons (136): Red-throated Loon – 5, Pacific Loon – 1, and Common Loon – 130.

Family Podicipedidae – Grebes (1,440): Pied-billed Grebe – 91, Horned Grebe – 51, Red-necked Grebe – 479, Eared Grebe – 649, and Western Grebe – 170.

Family Hydrobatidae – Storm-Petrels (139): Fork-tailed Storm-Petrel – 76, and Leach's Storm-Petrel – 63.

Family Pelicanidae – Pelicans (678): American White Pelican – 678.

Family Phalacrocoracidae – Cormorants (2,454): Brandt's Cormorant – 260, Double-crested Cormorant – 818, and Pelagic Cormorant – 1,376.

Family Ardeidae – Bitterns, Herons, Egrets, and Night-Herons (572): American Bittern – 1, Great Blue Heron – 565, and Green Heron – 6.

Family Cathartidae – New World (American) Vultures (4): Turkey Vulture – 4.

Family Anatidae – Geese, Swans and Ducks (5,338): Canada Goose – 898, Mute Swan – 9, Trumpeter Swan – 8, Wood Duck – 154, Gadwall – 142, American Wigeon – 300, American Black Duck – 1, Mallard – 1,154 (Figure 10), Blue-winged Teal – 145, Cinnamon Teal – 43, Northern Shoveler – 91, Northern Pintail – 123, Green-winged Teal – 58, Canvasback – 156, Redhead – 179, Ring-necked Duck – 90, Lesser Scaup – 298, Harlequin Duck – 73, Surf Scoter – 1, White-winged Scoter – 27, Bufflehead – 339, Common Goldeneye – 62, Barrow's Goldeneye – 560, Hooded Merganser – 54, Common Merganser – 218, and Ruddy Duck – 155.

Figure 10. Female Mallard with 9 Class IA young at Salmon Arm, BC. 2 June 2002 (Linda M. Van Damme).

Family Accipitridae – Osprey, Kites, Eagles, Hawks and Allies (720): Osprey – 416, Bald Eagle – 137, Northern Harrier – 4, Cooper's Hawk – 13, Northern Goshawk – 7, Broad-winged Hawk – 3, Swainson's Hawk – 8, Red-tailed Hawk – 113, and Golden Eagle – 19.

Family Falconidae – Falcons (85): American Kestrel – 12, Merlin – 12, Gyrfalcon – 1, Peregrine Falcon – 57, and Prairie Falcon – 3.

Family Phasianidae – Partridges, Pheasant, Grouse, Ptarmigan and Turkey (768): Chukar – 28, Ring-necked Pheasant – 45, Blue Grouse – 164, Willow Ptarmigan – 54 (Figure 11), Rock Ptarmigan – 12, White-tailed Ptarmigan – 54, Ruffed Grouse – 239, Spruce Grouse – 134, Sharp-tailed Grouse – 30, and Wild Turkey – 8.

Figure 11. Willow Ptarmigan sitting tight on a nest at Kusawak Lake, BC. 24 June 1999 (R. Wayne Campbell).

Family Odontophoridae – American Quail (81): Mountain Quail – 3 and California Quail – 78.

Family Rallidae – Rails, Gallinules and Coots (1,120): Virginia Rail – 17, Sora – 40, and American Coot – 1,063.

Family Gruidae – Cranes (13): Sandhill Crane – 13.

Family Charadriidae – Plovers (156): American Golden-Plover – 1, Semipalmated Plover – 35, and Killdeer – 120.

Family Haematopodidae – Oystercatchers (99): Black Oystercatcher – 99.

Family Recurvirostridae – Stilts and Avocets (2): Black-necked Stilt – 1 and American Avocet – 1.

Family Scolopacidae – Sandpipers, Phalaropes and Allies (219): Greater Yellowlegs – 10, Lesser Yellowlegs – 4, Solitary Sandpiper – 6, Wandering Tattler – 2, Spotted Sandpiper – 133 (Figure 12), Long-billed Curlew – 18, Short-billed Dowitcher – 1, Wilson's Snipe – 15, and Wilson's Phalarope – 30.

Family Laridae – Jaegers, Skuas, Gulls, Terns and Allies (6,763): Bonaparte's Gull – 11, Mew Gull – 14, Ring-billed Gull – 1,448, California Gull – 81, Herring Gull – 537, Glaucous-winged Gull – 4,552, Caspian Tern – 1, Forster's Tern – 21, and Black Tern – 98.

Family Alcidae – Auks, Murres and Puffins (224): Common Murre – 1, Pigeon Guillemot – 26, Marbled Murrelet – 19, Ancient Murrelet – 51, Cassin's Auklet – 72, Rhinocerous Auklet – 21, and Tufted Puffin – 34.

Family Columbidae – Pigeons and Doves (50): Rock Pigeon – 22, Band-tailed Pigeon – 5, and Mourning Dove – 23.

Family Tytonidae – Barn Owls (31): Barn Owl – 31.

Family Strigidae – Typical Owls (140): Western Screech-Owl – 22, Great Horned Owl – 72, Northern Hawk Owl – 3, Barred Owl – 5, Long-eared Owl – 17, Short-eared Owl – 8, Boreal Owl – 1, and Northern Saw-whet Owl – 12.

Family Caprimulgidae – Goatsuckers (22): Common Nighthawk – 17 and Common Poorwill – 5.

Family Apodidae – Swifts (13): Black Swift – 5, Vaux's Swift – 1, and White-throated Swift – 7.

Family Trochilidae – Hummingbirds (62): Black-chinned Hummingbird – 1, Anna's Hummingbird – 9, Calliope Hummingbird – 8 and Rufous Hummingbird – 44.

Family Alcedinidae – Kingfishers (37): Belted Kingfisher – 37.

Family Picidae – Woodpeckers (584): Lewis's Woodpecker – 21, Yellow-bellied Sapsucker – 41, Red-naped Sapsucker – 115, Red-breasted Sapsucker – 74, Williamson's Sapsucker – 107, Downy Woodpecker – 23, Hairy Woodpecker – 75, Three-toed Woodpecker – 26, Black-backed Woodpecker – 6, Northern Flicker – 68, and Pileated Woodpecker – 28.

Family Tyrannidae – Tyrant Flycatchers (301): Olive-sided Flycatcher – 4, Western Wood-Pewee – 18, Yellow-bellied Flycatcher – 2, Alder Flycatcher – 7, Willow Flycatcher – 15, Least Flycatcher – 9, Hammond's Flycatcher – 3, Gray Flycatcher – 2, Dusky Flycatcher – 16, Pacific-slope Flycatcher – 67, Eastern Phoebe – 5, Say's Phoebe – 15, Western Kingbird – 83, and Eastern Kingbird – 55.

Family Vireonidae – Vireos (36): Cassin's Vireo – 1, Hutton's Vireo – 10, Warbling Vireo – 16, and Red-eyed Vireo – 9.

Family Corvidae – Jays, Magpies and Crows (245): Gray Jay – 68, Steller's Jay – 14, Blue Jay – 5, Clark's Nutcracker – 7, Black-billed Magpie – 62, American Crow – 25, Northwestern Crow – 26, and Common Raven – 38.

Family Alaudidae – Larks (14): Skylark – 4 and Horned Lark – 10.

Family Hirundinidae – Swallows (1,853): Purple Martin – 26, Tree Swallow – 551, Violet-green Swallow – 68, Northern Rough-winged Swallow – 31, Bank Swallow – 92, Cliff Swallow – 638, and Barn Swallow – 447.

Family Paridae – Chickadees (172): Black-capped Chickadee – 48, Mountain Chickadee – 28, Chestnut-backed Chickadee – 80, and Boreal Chickadee – 16.

Family Aegithalidae – Bushtit (47): Bushtit – 47.

Family Sittidae – Nuthatches (42): Red-breasted Nuthatch – 20, White-breasted Nuthatch – 7, and Pygmy Nuthatch – 15.

Family Certhiidae – Creeper (43): Brown Creeper – 43.

Family Troglodytidae – Wrens (141): Rock Wren – 2, Canyon Wren – 4, Bewick's Wren – 24, House Wren – 26, Winter Wren – 43, and Marsh Wren – 42.

Family Cinclidae – Dipper (67): American Dipper – 67.

Family Regulidae – Kinglets (55): Golden-crowned Kinglet – 43 and Ruby-crowned Kinglet – 12.

Family Muscicapidae – Bluebirds, Thrushes and Allies (820): Western Bluebird – 22, Mountain Bluebird – 451, Townsend's Solitaire – 11, Veery –2, Swainson's Thrush – 34, Hermit Thrush – 21, American Robin – 267, and Varied Thrush – 12.

Family Mimidae – Mockingbird, Thrashers and Allies (14): Gray Catbird – 8, Northern Mockingbird – 2, and Sage Thrasher – 4.

Family Sturnidae – Starling and Allies (139): European Starling – 138 and Crested Myna – 1.

Family Motacillidae – Wagtails and Pipits (9): American Pipit – 8 and Sprague's Pipit – 1.

Family Bombycillidae – Waxwings (45): Bohemian Waxwing – 1 and Cedar Waxwing – 44.

Family Parulidae – Wood-Warblers (223): Tennessee Warbler – 7, Orange-crowned Warbler – 26, Nashville Warbler – 3, Yellow Warbler – 38, Yellow-rumped Warbler – 55, Black-throated Gray Warbler – 7, Black-throated Green Warbler – 1, Townsend's Warbler – 23, Blackpoll Warbler – 5, American Redstart – 7, Ovenbird – 2, Northern Waterthrush – 13, Connecticut Warbler – 1, MacGillivray's Warbler – 7, Common Yellowthroat – 20, Wilson's Warbler – 5, and Yellow-breasted Chat – 3.

Family Thraupidae – Tanagers (15): Western Tanager – 15.

Family Cardinalidae – Cardinals, Grosbeaks and Allies (42): Rose-breasted Grosbeak – 4, Black-headed Grosbeak – 23, and Lazuli Bunting – 15.

Family Emberizidae – Towhees, Sparrows, Longspurs and Allies (392): Spotted Towhee – 32, American Tree Sparrow – 5, Chipping Sparrow – 43, Clay-colored Sparrow – 3, Vesper Sparrow – 8, Lark Sparrow – 2, Savannah Sparrow – 20, Grasshopper Sparrow – 1, Fox Sparrow – 19, Song Sparrow – 76, Lincoln's Sparrow – 12, Swamp Sparrow – 2, White-throated Sparrow – 5, White-crowned Sparrow – 18, Golden-crowned Sparrow – 13, and Dark-eyed Junco – 133.

Family Icteridae – Blackbirds, Orioles and Allies (828): Bobolink – 1, Red-winged Blackbird – 395, Western Meadowlark – 6, Yellow-headed Blackbird – 94, Rusty Blackbird – 12, Brewer's Blackbird – 85, Common Grackle – 40, Brown-headed Cowbird – 162, and Bullock's Oriole – 33.

Family Fringillidae – Cardueline Finches and Allies (98): Gray-crowned Rosy-Finch – 5, Pine Grosbeak – 2, Purple Finch – 8, Cassin's Finch – 4, House Finch – 41, Red Crossbill – 1, White-winged Crossbill – 1, Common Redpoll – 1, Pine Siskin – 10, American Goldfinch – 23, and Evening Grosbeak – 2.

Family Passeridae – Old World Sparrows (52): House Sparrow – 52

Total nests/broods – 27,645 ; 266 species
(2004 season – 6,984 ; historical – 20,661)

Figure 12. A Spotted Sandpiper sitting on a nest at Kiskatinaw River, BC. 18 June 2004 (R. Wayne Campbell).

List of Active (bold) and Historical Contributors in Alphabetical Order

A **Nadine Adams - 1**, **A. Allen - 1**, E. M. Anderson - 19, **Errol Anderson - 23**, Errol Anderson & George P. Sirk - 1, **Morgan Anderson - 23**, **R. M. Anderson - 1**, William J. Anderson - 14, William J.. Anderson & Bob Baker - 1, **Kris Andrews - 46**, **Anonymous - 2**, **Cathy Antoniazzi - 2**, **Janice E. Arndt - 22**, Genevieve Arnold - 15, Dennis Ashby - 1, B. Ashlee - 3, D. Ashley - 1, **Alf Atkins - 1**, **Trevor & Laila Atkins – 2**, **Vicky Atkins - 313**, **Vicky Atkins & Alice Beals - 55**, R. N. Atkinson - 2, and **Anne Avery – 1**.

B British Columbia Fish and Wildlife Branch - 561, British Columbia Game Commission – 65, British Columbia Parks Branch - 45, Bob Baker - 22, **Robert Baker - 31**, **Geoff Barnard - 41**, Tony Barnard - 1, Raymond Barnes - 155, **Avery Bartels - 1**, F. Bath - 1, Derek Beacham - 34, **Alice Beals - 41**, K. R. Beckett - 2, Frank L. Beebe - 48, **Barbara Begg - 8**, Grace Bell - 1, **Jim Bell - 1**, **Winnifred M. Bennie - 2**, **Jennifer Bergen & F. Don Young - 8**, Robin Best - 29, **Keith Betton - 1**, **Barbara Bevan - 1**, **Ed Beynon - 212**, Jim Biggar - 5, L. B. Bishop - 1, Ann Blackmore - 1, David Blevins - 1, **Peter Blokker - 8**, Donald A. Blood - 34, Rick Bonar - 34, Rick & Norma Bonar – 2, **Heather Bond - 1**, **R. E. Boston - 1**, **Jack Bowling - 17**, **Jan Bradshaw - 10**, **John Brett - 2**, **Tom Briggs - 1**, **Tom Brighouse & John Henderson - 1**, John Broadhead - 1, Allan C. Brooks - 82, **J. A. Brooks - 1**, **W. E. Brooks - 1**, **Doug Brown - 345**, **Gordon Brown - 1, J. A. Brown - 1, Quentin Brown - 2**, J. S. Burcham - 1, Joop Burgerjon - 1, **Clyde W. Burton - 4**, **Beverly H. Butcher - 112**, and Robert W. Butler - 896.

C Creston Valley Wildlife Management Area – 1, **Mike Caldwell - 2**, **T. Caldwell - 2**, G. Calef & Stephen R. Johnson - 1, Elmer Callin - 5, Joy Calvert - 2, **James Cameron - 4**, **D. Sean Campbell - 1**, **Eileen C. Campbell - 5**, **Lucille Campbell - 2**, **R. Wayne Campbell – 2,494**, **R. Wayne & Eileen C. Campbell – 886**, R. Wayne Campbell & A. L. Meugens - 5, **R. Wayne Campbell & Doug Brown - 25**, R. Wayne Campbell & Rudolf H. Drent - 1, R. Wayne Campbell & Stuart Johnson - 269, Peter Candido - 1, **D. Carey - 1**, G. Clifford Carl - 24, G. Clifford Carl, Charles J. Guiguet & G. A. Hardy - 1, Alan Caverly - 1, Ed Chan-Sing - 1, **Chris Charlesworth - 121**, **Mary Charlton - 1**, C. Christensen - 4, Andy Christianson - 1, Ricci Ciccimmare - 1, **C. Clark - 1**, Colin Clasen - 1, J. O. Clay - 145, George Clulow - 1, **Roy and June Cochrane – 1**, D. Code - 114, **R. Collins - 7**, R. & T. Collins – 2, **Cyril Colonel - 22**, **Gwen Colonel - 1**, John Comer - 78, Dave I. Comfort & G. S. Hackman - 1, David Connar - 1, Les Cooks - 3, John K. Cooper - 13, John K. Cooper & Arthur L. Meugens - 1, John M. Cooper - 2, Frank Cotton - 1, **Eve & Mel Coulson – 8**, **Vic Cousineau - 39**, David Crack - 7, Jean Craig - 4, R. A. Cumming - 3, **Jean Cunningham - 1**, **Chris Czaijkowski - 14**, and Milo D'Angelis - 9.

D **Ed & Monica Dahl – 11**, Brenda Darchuk - 1, S. J. Darcus - 13, **A. Davidson - 9**, **Gary S. Davidson - 7**, Brian Davies - 46, **Jeremy Davis - 1**, Neil K. Dawe - 2, **Cliff Day - 20**, Alec Deas - 2, Charles deBlois Green - 20, Marshall Denhoff - 4, Brent Diakow - 1, Mel Dianna - 1, **Dorothy Didock - 11**, Fred Dobson - 1, Uma Dobson - 2, Tom Donald - 1, **Adrian Dorst - 50**, Douglas D. Dow - 1, Rudolf H. Drent - 75, Ducks Unlimited Canada – 1,304, Betty Dudley - 1, **Eva Durance - 2**, and **Linda Durrell - 1**.

E Barry Edwards - 7, R. Yorke Edwards - 3, R. Yorke Edwards & David Stirling - 1, R. Yorke Edwards & Ralph W. Ritcey - 2, **P. Elliott - 11**, Maurice Ellison - 2, **L. Ellsworth – 1**, Environment Canada – 104, and Charlie Estlin - 1.

F **S. Fagan - 1**, Steve Fairbairn - 20, W. & D. Fairbank – 1, J. Fairfull - 1, A. Farrer - 1, Ray Felthan - 1, Randy Findlay - 1, **Jess Findlay - 1**, Robert G. Foottit - 7, **Michael Ford - 1**, **Trevor Forder - 1**, **George Foreman - 1**, John W. Foster - 2, **Ron Fraser - 2**, John Freeman - 1, Brigitte French - 2, D. Lorne Frost - 3, D. Lorne Frost & John K. Cooper - 1, and Ralph Fryer - 2.

G Mark Gardiner & Douglas J. Haddow - 3, Mark Gardiner & Louise A. Goulet - 1, Mark Gardiner & Robin Taylor - 5, **Lynne Gardner - 2**, Fred Gornall - 1, Bryan R. Gates - 1, **Ralph Gerein - 1**, Lillian Gest - 1, Les A. Gibbard - 6, Les A. & Violet Gibbard – 9, R. T. Gibbard - 1, Janet Gifford - 1, **Jim Ginns - 93**, Trent Glukler - 1, Grant Goddard - 2, John Goodacre - 1, J. E. Victor Goodwill – 1,003, Kent Goodwin - 1, J. Paul Goossen & Robert W. Butler - 9, **Hilary Gordon - 24**, **Orville Gordon - 33**, **Hilary & Orville Gordon – 176**, **Hilary & Orville Gordon & Ted Hilary – 2**, Richard J. Gordon - 1, W. Gorman - 5, **Ted Goshulak - 3**, A. G. Gosling - 1, **F. Gould - 1**, Louise A. Goulet & Robin Taylor - 1, C. Goysuch - 1, Douglas J. Graham - 8, James Grant - 4, Al Grass - 65, **K. Graves - 1**, Ron Gray - 2, **Bob Green - 1**, **Jim Green - 2**, **Maurice Gregory - 5**, Robert Greyell - 28, **Andrew Griffiths - 1**, William Gromberg - 4, Charles J. Guiguet – 1,079, Charles J. Guiguet & G. Clifford Carl - 47, Charles J. Guiguet & Patrick W. Martin - 1, J. Guthrie - 1, Jim Gylus - 1, Richard Gysendorfer - 1, **Les Gyug - 177**, and **Les Gyug & Chris Charlesworth - 1**.

H G. S. Hackman & D. I. Comfort - 2, Douglas J. Haddow - 16, Douglas J. Haddow & Louise A. Goulet - 8, Douglas J. Haddow & Margriet Wyborn - 8, Douglas J. Haddow & Mark Gardiner - 3, Douglas J. Haddow & Robin Taylor - 3, Lea Haggert - 1, J. Halmon - 1, **Larry Halverson - 121**, Roger Hamilton - 1, L. Hansvall - 4, **Willie Haras - 72**, George A. Hardy - 6, **Alton S. Harestad - 2**, Barry Harman - 3, **G. Harris - 1**, Robert D. Harris - 4, **J. Hart - 4**, David F. Hatler - 835, David F. & Marietta E. Hatler – 15, David F. Hatler &

Adrian Dorst - 651, David F. Hatler & Jim Biggar - 294, David F. Hatler & R. Wayne Campbell - 1, David F. Hatler, R. Wayne Campbell & Charles J. Guiguet - 1, Marietta E. Hatler - 1, **Lauren Hayes - 2**, Rex Hayes - 4, Grant W. Hazelwood - 4, **Ruth Hellevang - 5**, **Charles Helm - 8**, Ed G. Hennan - 61, J. Hepburn - 1, **Penny Herring - 5**, R. Jerry Herzig - 1, **Werner H. Hesse - 1**, **Werner H. & Hilde Hesse – 31**, **Ted Hilary - 62**, **Mark Hobson - 36**, Keith Hodson - 3, Keith Hodson & Brian Davies - 1, Martin W. Holdom - 4, J. & M. Holman – 1, **George Holmes - 1**, **L. Holmes - 1**, Paul Holmes - 1, **Ron Holmes - 1**, **R. Hooper - 1**, **Bob Houston - 1**, C. Howatson - 1, Jeff Hoyt - 1 and Jack Husted - 2.

I **Marian Innes – 3**, Marian & Doug Innes - 1 and **Margaret Irving - 2**.

J **M. Jackson - 1**, **Stuart Jackson - 1**, **Len Jellicoe - 2**, Richard S. Jerema - 109, Richard S. Jerema & R. Janes - 1, Leo Jobin - 10, **A. Johnson - 1**, **Bill Johnson - 2**, **Daryl Johnson - 1**, **Fran Johnson - 1**, Stuart Johnson - 5, **Ann Johnston - 1**, **Marlene Johnston - 1**, **S. Johnston - 2**, Walter B. Johnstone - 4 and **Dianne Jones - 1**.

K V. Kembel - 1, **A. Kennedy - 1**, **Ken Kennedy – 1,503**, **Ken Kennedy & R. Wayne Campbell - 1**, **Paul Kennedy - 1**, Frances Kermode - 2, **Sandra Kinsey - 4**, **Sandra Kinsey & Laird Law - 15**, Ethel Kippen - 287, Richard W. Knapton - 1, John G. & Gladys J. Knezevich – 1, **Nancy Krueger - 16**, **Nancy Krueger & Cathy Antoniazzi - 5**, **Nancy Krueger & Jack Bowling - 2**, **Nancy Krueger, Laird Law & Sandra Kinsey - 1**, **Nancy Krueger & Tod Heakes - 1**, George Krupper - 11 and Gladys Kuezevich - 1.

L Frank Lacey - 1, **Elsie Lafreniere - 1**, Hamilton M. Laing - 35, **Lynne Laiser - 5**, **F. Lamb - 1**, **F. Lambert - 3**, **David Lambie - 1**, **John & Vi Lambie – 86**, **Fraser Lang - 1**, **Laird Law - 26**, **Laird Law & Sandra Kinsey - 90**, **Roy Lawrence - 2**, Ray Le Bell - 2, Martin C. Lee - 7, Sybil Lees & Elspeth Kerr - 1, Douglas A. Leighton - 1, Enid K. Lemon - 4, Jack Lenfesty - 1, **Pat Levitt - 7**, B. C. Lewall - 1, Louise Lewall - 1, G. Lilieu - 1, Vernon Logan - 1, Mr. Lohrbrunner - 1, Robert E. Luscher - 21, F. Lutz - 1 and Robert Lyske - 1.

M **B. MacDonald - 15**, **Steven MacDonald - 2**, R. R. MacFarlane - 19, Rob MacKenzie-Grieve - 4, Walter S. Maguire - 48, **B. Mair - 1**, Murray A. Mark - 7, Patrick W. Martin - 493, Bob Mason - 1, **E. Mathews - 1**, **Wayne Matkoski - 2**, Philip Matty - 587, Glen Maw - 1, T. T. McCabe - 1, **James W. McCammon - 2**, **A. McDonald - 2**, **A. June McGhee - 2**, **Carolyn McGhee - 43**, **Jack McGhee - 1**, **Carolyn & Jack McGhee – 2**, **Glen McInnes - 2**, **Glen & Isabel McInnis –3**, **Glen McInnes, Gerry Powers & Glenn R. Ryder - 1**, **Susan McIntyre - 1**, **Peter McIver - 1**, George M. McKay - 31, R. H. McKay - 4, Margol McKinney - 1, **Sue and Les McLEan –2, Ed McMackin - 1**, **Michael McMann - 43**, Charles McNab - 1, **Al McNeil - 2**, **Martin K. McNichol - 1**, Shauna Mead - 1, **Joan Meredith - 1**, Arthur L. Meugens - 5, Arthur L. Meugens & John K. Cooper - 48, Ron Meyer - 2, H. Middleton - 3, Hetty Miller - 1, **T. Miller - 1**, **Jim Mitchell - 1**, Roger Montieth - 1, Darlene Mooney - 2, Darlene Mooney & Marrel Methot - 1, Cy W. Morehen - 3, **Mike Morrell - 1**, **Stephen Morris - 4**, Allister Muir - 27, Allister & Margaret Muir – 2, Allister Muir & John G. Sarles - 1, **Emily Muller - 8**, David A. Munro - 52, J. Ross Munro - 36, James A. Munro – 1,339, **Irene & Maury Murphy – 4**, **Carol Murray – 1**, **Steve Myers – 1**, and **Steve and Lillian Myers - 1**.

N Nature Bay News - 9, **Eve J. Neale - 13**, **Laure W. Neish - 9**, Cait Nelson - 1, **Don Nelson - 6**, R. Wayne Nelson - 2, C. F. Newcombe - 1, **R. Newman - 1**, **Fran Newson - 2**, **Tim Newson - 1**, **B. Newton - 1**, Phil Nott & W. Jack Schick - 2, Doris E. Nye - 1, **Ivar Nygaard-Petersen – 74**, and **Mark Nyhof – 302** (Figure 13).

O Derek O'Brien - 1, Chris O'Donnell - 22, Lowell Orcutt - 11, E. O. Ormsby - 3, Ted Osmond-Jones - 9 and Gerry Ostendorf - 1.

P Calvor Palmateer - 1, C. J. Palmer - 1, **G. Palmer - 3**, **R. Palmer - 1**, **Pandion Research - 34**, **J. Parker Norris - 1**, **Parks Canada - 1**, Mary Pastrick - 4, C. A. Patch - 3, **A. Patterson - 1**, **Jim Patterson - 10**, W. A. B. Paul - 46, Peace/Williston Fish & Wildlife Compensation Program - 209, Theed Pearse - 1, David & Lynn Pedley – 2, Ed Pellizzen - 1, Gena & Ann Perkins – 1, **Janne Perrin - 41**, **Janne Perrin & Larry Gravel - 1**, **Karl Perrin - 10**, **Brian Perry - 2**, **R. Peterson - 1**, **Ronald M. Peterson - 62**, **Scott Peterson - 2**, **Ralph Phillips - 2**, Roy W. Phillips - 2, **Mark Phinney - 4**, **Dirk T. Rinehart-Pidcock - 41**, R. W. Pilsbury - 6, Tom Plath - 58, Phil Pohlman - 1, John E. Polson - 5, **Cathie Porter - 2**, Ilya Povalyaev - 3, **G. Allen Poynter - 101**, Edward A. Preble - 1, **Joanna Preston - 12**, **Joanna Preston & Owen Taylor - 1**, **Michael I. Preston - 105**, **Michael I. & Joanna Preston - 275**, **Michael I. Preston & R. Wayne Campbell - 171**, **Sandy Proulx – 433**, and **Catherine Prowse - 1**.

P Kenneth Racey - 9, W. Rae - 1, **T. Randall - 1**, Gary Rathbone - 1, W. Ray & M. McFeat - 1, **R. Reed- 1**, Chris Reid - 1, **Sheila Reynolds - 1**, S. N. Rhoads - 6, Diane Richardson - 1, Gillian & Trevor Richardson – 2, Frank Richardson - 1, **J. Richardson - 2**, W. E. Ricker - 10, G. Riley - 1, Ralph W. Ritcey - 335, **Anna Roberts - 3**, Sara Robichaud & Lori Walker - 1, Lance Robinson - 1, Robin D. Robinson - 1, Robin D. and W. Robinson – 1, **S. Robinson - 28**, **I. Laurie Rockwell - 17**, Michael S. Rodway - 23, Thomas H. Rogers - 3, **Ian G. Routley - 8**, **Ian G. Routley, Ken G. Wright**, **& Bob**

Houston - 1, Charles Rushton - 1, **Joy Russell - 1**, **Glenn R. Ryder – 1,597**, and Glenn R. Ryder & Al Grass - 1.

S John G. Sarles - 2, Ron Satterfield - 4, **Andrew Saunders - 2**, Chris Saunders - 2, Chris Saunders & Ed Pellizzon - 1, W. Jack Schick - 294, Brian Scott - 1, **Lorraine Scott - 4**, K. E. Seale - 6, **Barbara Sedgwick - 18**, Mrs. Sewell - 1, **Al Sharp - 1**, **Verena Shaw - 73**, D. Shepard - 505, **E. Shepard - 1**, **G. Shepard - 1**, **John Shepard - 2**, T. Shepard - 24, Tom Shermer - 1, F. M. Shillaker - 4, T. M. Short - 3, **Chris Siddle - 83**, Joanne Siderous - 2, **Ed Silkens - 11**, **Jim Sims - 13**, George P. Sirk - 49, Brian Slater - 1, Mrs. Slater - 1, J. Slocombe & G. Nicol - 1, **D. Smith - 20**, **Kate Smith - 2**, **J. Smith - 9**, Wayne Smith - 1, Herbert Spalding - 1, **Gail Spitler - 1**, Prue & Bernie Sptimann – 18, William Spreadborough - 29, **John Stacey - 1**, J. Stainer - 1, J. & T. Stanwell-Fletcher – 4, John Steeves - 1, **Dan Stevens - 2**, **Tom Stevens - 4**, Bob & Carol Steventon – 1, Bill Stewart - 1, Geoff E. Stewart - 3, R. M. Stewart - 82, **David Stirling - 16**, **Heather Stirling - 1**, Jean Stoner - 3, Clark P. Streator - 2, Hazel & Jim Street – 1, June Strickland - 1, Ken R. Summers - 10, Richard Swanston - 3, Harry S. Swarth - 29, Harry S. Swarth & B. Kellogg - 1, **G. F. Swindle – 19**, and P. Sykes - 5.

T Mike Tabak - 2, Robin Tagles - 1, Doreen Tait - 3, E. M. Tait - 4, Ian Tait - 1, R. Tamasi - 1, **G. Taylor - 2**, **K. Taylor - 1, Robin Taylor - 1**, **W. L. Taylor - 4**, **Howard A. Telosky - 8**, John S. Tener - 1, John S. Tener & Dave Calls - 4, **Jack Thomas - 12**, **R. Thomas - 1**, David Thompson - 644, Peter Thornton - 4, **J Todd - 1** Mark Tornatoro - 1, W. E. Traile - 1, **Roger Tremblay - 2**, R. Tyner – 1, and Danny Tyson - 1.

V **Linda M. Van Damme - 703, Linda M. Van Damme & Colleen Erickson - 1**, **Linda M. Van Damme & Cyril Colonel - 86**, **Linda M. Van Damme & Marcia Long - 1**, **Ben van Drimmelen - 2**, **Vancouver Natural History Society - 5**, William A. Verbrugge - 43, **Victoria Natural History Society – 1**, and John Vooys- 1.

W Carson Wade - 1, **Donald E. Waite - 1**, **Betty Walker - 7**, **Ron Walker - 2**, **T. Walker - 1**, **Neil Walters - 2**, Ross G. Waters - 13, **Betty Watson - 2**, Brad Watts - 3, Brian Watts - 2, Melissa Webb - 1, Robert Webb - 1, Robin W. Weber - 8, Wayne C. Weber - 3, Robert B. Weeden - 6, **Rita Wege - 62**, **Rita Wege & Larry Prosser - 98**, Ray Wershler - 11, **H. West - 1**, **Hugh Westheuser - 1**, Edward G. White - 1, **W White - 1**, Virginia Whitelaw - 9, A. L. Wilk - 1, Joe Wilkowski - 1, M. Y. Williams - 1, **Murray Williams - 205**, **P. Williams - 1**, **R. Williams - 1**, J. Winnie - 3, Ben P. Wintemute - 6, **Marcus Womersley - 8**, **Douglas Wood - 1**, **Lynne Wood - 78**, **John G. Woods - 1**, Dave Woolgar - 1, Glenn Wootton - 1, D. B. Wright - 1, Gwen D. Wright - 4, **Ken G. Wright - 24**, **Ken G. Wright & Bob Houston - 5**, **Ken G. Wright & Ian Routley - 5**, **Ken G. Wright, Ian Routley & Vivian Birch-Jones - 2**, **Ken G. Wright & Nadine McKay - 1**, **Ken G. Wright & Trevor Goward - 1**, Richard T. Wright - 3, Richard T. & Rochelle Wright – 1, Richard T. Wright & Robin Best - 1, Margriet Wyborn - 1, Margriet Wyborn & Mark Gardiner - 2, Margriet Wyborn & Murray Shunter - 4, Mark Wynja – 2, and J. Wynne - 13.

Y **Mike Yip - 5** and C. J. Young - 2.

Z Rick Zapf - 3, Barry Zettergreen - 142, Joan Zina - 1 and Fred C. Zwickel - 1.

Total Contributors -
(Active - 273;** Historical - 358**)

Figure 13. Long time wildlife artist and nest record contributor Mark Nyhof often donates artwork to the British Columbia Nest Record Scheme Annual Reports, including this Eastern Kingbird.

Wildlife Workshops and Extension

Workshops and lectures to emphasize the importance of keeping information from British Columbia in the province and centralized continued in 2004. Each extension program discusses topics, such as climate change, species and population trends, and range contractions and expansions, using long-term data. To date the response has been very encouraging.

Extension programs were presented in **Vancouver**, **Victoria**, **Nanaimo**, **Tofino**, **Campbell River**, **Parksville**, **Vernon**, **Kelowna**, **Coquitlam**, **Port Coquitlam**, **Duncan**, **Ladysmith**, and **Courtenay**.

WILDLIFE ALERT

Barn Swallow - Update

Many of our participants are grateful that we have made public the plight of the Barn Swallow (Figure 14) and are now contributing to a centralized database that may help explain their decreasing numbers. A typical concern was written by Joan Heriot: "*For the first time in at least 10 years no Barn Swallows nested in the porch of house. This year* [1981] *no swallows had been seen in this area* [e.g.,Kalamalka Lake] *until a pair flew into the porch on May 11th but were not seen there again*".

Figure 14. Young Barn Swallows ready to fledge at Tatogga Lake, BC. 2 July 1999 (R. Wayne Campbell).

From Lemmens Inlet near Tofino Mark Hobson writes: "*In the summers of 1993, 1994, 1995, and 1996 a pair (most likely the same birds) nested and produced young, fledging at least 11 offspring in these summers. In 1997 the male returned almost to the day (on April 21st) without his mate. After about a week he took off and returned 3 weeks later with what appears to be a new female. She is too cautious of the floathouse – and the pair departs.*

From May 1997 to May 2004 there are no Barn Swallows present at the floathouse. One lone male flies around checking out the eves on May 4th, 2004 but no nesting occurs".

These are samples of typical stories being sent to us from around the province. We would appreciate other documentation of the decline of Barn Swallows including checking in 2005 colony sites that you may have visited in the past.

In 2004 many heeded our notice and went back through notebooks to transfer information to cards. **Mark Hobson**, a busy wildlife artist, took time to extract all of his 22 notebooks for the **Lemmens Inlet** area near Tofino. **Wayne Campbell** started pulling out breeding records for **Burnaby** from his field notes for the 1960s.

Over the past six years 944 nest cards have been received by the Wildlife Data Centre, enough to start our analysis (Table 2).

Table 2. Six year summary of the number of Barn Swallow nest record cards received for the period 1999 to 2004. *We did not distinguish between historical and current cards in *BCNRS Annual Reports* prior to 2001.

Year	Current Year	Historical	Total
1999*	-	-	114
2000*	-	-	163
2001	82	12	94
2002	52	4	56
2003	57	13	70
2004	194	214	447

Our 2004 total was very impressive – 447 nests. Nearly 20 % of these were from a concentrated effort by **Cyril Colonel** and **Linda Van Damme** to survey and document Barn Swallow nestings in the **Creston Valley**. They produced a poster (see Inside Back Cover) and placed it strategically throughout the Valley encouraging residents to notify them of nests. Then, the task of locating, checking, and photographing every nest began. At the end of the season Cyril compiled a coloured booklet that complements the nest cards. This approach seems so reasonable yet over our 50 years it took a farmer from Creston, with a little help from a friend, to bring logic to how we should be documenting and recording information for future reference.

In total Cyril and Linda checked 179 nests of which 87 (49 %) were active. From these 241 young hatched (2.8 per nest) and 178 young fledged (2.0 per nest). Almost all of the nests were located in buildings in farmland at 11 sites.

The Creston Valley survey can be repeated in the future with confidence that data can be easily compared with the 2004 effort. Linda has recently reported (April 2005) that three of the nesting barns in the Creston Valley supporting nesting Barn Swallows in 2004 have been demolished.

Again Cyril's report points to the necessity of having a centralized repository for wildlife information.

Carolyn McGhee was really thinking about birds when she visited the **Piper's Glen Resort** at Fraser Lake. She had remembered that a "colony" of Barn Swallows had been reported for the resort in *The Birds of British Columbia*. That total was 18 nests in 1977. Not only did she count all the nests in 2004 (7 nests of which 4 were definitely active) but she convinced the owner to participate in the Nest Record Scheme!

In addition to collecting historical and current breeding information on Barn Swallows we have started bringing together all sightings, published and unpublished reports, and specimen records for this species. By the end of 2005 we estimate that our working database will approach 120,000 individual records, enough information to develop a plan for analysis.

Part of our program will be to summarize information and make it available to a wide audience with recommendation for mitigation where it is needed. We still have, however, a huge challenge to educate people about Barn Swallows and our concerns. An example comes from an e-mail Laure Neish sent to birders on 7 April 2004:

"*My trip to SunOka Beach Provincial Park today left me quite dismayed. Painters were at the washroom building setting up their paint stuff and I noticed that all of the Barn Swallow nests that had been under the eaves had been scraped off. Three of these nests had been active with an adult sitting on them for the past week to 10 days. The painter said he had refused to take them down so the Facility Operator did it....How ironic that I was there to do a program with school kids called Nature's Nurseries, where they discover how wild babies are raised in the park*".

LONG-TERM MONITORING AND INVENTORY PROJECTS

Each year staff and volunteers at the **Biodiversity Centre for Wildlife Studies**, with help from field naturalists, continue some aspect of its long-term programs to monitor wildlife populations. We actively survey areas every year while at the same time, in the off-season, historical information is being transferred to various databases. All hard and electronic copies are permanently housed in the **Wildlife Data Centre** in Victoria.

In 2004, projects related to the **Nest Record Scheme** included thorough surveys of **colonial-nesting fresh-water birds** (e.g., Eared Grebe (Figure 15), Western Grebe, Forster's Tern, Black Tern, Marsh Wren, Yellow-headed Blackbird, and Red-winged Blackbird) and **terrestrial bird colonies** (e.g., Bank Swallows), monitoring **raptor nests** (e.g., Osprey), **wetland surveys** (e.g., Pied-billed Grebe and American Bittern), **owl surveys** (e.g., Barn Owl, Great Horned Owl, and Long-eared Owl), **loon surveys**, and systematically searching **specific habitats** (e.g., alpine, riparian, and grasslands) for nesting birds.

Figure 15. Eared Grebe nest and eggs at Lost Lake, BC. 20 June 2004 (R.Wayne Campbell).

Nest Box Trails

Thousands of nest boxes have been erected around the province for bluebirds and waterfowl. Other cavity-nesting species, including some small mammals, utilize these nest sites while a small group of committed naturalists visit the boxes to document activity and nest success.

We are grateful to the following Individuals who monitored nest boxes in 2004: **Hilary Gordon** (Chase to Pritchard and Nicola Lake), **Betty Walker** (Oliver), **Willie Haras** (Kamloops), **Beverly H. Butcher** (Cariboo), **Cliff Day** (Vernon), **Sandy Proulx** (Quesnel), **Dirk Rinehart-Pidcock** (Kaslo), **Vicky Atkins** and **Alice Beals** (north Okanagan), **Vic Cousineau** (Lister), **Linda Van Damme** (Creston Valley), and **John** and **Vi Lambie** (Mackenzie).

Useful comments on individual nest boxes have increased and add to the value of the record as well as the database. And there are some surprises. For example, on 15 May **Sandy Proulx** found a **Mountain Bluebird** egg in a box on Buch Ridge. By 2 June a pair of **Tree Swallows** had built over the bluebird nest and had laid five eggs. On 16 June there were five Tree Swallow nestlings and on 1 July there were two Tree Swallow nestlings as well as one Mountain Bluebird nestling that left the nest when it was checked. Sandy is confident that the Tree Swallow hatched

the Mountain Bluebird eggs and when it fledged, an adult male Mountain Bluebird immediately attended it to.

Wetland Monitoring

Part of our continuing wetland monitoring program around the province includes direct counts and scientific estimates of colonial-nesting birds like grebes, cormorants, geese, herons, coots, gulls, terns, wrens, and blackbirds.

Traditional wetlands were surveyed again as well as many new marshes, lakes, and ponds around the province. Careful counts, with additional descriptive field notes often accompanied by photographs, were received for the **Creston Valley** (Linda Van Damme, Cyril Colonel, and G. Allen Poynter), **Shuswap Lake** area (Tom Brighouse, John Henderson, Ted Hilary, Frank Kime, and Hilary Gordon), **Okanagan Valley, Queen Charlotte Islands, Cariboo,** and **central British Columbia** (Doug Brown), **Hudson's Hope-Chetwynd-Tumbler Ridge-Fort St. John-Dawson Creek-Goodlow** region (Wayne Campbell), **Williams Lake** (Kris Andrews), Chichester Marsh in **Kelowna** (Chris Charlesworth), **Swan Lake, Vernon** (Vicky Atkins), **Kamloops** (Willie Haras), **Vancouver Island** (Mark Nyhof), the vicinity of **Parksville** (G. Allen Poynter), and **Worth** (Sandra Kinsey and Laird Law).

Figure 16. Adult Trumpeter Swans with two cygnets on Halfmoon Lake, BC, were just one of many confirmed breeding birds during a survey of this lake in 2004. 17 June 2004 (R. Wayne Campbell).

Small local wetlands contribute greatly to the nesting populations in larger geographic areas (Figure 16). **Vicky Atkins** surveyed a cattail clump in a marsh 10 m x 3 m near **Vernon** and found six pairs of nesting **Red-winged Blackbirds.** Unfortunately, the site was cleared away for "road improvements'". The Biodiversity Centre for Wildlife Studies is currently developing a publication that will list the critical breeding periods for various regions throughout the province so that maintenance activities can be completed without harm to nesting birds.

Western Grebes

Linda Van Damme continued her program of monitoring Western Grebes on **Duck Lake** near Creston. Unlike most such programs that deal entirely with "numbers" and a "short time period" Linda patiently records additional natural information as well as behaviour. Her paper "*Weather Influences Parenting Behaviour among Red-necked Grebes and Western Grebes on Duck Lake, Creston Valley*" (see Wildlife Afield 1:67-69, 2004) gives us a better understanding of how weather patterns may seriously affect local breeding for colonial species and the resulting consequences for the year.

The Western Grebe colony in **Salmon Arm Bay** was again well represented thanks to the diligence of **Hilary Gordon** to compile the survey results and send them to us.

Ospreys

Annual monitoring continued throughout traditional regions of the province. Many contributors recorded individual nests found while on trips to other areas while others combed areas with small but widely distributed nesting populations like those in the Mackenzie area located by the Lambie family. Two major areas were monitored again. Gary Davidson spent the year in Tasmania, on a teacher exchange, so nests from Nakusp to Fauquier were not surveyed.

West Kootenay (Balfour to Waneta)

Rita Wege, Larry Prosser, Elaine Moore, and **Janice Arndt** continued their West Kootenay monitoring program. This year (8th) they provided diagrams of the exact location for each nest and tried to determine productivity for the area.

Creston Valley (U S Border to South Kootenay Lake)

Linda Van Damme and **Cyril Colonel** completed their 7th season of monitoring with the discovery of a few new nest sites this year bringing the total to 31 active nests. Cyril updated his photo album of new nest sites while Linda recorded GPS co-ordinates for new nests.

Cliff Swallows

As time permits colonies of swallows were censused this year but few observers spent the time, or timed their visits, to be able to record actual contents of each nest. **Doug Brown** patiently examined 144 nests near **108 Mile House** and recorded 443 nestlings for an average of 3.1 young per nest. Others made good counts of active versus inactive nests in their tallies.

Rare and Sensitive Species

We received requests in 2004 from consultants, industry, bird listers, magazine and newspaper writers, government biologists, and nature photographers for specific locations and breeding information for locally rare species, or species that we considered sensitive to disturbance.

Species of interest included **Northern Hawk Owl, Grizzly Bear**, **Black Swift**, **Palm Warbler**, **Vancouver Island Marmot**, **Bald Eagle**, **Upland Sandpiper**, **Great Blue Heron**, **Bobolink**, **American Bittern**, **Mountain Goat**, **Pacific Loon**, **White-headed Woodpecker**, **Sky Lark**, **Western Screech-Owl**, **Fisher**, **Mountain Beaver**, **Pacific Giant Salamander**, **Black-throated Green Warbler**, **Yellow-breasted Chat**, **Northern Goshawk**, **Rusty Blackbird**, **Peregrine Falcon** (Gulf Islands), **Rock Wren**, **Canada Warbler**, **Great Gray Owl**, **Badger**, **Wandering Tattler**, **Double-crested Cormorant**, **Rock Ptarmigan**, **Crested Myna**, **Tufted Puffin**, **Oregon Spotted Frog**, **Hoary Marmot**, **Townsend's Warbler**, **Gray-crowned Rosy-Finch**, and **Sandhill Crane**.

As always, information was provided with the welfare of the species in mind, land ownership issues, and conservation value of the information being released.

Field Tips and Techniques

Learning good field techniques for locating bird nests takes time and patience. Of course, one of the most frustrating parts about locating a nest is not being able to see inside to confirm contents. In the past we have highlighted the mirror technique (Figure 17) as one of the best "tools of the trade". For new participants to the British Columbia Nest Record Scheme, we wanted to show this useful tip again, so you can get an early start on good nest observation techniques.

The tool is simple to make. All you need is a small mirror (those sold at bicycle stores are best), a pole (expandable works really well and is easy to carry in the field), and a way to attach the two together. Most bike-mounted mirrors come with a metal rod and clamp for attaching to the handlebars. This clamp is ideal for grasping a handy stick or commercially-bought pole (we prefer window-washing poles, as they are light and compact).

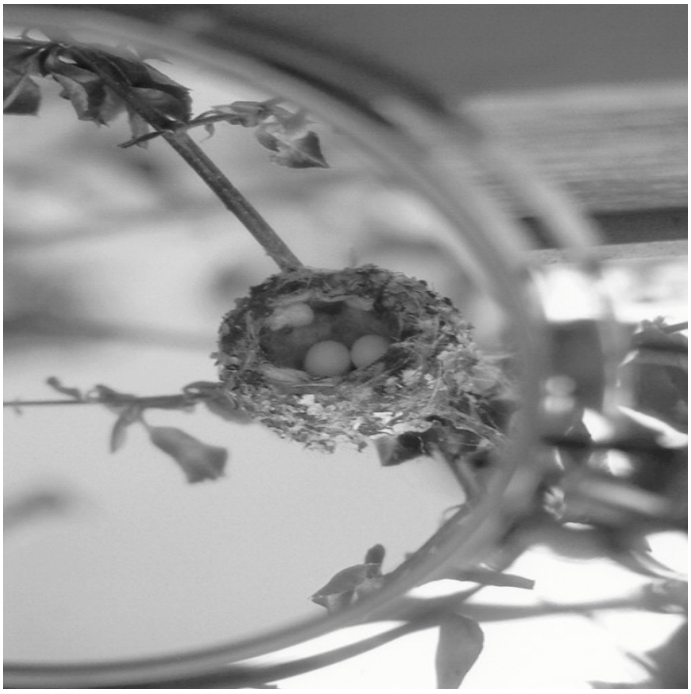


Figure 17. A common field technique for checking the contents of nests is to use a small mirror mounted on the end of a stick or pole. Here, two Rufous Hummingbird eggs are revealed in a nest. (Laure W. Neish).

Ageing Waterbirds

Broods of waterbirds, especially waterfowl, can be aged quite accurately using the criteria on plumage development in Appendix 1. This enhances the value of the information and contributes to its interpretation. This is especially important today with many researchers looking at climate change and global warming and its impact on wildlife.

We know that several nest finders simply reduce the drawings and paste them in their field notebooks for quick reference. Consequently they do not have to be reminded of the various levels of development each time they spot a brood.

Nest-searching Cues

Everyone uses different cues and techniques to find nests. A study by Amanda D. Rodewald (see *Journal of Field Ornithology* 75:31-39, 2004) quantifies and reminds us of some of these methods. She found that 41 % of successful nest discoveries in her study area were from parental behaviour such as carrying nesting material and food, displaying, alarms calls, defence strategies, and distraction displays. Another 37 % were found by systematic searching of potential nesting sites and substrate, while flushing the parent (5 %) and luck (17 %) rounded off the categories.

Northern Waterthrush Nests

We have very few actual nests of this secretive breeder represented in our collection. We know they are associated with wetlands but actually finding their nests is a real challenge.

Studies on the breeding biology of this wood-warbler have shown that chances are greatly improved if naturalists spend more time walking along lakeshores with upturned tree roots or along creeks and stream banks. Most of us never consider searching these habitats because they are off the beaten path. This technique was tried last summer in June in the southern Peace River regions with wonderful success.

From the Scientific Literature

THE HISTORIC AND CURRENT DISTRIBUTION OF THE VANCOUVER ISLAND WHITE-TAILED PTARMIGAN (Lagopus leucurus saxatilis)

Biological and ecological information on this subspecies, endemic to Vancouver Island, is poorly known. Dr. Kathy Martin and her assistants from the University of British Columbia conducted research and collated all historical records. They found that the range of the "Vancouver Island" White-tailed Ptarmigan has not contracted over the past 25 years.

Journal of Field Ornithology 75(3):239-256, 2004.

NEST SUCCESS AND HABITAT SELECTION OF THE SEMIPALMATED PLOVER ON AKIMISKI ISLAND, NUNAVUT

Where Semipalmated Plovers lay their eggs and successfully hatch their young may depend on factors like microhabitat, proximity to water, potential predators, and height of vegetation. Linh P. Nguyen, and a team from Trent University in Onatrio, studied these parameters in 2002 in James Bay. They discovered that plover nests placed within 100 metres of an Artic Tern nest were more likely to be successful than if they had placed their nest away from an Arcitc Tern, but in otherwise suitable habitat. It appears that Arctic Terns may serve as sentinels for approaching predators.

Wilson Bulletin 115(3):285-291, 2003.

LONGEVITY OF FLAMMULATED OWLS: ADDITIONAL RECORDS AND COMPARISONS TO OTHER NORTH AMERICAN STRIGIFORMS

Through banding, biologists Brian D. Linkhart and Richard T. Reynolds determined new longevity records for the Flammulated Owl. The maximum age for males is 14 years and for females 8 years. This small species appears to be more long-lived than previously thought, and may have a similar life history to larger raptors.

Journal of Field Ornithology 75(2):192-195, 2004.

BREEDING SITE AND MATE FIDELITY IN EASTERN PHOEBES (Sayornis phoebe) IN INDIANA

This study examined the possible differences between nest sites and mate bonds within seasons and among years. Researchers Amanda S. Beheler and her associates found that within years (e.g., double broods) adults rarely dispersed to new territories. If a nest failed, however, the phoebes built new nests and started over. Mates remained faithful within nesting seasons and among years only 2.4 % of females and 4.8 % of males divorced and paired with new mates.

The Auk 120(4):990-999, 2003.

VARIABLE REPRODUCTIVE SUCCESS OF BALD EAGLES ON THE BRITISH COLUMBIA COAST

John Elliott, a biologist with the Canadian Wildlife Service, and his colleagues, studied reproductive success of Bald Eagles near industrial sites in the Strait of Georgia with those from pristine environments in Clayoquot Sound between 1992 and 1995. They found that the number of young fledged per occupied territory was higher in the Strait of Georgia. Food supply was apparently the key factor limiting breeding success.

Journal of Wildlife Management 62(2):518-529, 1998.

A NEST PREDATOR'S VIEW OF A MANAGED FOREST: GRAY JAY (Perisoreus canadensis) MOVEMENT PATTERNS IN RESPONSE TO FOREST PRACTICES

Field naturalists have always suspected that predation of nests is higher along forest edges. By using radiotelemetry Jacques Ibarzabal and André Desrochers followed 11 family groups of Gray Jays (Figure 18) hunting in a forest. They discovered that forest edges (within 30 metres) represented prime foraging habitat for the jays and that they moved more slowly near forest edges (obviously searching) than in the interior. They concluded that "*...narrow forest strips left by loggers could act as ecological traps for mature-stand songbirds before stands regenerate in adjacent clearcuts*".

The Auk 121(1):162-169, 2004.

Figure 18. Gray Jays frequently forage along forest edges and as a nest predator may have a significant impact on species nesting in forest edges. Golden, BC. 3 January 2005 (Michael I. Preston).

APPENDICES

Appendix 1. Plumage Development of Young Waterfowl

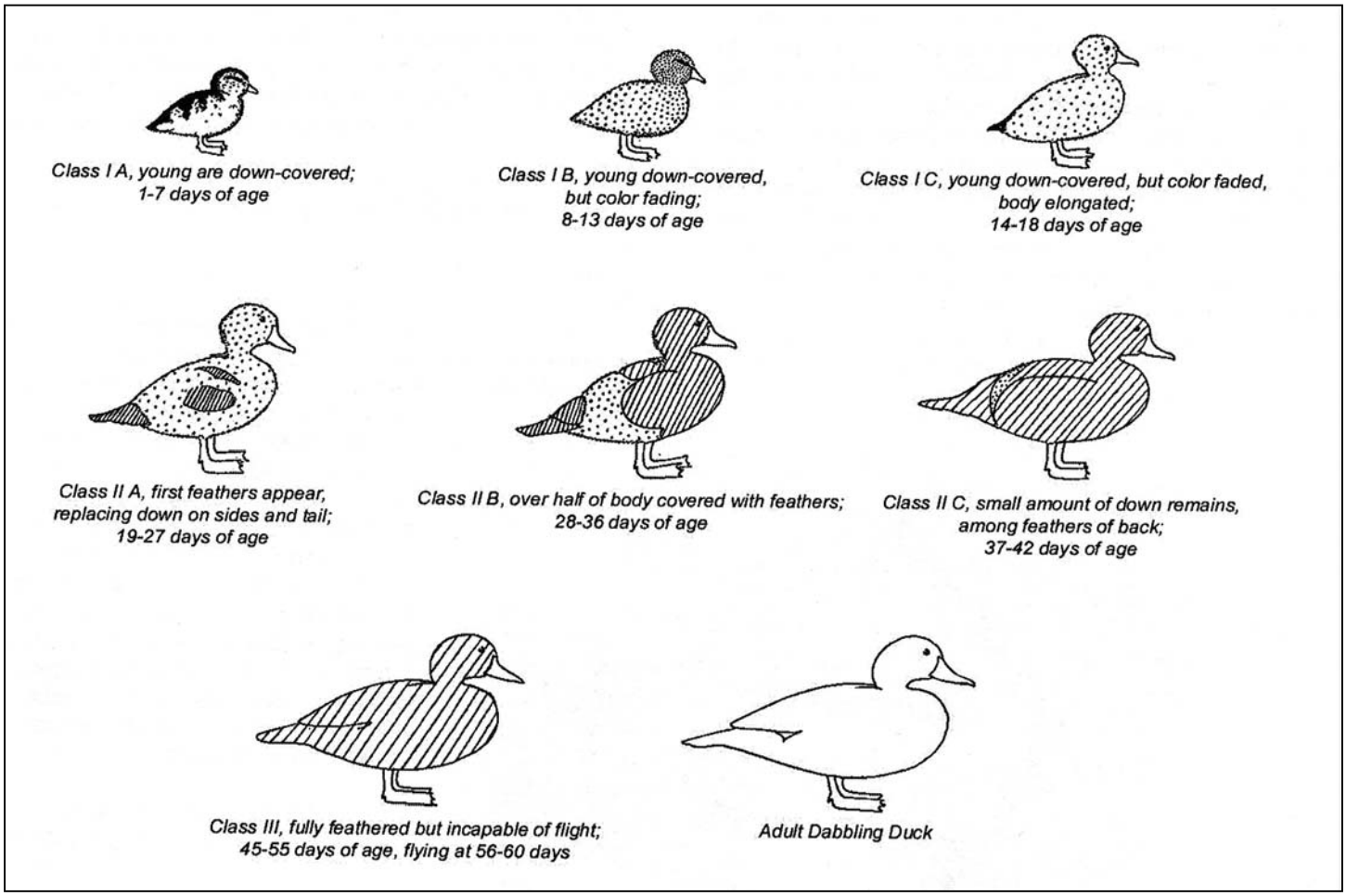
In the spring of 1997, the first B. C. Nest Record Scheme manual was issued by the WBT Wild Bird Trust of British Columbia, along with participating partners, as WBT Wildlife Report No. 1. An important omission in that manual was the inclusion of plumage changes of waterfowl developed by J.B. Gollop and W.H. Marshall in their 1954 publication A Guide for Ageing 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 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.

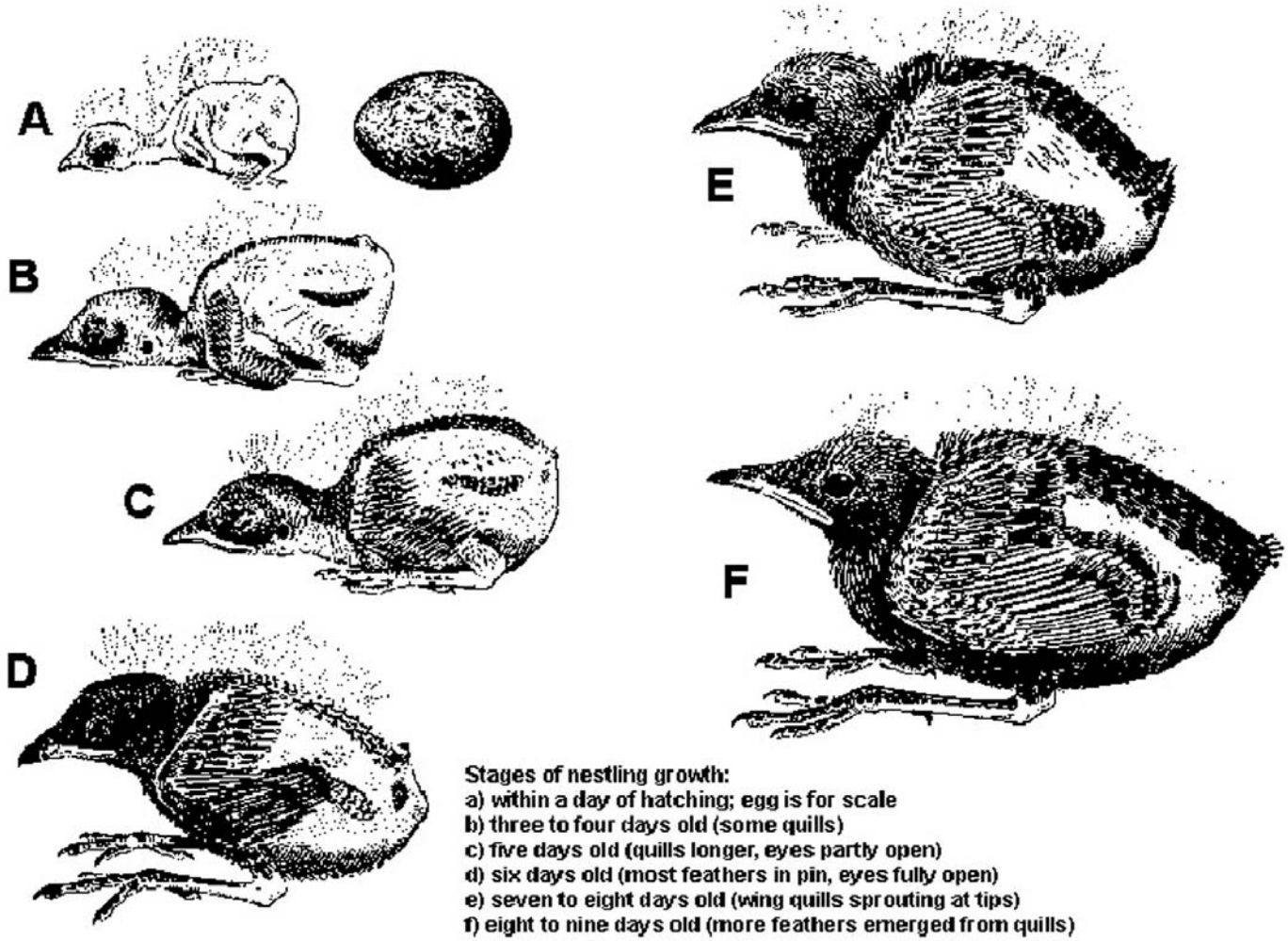
Information for each brood can simply be recorded on each nest card as I-A, I-C, II-B, III, etc. The drawings, which have been modified from F.C. Bellrose's Ducks, Geese and Swans of North America, should be used as the reference.



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. Stages of Nestling Growth.



Stages of nestling growth:
a) within a day of hatching; egg is for scale
b) three to four days old (some quills)
c) five days old (quills longer, eyes partly open)
d) six days old (most feathers in pin, eyes fully open)
e) seven to eight days old (wing quills sprouting at tips)
f) eight to nine days old (more feathers emerged from quills)

REQUESTING AND SUBMITTING CARDS

PLEASE NOTE OUR ADDRESS CHANGE

B. C. NEST RECORD SCHEME
P.O. Box 32128
3651 Shelbourne Street
Victoria, B. C. V8P 5S2
Tel\Fax: (250) 477-0465
e-mail: editor@wildlifebc.org

All enquiries including requesting and submitting cards can now be sent to the address above.

Single nest and colonial cards as well as an Instruction Manual are available from the address above. Due to fieldwork commitments we suggest that you request material before mid-May.

Our web site is presently under construction and by autumn we will have instructions and material available to participants for on-line download.

We prefer to have nest cards completed and submitted by October 1 so the growing task of compiling and publishing the report can be completed by the end of the year and distributing the annual report can begin in March the following year. This year, compiling 27,000+ cards into species and participant order took nearly 4 months!

For species acting as hosts for **Brown-headed Cowbird** eggs or young please fill out a separate card for the **BHCO** and cross-reference it to its host. For young or recently fledged BHCO young be sure to indicate if the young was in the nest (i.e., nestling) on the front of the new nest card.

Other species, including some waterfowl, are also parasitized during their nesting season. For example, it is not uncommon to find **Ruddy Duck** eggs in **Redhead** nests or **American Coot** eggs in **Lesser Scaup** nests. If this occurs please complete separate cards for each species and cross-reference to each nest or brood.

*Also, **PLEASE** use a dark ballpoint pen or dark ink (not pencil) and write clearly.*

ACKNOWLEDGEMENTS

New cards were sorted by contributor by Eileen and Wayne Campbell. These were added to historical cards that were sorted by species and compiled electronically by Joanna and Mike Preston. Prior to computer entry their dining room table was covered with cards for weeks while the sorting took place (Figure 19).

We are grateful to everyone who submitted his or her cards in species order. It was a great help!

Mark Nyhof graciously provided the cover illustration of the juvenile Yellow-headed Blackbird and the inside artwork of Eastern Kingbird.

Individual photographers are credited with each image in the text.

Figure 19. A sea of nest cards stacked and sorted by species on Mike and Joanna Preston's dining room table. 15 December 2004 (Michael I. Preston).

GOLDEN ANNIVERSARY

To celebrate our Golden Anniversary we plan to publish a 50-year summary of the British Columbia Nest Record Scheme sometime in late 2005. This report will include highlights for each year along with annual species and participant summaries. We also hope to give examples of how data, collected over a long period, can be used for conservation and management purposes.

OUR PUBLICATIONS

The following publications are available from the Biodiversity Centre for Wildlife Studies.

Wildlife Afield is published twice a year and features original science and natural history articles and notes on all wildlife in British Columbia. There is also a regular report on the Wildlife Data Centre and a provincial "round-up" of community involvement and conservation.

The journal is included with a membership to the Society ($30.00 individual), which can be purchased from the above address. Back issues are $15.00 each.

Currently available:

1) Wildlife Afield Volume 1(1)
2) Wildlife Afield Volume 1(2)

3) British Columbia Nest Record Scheme 49th Annual Report – 2003 Nesting Season. 30p. (free to BCNRS participants; $10.00 to non-participants).

Barn Swallow Nesting Alert "Poster" developed by Cyril Colonel and Linda Van Damme.

BARN SWALLOW ALERT FOR THE CRESTON VALLEY

The British Columbia Nest Record Scheme, operated by the Centre for Wildlife Studies is concerned about the alarming decline in Barn Swallow numbers on the coast and in interior British Columbia.

Barn Swallow Facts:

1 Swallows migrate from South America and arrive in the Creston Valley in late April to early May.
2 Mud nests are built in hay-sheds, barns, garages, under bridges and other outbuildings
3 Three to five eggs are laid, once the first young leave the nest a second clutch is laid.
4 Nesting can last from May to September
5 Swallows are aerial feeders darting about to catch insects

Here's How You Can Help Other Volunteers this summer:

- record sightings of Barn Swallows
- locate and collect information on nesting swallows

For further information contact:
Linda Van Damme 428-9892 or email:lvd2@shaw.ca
Cyril Colonel 428-6272 or email: cdc@kootenay.com