# BRITISH COLUMBIA NEST RECORD SCHEME

## 54th Annual Report - 2008 Nesting Season

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# PARTICIPANT PROFILES

It is heartening that both long-time contributors, and new participants, recognize the significance of maintaining their support in the British Columbia Nest Record Scheme. A constant effort is required each year to encourage a steady flow of breeding information into the BCNRS to increase its effectiveness in understanding the breeding distribution, habitat requirements, and species' biology in the province.

The three individuals high-lighted this year, all born in Ontario, come from diverse backgrounds. Nancy and Jan are long-time contributors while Doug has been a major participant during the 2000s. All have played a key role in mentoring others.

## Nancy Krueger

Nancy was born and raised in the Georgian Bay area of southern Ontario. She was fortunate to grow up on a 100 acre farm and enjoyed "hanging out" with the animals. She was not interested in birds at the time, and regrets missing some of the eastern songbirds, but does remember hearing singing Bobolinks and Eastern Meadowlarks every morning while tending to farm chores.

In 1972 Nancy moved to British Columbia. Four years later, in 1976, she was introduced to birding through a joint field trip with the Prince George Naturalists Club and the Williams Lake Field Naturalists to Ten Mile Lake north of Quesnel. While enjoying the early morning walk Nancy was impressed that Alan and Frances Vyse's son, Adam, had already identified 10 or 11 species by sound and she had yet to see a bird. She thought to herself that perhaps she could also learn the songs and calls of birds with some practice.

She soon became actively involved with the Prince George Naturalists Club and organized Christmas Bird Counts in the late 1980s and early 1990s. She also began leading club field trips. She was also keen to visit new areas and has participated in all 21 "Mount Robson Bird Blitz" annual outings.

Nancy is also the caretaker warden for a newly established Important Bird Area at Nulki and Tachuk lakes south of Vanderhoof.

On April 17, 2009, after 33 years as a letter carrier with Canada Post, Nancy retired. The career allowed her to enjoy birds each day. Her all-time favourite species was the Black-capped Chickadee. Even when the weather was -30$^{o}$ to -40$^{o}$ C they were her only companions – human or otherwise.

Nancy realizes the significance of maintaining the regular flow of long-term information to established databases and she has constantly endeavoured to represent the Prince George area in the British Columbia Nest Record Scheme since 1995. She was also a contributor to *The Birds of British Columbia* project regularly sending information from her travels around the province.

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## THE SEASON THAT LASTED A YEAR

Half-way through the winter, a few avid BCNRS participants were anxiously awaiting first news of nesting activity. And they didn't have to wait long. In January, correspondence and telephone calls were received from across southern parts of the province letting us know that some Great Horned Owl pairs had returned to their traditional nest sites, Barn Owls were being suspiciously secretive, and Rock Pigeons were in full courtship display. Later in the month we received word that some of the female Anna's Hummingbirds (Figure 1) that had been present at feeders in the Victoria area most of the winter had disappeared and people were concerned that they might have been feeding them the wrong sugar solution. When we explained that they were off nesting, the bird-lovers were flabbergasted. We described where they built their nest and suggested that after eating at a feeder there was a good chance, that with a little patience, a nest could be located by following where a female flew into a tree. By February we already had two active nests reported and would end up with 16 more!

**Figure 1.** Female Anna's Hummingbird at nest in cedar with two hungry nestlings ready to fledge. 25 February 2008. Victoria, BC. (Ted Ardley).

The first three months of the year is generally a "slow time" for most contributors while some take advantage of the quieter winter months to compile historical information to nest cards.

So, the breeding season had begun and would last over nine months. On the south coast, the season ended on 30 September when a **Bewick's Wren** family, the latest breeding for North America, successfully left their nest in a residential woodpile in Cadboro Bay. In the interior fledgling **Ospreys** were still being fed in the nest into early October! So, we were content that the birds had finished nesting in 2008 when early in 2009 we received a telephone call that pigeons [*i.e.,* **Rock Pigeon**] had laid eggs in the corner of an old building in Victoria in December 2008 and the lady was concerned that it was too cold to nest.

We were delighted to have contact with many new participants who learned of our program through our annual reports (Figure 2), website, or by word of mouth. Once they learned that the BCNRS was the largest and longest running regional nest record scheme in North America, and was volunteer based with professionals and amateurs, they were eager to participate. Some even went back through old notes and transcribed breeding information to nest cards.


**Figure 2.** Over the years the annual reports of the British Columbia Nest Record Scheme have evolved from a simple summary of total breeding records and a list of contributors to an information source that contains material that is cited in publications.

The biggest challenge facing participants this season was the sky-rocketing fuel prices along with associated travel costs. As a result, some people had to limit their nest-finding closer to home, make fewer trips to monitor nest box trails, a few had to abandon their nest box trails, and others decided to maximize their time by having fewer, but longer, days in the field.

Once the actual nesting season was over people began completing cards and thinking about how their efforts might contribute more to bird conservation. It was a period of reflection and many people took their "time off" to take their findings to the next level for publication, lectures and conservation activities.

While it is always exciting to summarize findings each year it is also very important to realize that behind the scenes some BCNRS participants are not only collecting nesting data but making a personal commitment to take their information and knowledge available to a much wider audience. These passionate and concerned individuals are directly involved in stewardship issues, conservation practices, networking with professionals to make the best decisions for birds and their habitats, writing articles, giving public presentations on their findings, producing checklists and educational pamphlets.

There were many examples. We were impressed with Chris Siddle who enjoyed monitoring an urban Great Blue Heron colony in Vernon for many years. Chris has a wonderful working library and he quickly realized that long-term observations on a heron colony in the middle of a city is noteworthy and should be published. Over three or four months the article came together and he had it published in *Wildlife Afield*, a peer-reviewed publication (see Vol. 5, No. 1:31-39, 2008). Chris also went through previous notebooks and found an unusual observation of a typical cavity/crevice-nesting species, the Violet-green Swallow, that reused an old American Robin nest to raise their family in 2007. Both articles are available for download at wildlifebc.org. Chris is presently preparing another article on a Spotted Sandpiper nest he discovered some time ago that contained a Brown-headed Cowbird egg.

Others are taking a proactive role to highlight potential harmful impacts to nesting birds at the regional level. Sharon Laughlin and Lorraine Scott, in a formal letter to the Fish and Wildlife Compensation Program (FWCP) in the West Kootenays, requested support in discouraging helicopter over-flights at Great Blue Heron colonies in the Creston valley during their breeding period. They also contacted a local helicopter owner to make him aware of their concern. And it didn't end there. Marlene Machmer, a consulting wildlife biologist, on behalf of FWCP, met informally with local pilots at Bill Piper's hangar in Creston (Figure 3) to discuss impacts of low over-flights on nesting Great Blue Herons. She prepared a map of sensitive bird nesting areas which will be posted in a common area for pilots to refer to. The Creston Valley Regional Airport Society will also make this information available on their website.

**Figure 3.** Local pilots and guests gathered at the Creston Valley Regional Airport for an informal discussion on sensitive bird nesting areas in the valley. Lister, BC (Angus Glass).

Another long time contributor, Rita Wege, brings to our attention a proactive approach to assist nesting Ospreys which she discusses later in this report (see page 41). In the Cariboo-Chilcotin region falling water levels have created large expanses of habitat that is attractive to some species that in previous years would not be available. Jim Sims found a pair of Semipalmated Plovers nesting at Eagle Lake, the second record for this part of the province, and has agreed to prepare an article to demonstrate the adaptability of the species.

By having available historical and current breeding information for a species in a single collection hastens our conservation efforts in summarizing the data and producing updated species accounts for the province. The latest such account, Common Loon (Figure 4), was recently published (92 pages) and is a major overview of all aspects of the life of this "indicator of healthy aquatic ecosystems" in British Columbia. The full account is now available on-line at www.wildlifebc.org.

Again, your contributions and support are greatly appreciated and this 54th annual report is based on these collective efforts. To enhance time in the field in checking and monitoring cavity nesting

**Figure 4.** Although this nest was not added to the databases for the updated Common Loon account recently published in *Wildlife Afield*, future information is still required to continue our monitoring program for fresh-water ecosystems in the province and updating information on our web page (www.wildlifebc.org) for the species. McKinley Lake, BC. 13 June 2008. (Andrea Pomeray).

species we have included some tips and techniques to assist you this season in a special section of the annual report.

## A CATALOGUE OF BRITISH COLUMBIA FRESH-WATER BIRD COLONIES

Colonial-nesting waterbirds are a significant and conspicuous component of fresh-water ecosystems and many species in British Columbia are well adapted, and restricted, to such habitats. The important consideration is that for a brief period in their lives, during the nesting season, they are concentrated on small spots of land and water. This makes them vulnerable to both natural and unnatural threats and a single catastrophe can severely impact a colony seasonally and long term.

About ten years ago we started to collect information on 20 or so colonially-nesting fresh water species and began establishing individual site files. For example, our file for Swan Lake (Vernon) contains historic and current information for 12 waterbird species eight of which are colonial nesters. Information is copied and filed in a unique folder for the lake (Figure 5) from technical literature, unpublished reports, surveys, nest record cards, bird-watching trips, and other less known sources such as museum collections, research projects, and recreational canoeists.

**Figure 5**. Our colonial waterbird file for Swan Lake, north of Vernon, contains information from a variety of sources dating back to 1946. During that period the lake has only been surveyed in its entirety twice and some colonial species, like Western Grebe, have been extirpated. Others, like Forster's Tern, are appearing more regularly. Swan Lake, BC. 13 May 1990 (R. Wayne Campbell).

Also, some individuals, including **Vicky Atkins**, **Alice Beals**, and **Chris Siddle** support this project by regularly submitting information to the growing files.

In 2008, we surveyed many interior aquatic habitats in the southern Peace River region, southern Cariboo, central and south-central region of the province, and south coast for colonial waterbirds. As well, we transferred historical information to single visit and colonial nest cards. In total, 11,877 individual nests containing eggs and/or single broods were tallied for 16 different species. Numbers for active nests of **Eared Grebe** (6,645), **Red-winged Blackbird** (870), **American Coot** (851), **Black Tern** (420), **Yellow-headed Blackbird** (320), and **Common Grackle** (77; Figure 6) were noteworthy. Surprisingly, although 123 individual **Marsh Wren** nests were checked, only seven had contents.

Six new **Eared Grebe** and four **Black Tern** colonies were located, all within the known breeding

**Figure 6.** The Common Grackle is continuing to increase its breeding range in north-eastern British Columbia. It has successfully invaded small wetlands where it prefers to build its nest in cattails. In 2008, 77 nests with eggs or nestlings were found. Near Rolla, BC. 23 June 2008 (R. Wayne Campbell).

range. There were, however, new altitudinal limits discovered for both species in 2008. The **Common Grackle** continues to expand its breeding range both within and outside the southern Peace River region. Small colonies are now being established in wetlands with cattails that may become a competition issue with other marsh-nesting species like Red-winged and Yellow-headed blackbird, Marsh Wren, and Sora. So far, it seems that they are co-existing well.

In 2008, the following individuals, historic and current, had nesting information that related to the Catalogue of British Columbia Fresh-Water Bird Colonies: John Anderson, E. M. Anderson, Janice Arndt, Kevin Atkins, Vicky and Lloyd Atkins, Alice Beals, Desmond Belton, British Columbia Fish and Wildlife Branch, British Columbia Parks Branch, Ed Beynon, Jack Bowling, Allan Brooks, Doug Brown, Wayne and Eileen Campbell, Cyril Colonel, John Cooper, Neil Dawe, Gary Davidson, Ducks Unlimited Canada, Jim Emerson, David F. Fraser, D. Lorne Frost, Cy Morehen, Luther J. Goldman, Victor Goodwill, Hilary Gordon, Orville Gordon, Robert Gordon, Douglas Graham, Charles J. Guiguet, Willie Haras, Dawson and Lorri Harpur, Michael Harvey, Robert Hay, Grant Hazelwood, Doug Innes, Joyce and John Henderson, Ed Hennan, Werner H. and Hilde Hesse, Ted Hillary, Tom Jacobson, Walter Johnstone, Donna Joy, Ted Osmond-Jones, Cathy Koot, Nancy Krueger, Elsie Lafreniere, John and Vi Lambie, Patrick Martin, Marcia Long, Mark Nyhof, Arthur Meugens, Dwight Moore, David A. Munro, James A. Munro, Ivar Nygaard-Petersen, Adrian Paul, Allen Poynter, Anna Roberts, Glenn Ryder, Jack Sarles, Ron Satterfield, Chris Siddle, Ed Silkens, Chris Simon, Jim Sims, Fred Simpson, David Stirling, Andrew Tyrrell, Linda Van Damme, Vancouver Natural History Society, Victoria Natural History Society, and Mildred White.

Our program to enhance nesting locations for **Black Terns** and increase productivity at unstable sites continued. A few more nesting platforms were set out in 2008 (Figure 7) bringing the total to 75 at 11 different locations. All were checked again with over 70 percent success (Figure 8). At one site,

**Figure 7.** Joanna Preston with two Black Tern nest platforms ready to be placed in a shallow bulrush marsh near Westwold, BC. 23 May 2008 (Michael I. Preston).

**Figure 8.** Some Black Terns utilize nesting materials already added to the platform while others prefer to lay their eggs in "new" nests constructed over existing material. South of Prince George, BC. 28 June 2008 (Michael I. Preston).

Eared Grebes decided the platforms were built for them and they either robbed nesting materials we carefully placed on the platform or used them in lieu of building their own nest. A few more platforms will be built and placed at new sites in 2009.

In 2009, we will survey new locations for colonial-nesting waterbirds, check Black Tern platforms, and pull together information on **Forster's Tern** and **Clark's Grebe**. The latter two species will be featured in the next issues of *Wildlife Afield*. If you have any sightings, or observations of nesting, in the province there is still time to have them incorporated into the accounts.

## THE 2008 NESTING SEASON

### Summary

The total cards received for past and present was nearly identical and this was very encouraging. Our "average" year of **12,629** cards was nearly equaled with just breeding records from the 2008 field season. When historical records are added the total number of individual nests and/or broods added to BCNRS files this year reached **23,902**. It should be remembered that each of these records is "confirmed" breeding which means that broods, nests with eggs and/or eggs and nestlings and recently fledged young that have difficulty flying, or are being fed by a parent are included. Additional observations documented during the breeding season such as intense singing, mate feeding, flying with food or nesting materials, or other reproductive behaviourisms such as copulating or displaying are added to our occurrence databases with a special notation. In 2008, over 56,000 such records were entered electronically.

While there is enjoyment in watching and counting young in broods the historical information is the "value-added" segment of the total dataset that sets the BCNRS apart from other such programs. While the process is tedious, over the years the archival information slowly adds up and when analyzed the results can be surprisingly informative and helpful.

While numbers of records may be of interest it is really the kind of information that is recorded on each card that makes it precious. This year there was an increase in GPS locations, habitat and nest descriptions, follow-up visits, accompanying photographs (thanks to digital cameras), and prompt reporting.

In a mountainous country like British Columbia, the weather varies greatly not only between nearby valleys but also in different habitats throughout the province. Generally, we had a cool and wet spring which impacted the outcome of some nest box trails and grouse success. In fact, some nest-finders, who spent several weeks in the field in appropriate habitats, never found a grouse brood. Osprey success (Figure 9) varied from place to place and in the Cariboo region many wetlands had low water levels and in some cases were bone dry. Surface-nesting waterbirds, like grebes and terns, were also impacted by storms and wind.

**Figure 9.** A pair of adult Osprey feeding one of two large nestlings near Smithers, BC. August 2008 (Marcus Womersley). This year reproductive success varied greatly around the province and in some areas early occupancy by nesting Canada Geese contributed to late nesting attempts.

This year **23,902 breeding records** were added to the British Columbia Nest Record Scheme for **234 species**. Of these, **11,878 records** were submitted by **234 active participants** for the 2008 season. Another **12,024 nests and/or broods** were transferred from historical sources.

## Noteworthy Events

Although no new breeding species were added to the provincial total in 2008, **Wayne Campbell** and **Andrew Tyrrell** came close. While searching wetlands near Dawson Creek for waterbirds Andrew, who is a new BCNRS recruit, mentioned that he had heard something in the sedges that sounded like "snapping twigs". He soon learned that he had just discovered an agitated **Yellow Rail** which promptly perched on a fallen limb and preened itself for 20 or so seconds suggesting that it was re-arranging feathers after an incubation session. The bird scurried off but remained in the immediate vicinity calling continuously and providing glimpses of its tiny body. The nest was surely within 3 metres but due to the spongy nature of the marsh Wayne and Andrew were more concerned that checking the area might damage the nest site so they did not proceed.

Every nesting season is exciting and unpredictable. This year unusual nest sites were found, early and late breeding dates were recorded, breeding range expansions were noted, new locations for colonial nesting species were discovered, large clutches and broods were counted, and other incidents occurred that were total surprises.

As mentioned earlier, some participants wanted to share their findings with others, both professionals and amateurs, by publishing a more detailed story of their discovery. Many of these were published, or are in press, in our bi-annual journal *Wildlife Afield*. All will be available on-line at www.wildlifebc.org. A sample of these articles include: an **Anna's Hummingbird** nesting on a wind chime in Victoria (**Angela Bull**; *Wildlife Afield* 5: 26-31), a 14-year summary (1986-2008) of an urban-nesting **Great Blue Heron** colony in Vernon (**Chris Siddle**; *Wildlife Afield* 5: 31-39), **Yellow-rumped "Audubon's" Warbler** nesting in an active Great Blue Heron nest in Cadboro Bay (**Wayne Campbell**; *Wildlife Afield* 5: 45-47), a **Great Horned Owl** nest with four nestlings in Creston (**Linda Van Damme**; *Wildlife Afield* 5: 47-48), **Violet-green Swallow** nesting in an old **American Robin** nest in Vernon (**Chris Siddle**; *Wildlife Afield* 5: 48-49), a new southern breeding site for **Herring Gull** at Tunkwa Lake (**Wayne Campbell**; *Wildlife Afield* 5: 49-51), **Red-necked Grebes** feeding a **Clark's Grebe** chick at Duck Lake (**Linda Van Damme**; *Wildlife Afield* 5: 51-52), and late nesting date for **Bewick's Wren** in Cadboro Bay (**Wayne Campbell**; *Wildlife Afield* 5: in press).

Hundreds of BCNRS participants, and others, are acknowledged in the updated **Common Loon** account recently published in *Wildlife Afield*. Thanks to new breeding information the section on "*Family Life*" covered 10 pages.

Finding unusual nest sites for birds is usually a perk that comes with spending a lot of time in the field while some can be found in your own yard. Marcia Long found an **American Robin** in a **tree cavity** in Creston (Figure 10), Andrew Tyrrell couldn't miss the **American Robin** nesting in a large **sculpture** on his house (Figure 11), Wayne Campbell a **Yellow-rumped "Audubon's" Warbler** nesting between materials in a **Great Blue Heron nest** that contained large young in Cadboro Bay (Victoria), Fred Bunnell and Wayne Campbell an **Eastern Kingbird** nest with eggs that was built on an exposed, and **active walkway** to a dam control gate (see Figure 58), Robert Allen a **Pacific-slope Flycatcher** nest on a **ladder** hung on the outside of a shed (see Figures 44-46, John and Vi Lambie an **Osprey** nest on a **tree stub** barely above the water level (Figure 12), Ed McMackin an **American Robin** nest in an open **bird feeder** (see Figures 41-42), and Michael Preston and Andrew Tyrrell a **Mallard** nest atop a recent **brush pile** (see Figure 69).

**Figure 10.** The American Robin, thanks to Marcia Long, can now be considered a cavity-nesting species along with woodpeckers, chickadees, grackles, and the like. Creston, BC. 18 July 2008.

**Figure 11.** This nesting American Robin picked a site on the side of a house with character. Fort St. John, BC. 10 May 2008 (Andrew Tyrrell).

With the current interest surrounding climate change we received some extreme dates for nest initiation and fledging for the province. We suspect that some of these dates, however, are an artifact of more people in the field and better avenues to report their findings. An early date included a **House Finch** feeding fledged **young** in Robson on **5 April** (Michael McMann). Some late dates included: **Rusty Blackbird** nest with an egg on 7 July that extends the known egg-period by 10 days (Joanna Preston; see Figure 19), **Anna's Hummingbird** fledged young on 8 August in Victoria (Ron Jeffries), **Gray Catbird** fledged young on 19 August near Vernon, the latest date for the province (Margaret Hubble), **Western Grebe** sitting on nest with **eggs** on Duck Lake (Creston) into the first week of **September** (Linda Van Damme), **Osprey** young fledged on **23 September** and fed at the nest in Florence until early **October** (Lorraine Symmes), and **Bewick's Wren** nest fledging **young** in Cadboro Bay on **30 September** (Wayne Campbell; Figure 13).

**Figure 12.** A pair of Ospreys selected this unusual nest site even though fluctuating water levels in the large reservoir could impact the nest and its contents. Williston Lake, BC. 8 July 2008 (John and Vi Lambie).

**Figure 13.** Nest and eggs of a very late-nesting Bewick's Wren in a backyard woodpile in Cadboro Bay, BC. 4 September 2008 (R. Wayne Campbell).

Bird populations are dynamic and documenting breeding range extensions is an important contribution to understanding the mechanisms and more importantly in being proactive to protect habitats in the future. Some of the extensions no doubt helped fill in "predicted ranges" for some species. Extensions of breeding range (spatially and altitudinally) were found for: **Wood Duck** (Wayne and Eileen Campbell at Bear Lake; 70 km northward extension from Prince George), **Semipalmated Plover** (Jim Sims at Eagle Lake in the Cariboo-Chilcotin; western extension),**Wilson's Phalarope** (Wayne and Eileen Campbell at Tunkwa Lake; altitudinal extension at 1,144 m), **Herring Gull** (Wayne Campbell at Tunkwa Lake; fills gap between Okanagan Valley and Bridge Lake and highest elevation nesting at 1,144 m), **Arctic Tern** (Jim Sims at Eagle Lake in Cariboo-Chilcotin; southern extension from northwestern BC), **Olive-sided Flycatcher** (Linda Van Damme at Stagleap Park at 1,774 m), **Cape May Warbler** (Mike and Joanna Preston and Andrea Pomeray at Watson Slough near Bear Flat; southern extension from the vicinity of Fort St. John), and **Lazuli Bunting** (first breeding record for southern Vancouver Island found by the late Werner Hesse and confirmed by Wayne Campbell).

Many participants sent notes about rare birds in their area singing their hearts out but either mates did not show up or evidence of breeding could not be found. For example, the **House Wren** is a very rare breeding species in the Creston valley and during the summer of 2008 **Pat Huet** discovered a male singing near a nest box which was filled with small twigs but no mate appeared. She is hoping that 2009 may be the year!

With the increase in **Wood Ducks** breeding in the Williams Lake area Sandy Proulx decided to install a couple of nest boxes in the Quesnel area hoping they will be occupied during the 2009 season. Others have erected nest boxes for **Western Screech-Owls** on Vancouver Island, the Lower Mainland, Shuswap Lake region, and the Creston valley and for **Flammulated Owls** in the Cariboo.

## Highlights

### Families and Species

The provincial list of breeding species remains at 312.

The six bird families with over 1,000 breeding records were not all colonial species. The **Grebes** (7,096), **Gulls and Terns** (3,891), and **Cormorants** (2,284) accounted for 56 percent of the 2008 total. As well, the species represented are highly colonial and much easier to tally because they usually nest close together in dense colonies occupying a relatively small area. Totals for the remaining families, **Geese, Swans, and Ducks** (2,514), **Blackbirds, Orioles, and Allies** (1,484), and **Swallows** (1,471), are much more impressive because a lot of effort has to be made to find and check a nest and many more areas have to be visited. Totals for the waterfowl are mainly of broods (Figure 14) that helped swell their numbers and of course swallow numbers are tied in with various provincial nest box trails.

**Figure 14.** Most breeding records for waterfowl are of broods swimming with an accompanying female like this family of seven Bufflehead. Near Fort St. John, BC. 31 July 2008 (Andrew Tyrrell).

Other families with significant numbers for nests for species with large territories or are solitary and widely distributed include the **Shorebirds** (291), **Towhees, Sparrows, and Allies** (214), **Loons** (179), **Warblers** (157), and **Owls** (104).

Ten species with over 500 individual records accounted for 65 percent of the 2008 total of which **Eared Grebe** had the most records at **6,645**. The other nine species included **Glaucous-winged Gull** (2,028), **Pelagic Cormorant** (1,784), **Ring-billed Gull** (1,282), **Red-winged Blackbird** (870),

**American Coot** (851), **Mallard** (586), **Tree Swallow** (532), **Cliff Swallow** (523; Figure 15), and **Canada Goose** (522).

Significant numbers of breeding records were received in 2008 for other species that may be common but are under-represented in the BCNRS collection or are rare and their nests are difficult to find. These included: **Anna's Hummingbird** (18), **Black Tern** (420), **Brown Creeper** (13), **Common Grackle** (77), **Green Heron** (7), **House Sparrow** (81), **Peregrine Falcon** (24), **Red Crossbill** (22), **Rock Pigeon** (45), **Sora** (33; Figure 16), **Townsend's Warbler** (35), **Yellow-headed Blackbird** (320), **Western Screech-Owl** (16), **White-tailed Ptarmigan** (34), and **Wilson's Phalarope** (16).

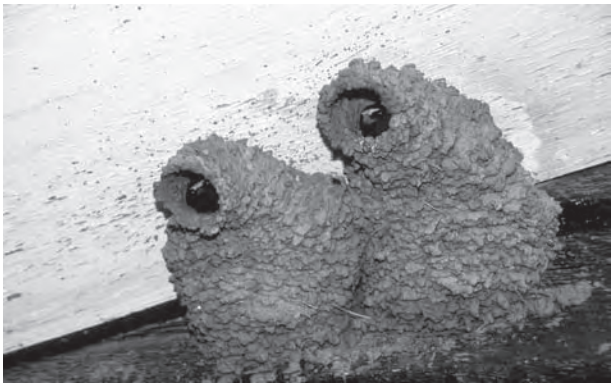


**Figure 15.** Contents for each of the 523 Cliff Swallow nests were individually checked with a specially-designed combination mirror and flashlight. Buckinghorse River, BC. 1 July 2008 (R. Wayne Campbell).

**Figure 16.** The high number of Sora nests (33) was the direct result of incidental discoveries during surveys for colonial nesting birds in fresh-water wetlands. Most are well concealed with a roof of sedges, cattails, or bulrushes. Near Fort St. John, BC. 22 June 2008 (Andrew Tyrrell).

The 18 **Anna's Hummingbird** nests were the most ever reported for a single nesting season and came from widely separated locations on southern Vancouver Island, including **Broadmead**, **Cadboro Bay** (University of Victoria), **Duncan**, **Malahat**, **Royal Oak**, **Sidney**, **Sooke**, **Swan Lake**, **Ten Mile Point**, **Uplands**, and **Victoria** (Figures 17-19). All nests were found between late January and early July.

All but one nest was saddled on the branch of a tree or shrub that included apple (Figure 17), bigleaf maple, Douglas-fir (Figure 18),Garry oak, ocean spray, Pacific dogwood, wild rose, western hemlock, and western redcedar (Figure 19). A nest built on a wind chime under the soffit of a home in Royal Oak, the first such site for the species, was published in *Wildlife Afield* 5(1): 26-31 (see www.wildlifebc.org). Also, for the first time in British Columbia, an identifiable female successfully raised two broods at the University of Victoria (Finnerty Gardens) in a single year.

Many of the 59 **Wood Duck** records were extracted from 1963 field notes of the late **John G. Sarles** from a nest box project in the Lower

**Figure 17.** Dennis Demarchi could step out on the back deck of his house and watch a female Anna's Hummingbird feeding large young in a nest on the limb of an old apple tree. Victoria, BC. 8 July 2008.

**Figure 18.** This Anna's Hummingbird nest was constructed in a small fork on a lichen-covered Douglas-fir branch. Victoria, BC. 21 June 2008 (Roberta Thompson).

**Figure 19.** A fork in a small branch of a western redcedar tree provided support for this Anna's Hummingbird nest. Victoria, BC. 16 April 2008 (Iain Barr).

Mainland. All of the records were of nests with eggs and had multiple visits. Participants included **Ken C. Boyce**, **Wayne Campbell**, **Milo DeAngeles**, **Bruce**, **Ian** and **Ken Kennedy**, **William M. Hughes**, **Allister Muir**, **Bill O'Doherty**, **William S. Rae**, **Terry Robertson**, **George Robinson**, **Robin**, **Steve** and **Wilma Robinson**, **Dale Sanderson**, **Doug Sinclair**, **John Thompson**, **Bill Wheeler**, **David Woolgar**, and **Gwen Wright**.

A number of significant breeding records were discovered that enhanced BCNRS files for regional firsts, species with few records, rare species, or those that are irruptive and their presence cannot be predicted.

**Marcia Long**, camera always ready, documented the first breeding record of **Spruce Grouse** for the Creston valley in 2007 and this season continued to find broods on her mountainous travels (Figure 20). **Joanna Preston** discovered a **Rusty Blackbird** nest (Figure 21) in the southern Peace River that was far removed from their typical secluded wooded swamps. **John** and **Vi Lambie** also found a Rusty Blackbird nest near Mackenzie. The same couple also located a **Black-backed Woodpecker** site with nestlings. **Ted Hillary** and **Ed** and **Monica Dahl** carefully documented **Clark's Grebe a**ctivity at the south end of Shuswap Lake at Salmon Arm. The 2008 season was the best ever with nests of three Clark's Grebes or Clark's Grebe/Western Grebe hybrids recorded. Between five and eight chicks were noted. In 2009, the grebe's status will again be monitored and the information incorporated into a full account on the Clark's Grebe that will be a "Featured Species" in an upcoming issue of *Wildlife Afield*.

**Figure 20.** There are few records of the Spruce Grouse in the Creston valley and its breeding status was not known until 2007. On 26 July 2008, Marcia Long photographed a female with four one-quarter grown chicks providing on-going evidence of breeding for the valley.

While fairly common in southern parts of the province, breeding records for the **Nashville Warbler** are few. Both **Janice Arndt** and **Rita Wege** found them in 2008. Thanks to **Vicky** and **Lloyd Atkins**, the **California Quail** was well represented in the Okanagan valley. **Dave Schutz** monitored the **Lazuli Bunting** breeding at Colony Farm in Port Coquitlam.

In the Peace River region **Wayne Campbell** was excited to locate the third nest with eggs for the **Nelson's Sharp-tailed Sparrow** near Dawson Creek. **Andrew Tyrrell** provided a noteworthy record of a female **Baltimore Oriole** with a fledgling near Fort St. John.

**Figure 21.** This Rusty Blackbird nest containing a single egg is not only a noteworthy record but a late date for a nest with eggs. East of Chetwynd, BC. 7 July 2008 (Joanna Preston).

**Figure 22.** A fledged Red Crossbill being fed a seed by an adult male in a bird feeder in Nelson, BC. 8 June 2008 (Tim Kendrick).

**Sheila Falle**, who lives in the West Kootenays, was the only contributor this year to find three species of hummingbirds (*e.g.*, **Black-chinned**, **Calliope**, and **Rufous**) nesting. **Ed Beynon** trekked into the alpine for records of **American Pipit**, **Gray-crowned Rosy-Finch**, and **White-tailed Ptarmigan**. As requested in an earlier BCNRS annual report, **Laurie Rockwell** recorded **Barn Swallows** nesting at Sun-Oka Beach Park in the Okanagan valley.

Broods, mostly fledged, were noted for some irruptive species. **Janne Perrin** found a fledged **Evening Grosbeak** being fed at **Harrison Hot Springs** as did **Nikki Tyrrell** near Fort St. John. **Tim Kendrick** photographed a male **Red Crossbill** feeding a recently fledged young a large seed in a bird feeder near his home in Nelson (Figure 22).

The **Brown-headed Cowbird** is a brood parasite that lays its eggs in nests of other small passerines. At least 220 species (not all songbirds) have been a host in North America and research has shown that a single female cowbird may lay up to 40 eggs in a single season.

An important function of the BCNRS is to document host-parasite interactions over time and its impact regionally throughout the province including altitudinal variations. This year parasitism was reported for 23 species. These included: **American Goldfinch** (Werner and Hilde Hesse), **American Redstart** (Vi and John Lambie and Linda Van Damme), **Black-headed Grosbeak** (Ed Beynon), **Black-throated Gray Warbler** (Ron Jeffries), **Brewer's Blackbird** (Wayne Campbell and Ivar Nygaard-Petersen), **Chipping Sparrow** (Linda Durrell, James Grant, Lorri Harpur-Figure 23, Pat Huet, and Linda Van Damme), **Common Yellowthroat** (Wayne Campbell and Linda Van Damme), **Dark-eyed "Oregon" Junco** (Richard Knapton and Werner and Hilde Hesse), **Dark-eyed "Slate-colored" Junco** (Ian McTaggart-Cowan and Patrick Martin), **European Starling** (Wayne Campbell), **Hermit Thrush** (Ian McTaggart-Cowan and Patrick Martin), **Least Flycatcher** (Linda Van Damme), **Red-eyed Vireo** (Glenn Ryder and Linda Van Damme), **Red-winged Blackbird** (Wayne and Eileen Campbell, Dawson Harpur; Figure 24, and Ivar Nygaard-Petersen), **Song Sparrow** (Doug Brown, Wayne Campbell, Glenn Ryder and Linda Van Damme), **Spotted Sandpiper** (Chris Siddle), **Spotted Towhee** (Richard Knapton), **Swamp Sparrow** (Wayne and Eileen Campbell and Jim Davis), **Townsend's Solitaire** (James Grant), **Warbling Vireo** (Ron Jeffries, Richard Knapton, and Linda Van Damme), **Western Tanager** (Linda Van Damme), **White-crowned Sparrow** (Tony Greenfield), **White-throated Sparrow** (Douglas Graham and Andrew Tyrrell), **Yellow Warbler** (Wayne Campbell, Linda Durrell, Andrew Tyrrell, and Linda Van Damme), and **Yellow-rumped "Audubon's" Warbler** (Richard Knapton and Ed McMackin).

**Please** complete two cards for each parasitized nest, one for the host and the other for the cowbird. For other species, like some waterbirds who have "dump" nests, individual cards would be helpful.

**Figure 23.** Chipping Sparrow nest containing three Brown-headed Cowbird eggs. Near Rock Creek, BC. 31 July 2007 (Lorri Harpur). BC Photo 3668.

**Figure 24.** Dawson Harpur inspecting a Red-winged Blackbird nest in a cattail marsh near Rock Creek, BC. 17 July 2007 (Lorri Harpur). In 2008, Dawson discovered two blackbird nests parasitized by the Brown-headed Cowbird, a rare event.

### Coverage

In total, 374 National Topographic Grids (32%; Figure 25) were represented in 2008, up from 317 in 2007.

All south coastal areas, including Vancouver Island, the Gulf Islands, and the lower Fraser River valley from Tsawwassen to Hope, had nearly complete coverage. Manning Park, the entire Okanagan valley, accessible parts of the Cariboo-Chilcotin, West and East Kootenay, Thompson-Nicola, Shuswap Highland, the Prince George region were also well-covered. Extensive field work in the southern Peace River region, from the vicinity of Fort St. John south through Dawson Creek to the Alberta border resulted in the most comprehensive coverage for the area since the BCNRS began in 1955.

The entire north-central and northwestern portion of the province and coastal mainland mountain ranges, was again poorly documented.

There were 30 grids with between 100 and 999 breeding records (Figure 26). While a few of these had colonial species (*e.g.,* 093P/09-Dawson Creek area with 577 records) most totals were of single nests that involved a lot of searching and field time. And the areas were from widely scattered locations (Figure 26).

There were 92 map grids for which there was a single breeding record.

Over 38 percent of all breeding records were from four grids, all of which had colony-nesting species (Figure 27). These were 094A/07 (**Fort St. John** area; 5,537 records), 082L/11 (**Salmon Arm** area; 1,607 records), 092G/04 (**Nanaimo** area; 1,027 records), and 094A/08 (**Goodlow** area; 1,024 records).

Highways, logging roads, and trails of **Vancouver Island** and the **Queen Charlotte Islands** were explored by **Mark Nyhof** for the ninth consecutive year. In total he found direct breeding evidence for 61 species. Noteworthy records, and high numbers, were submitted for **Red-throated Loon**, **Ruffed Grouse**, **Semipalmated Plover** (Figure 28), **Mew Gull**, **Red-breasted Sapsucker**, **Common Raven**, **Chestnut-backed Chickadee**, **Brown Creeper**, **Winter Wren**, **Golden-crowned Kinglet**, **American Robin**, **Orange-crowned Warbler**, and **Townsend's Warbler**.

Remote areas of the entire **Sunshine Coast** were again well represented by **Doug Brown**.

Forests, farmlands, and wetlands in the vicinity of **Fort St. John**, **Goodlow**, **Tupper**, **Dawson Creek** and **Swan Lake** were searched for terrestrial and aquatic species for over a month by **Wayne** and **Eileen Campbell**. As well, they set out, and later checked, Black Tern nesting platforms. Along with **Michael Preston**, **Andrew Tyrrell**, **Chris Siddle**, and **Gary Davidson** the area received the best coverage in the history of the BCNRS. While there were a few range extensions the most important information was filling in gaps for birds thought to be breeding in the region and discovering new breeding colonies.

The **Creston valley** was well covered by the efforts of **Cyril Colonel**, **Vic Cousineau**, **Ed McMackin**, **Marcia Long**, **Ralph** and **Elsie Gerein, Pat Huet**, **Carla Haegele**, **Lorraine Scott, Sharon Laughlin** and **Linda Van Damme**. In total these

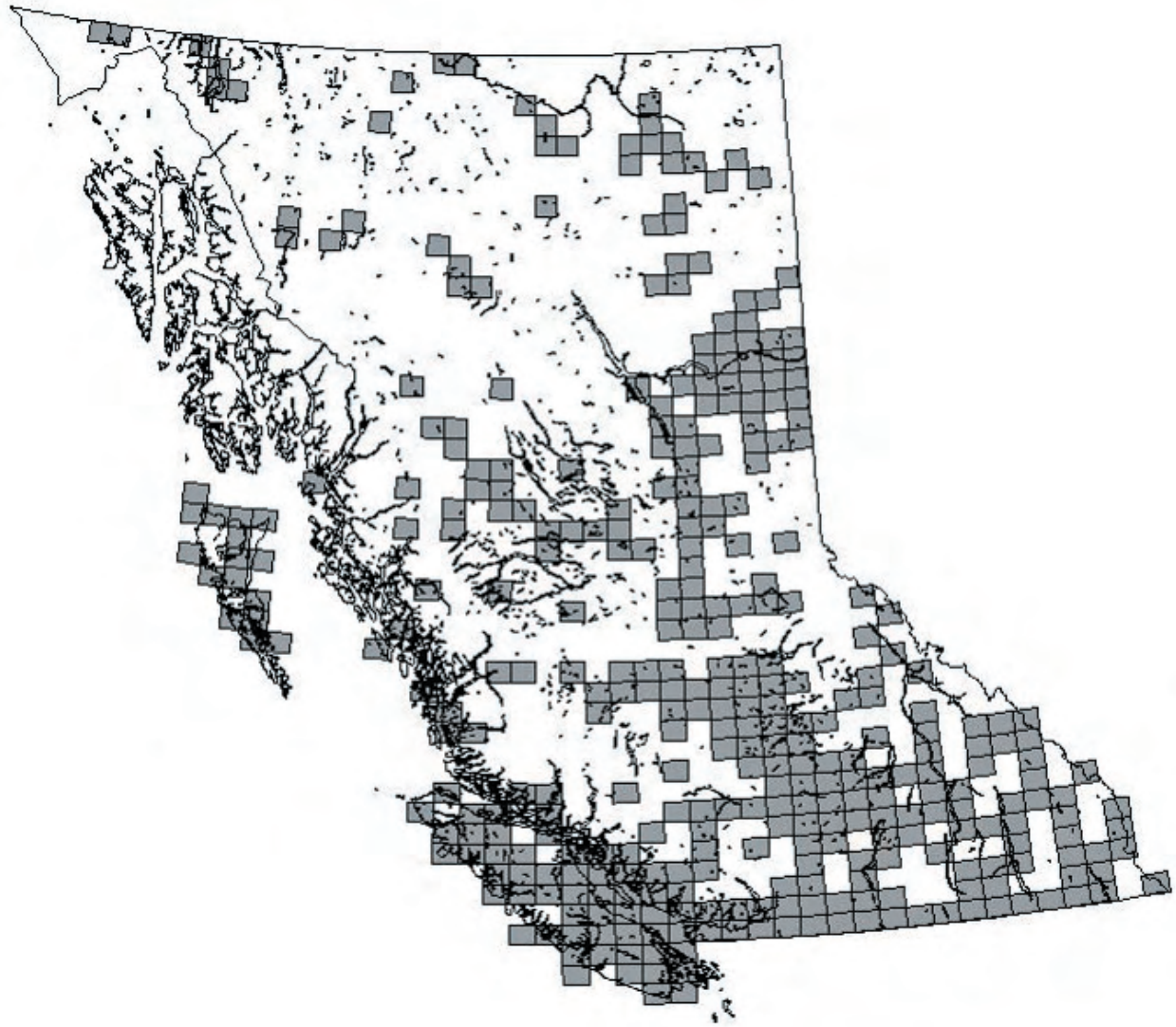


**Figure 25.** Provincial coverage for the British Columbia Nest Record Scheme in 2008.

11 individuals found 891 breeding records for 100 species. The **Mackenzie** region, an area of transition for birds in northeast BC, was well documented by **Vi** and **John Lambie** and their co-operators. **Lorri Harpur** and his son **Dawson** explored the diverse habitats in the **Rock Creek** area.

The **Okanagan valley** was also well covered by **Vicky** and **Lloyd Atkins**, **Alice Beals**, **Chris Charlesworth**, **Laurie Rockwell**, **Chris Siddle, Doug Brown**, **Wayne** and **Eileen Campbell**, and **Peter Blokker**. The **Cariboo-Chilcotin** (Figure 29) was covered by **Kris Andrews**, **Beverly Butcher**, **Linda Durrell**, **Cathy Koot**, **Phil Ranson**, **Anna Roberts**, **Jim Sims**, **Sandy Proulx**, **Wayne Campbell**, and **Fred Bunnell**. The south end of **Shuswap Lake**, in the vicinity of Salmon Arm, was well represented by the huge effort of **Ted Hillary** and **Hilary Gordon**.

Other areas especially well covered included **Campbell River** (Ed Silkens), **Cortes Island** (Christian Gronau and Peter Elliott), **Harrison** and **Agassiz** (Janne Perrin and Jan Bradshaw), **East Kootenays** (Sheila Reynolds), **Kamloops** to **Chase** (Jan Bradshaw, Wayne Campbell, and Willie Haras), **Lower Mainland** (Errol Anderson, Kevin Atkins, Wayne Campbell, and Glenn Ryder), **Pemberton** (Ruth Hellevang), **Powell River** (Ivar Nygaard-Petersen), **Prince George** (Elsie Lafreniere and Nancy Krueger), **Revelstoke** (Orville Gordon), **Smithers/Telkwa** (Evi and Mel Coulson and Mark Nyhof), **Swan Lake** in Victoria (Geoff Barnard, Wayne Campbell, and Victoria Natural History Society), and the **West Kootenay** region (Janice Arndt, Ed Beynon, Gary Davidson, Marlene Johnston, Elaine Moore, Larry Prosser, Lorraine Symmes, and Rita Wege).

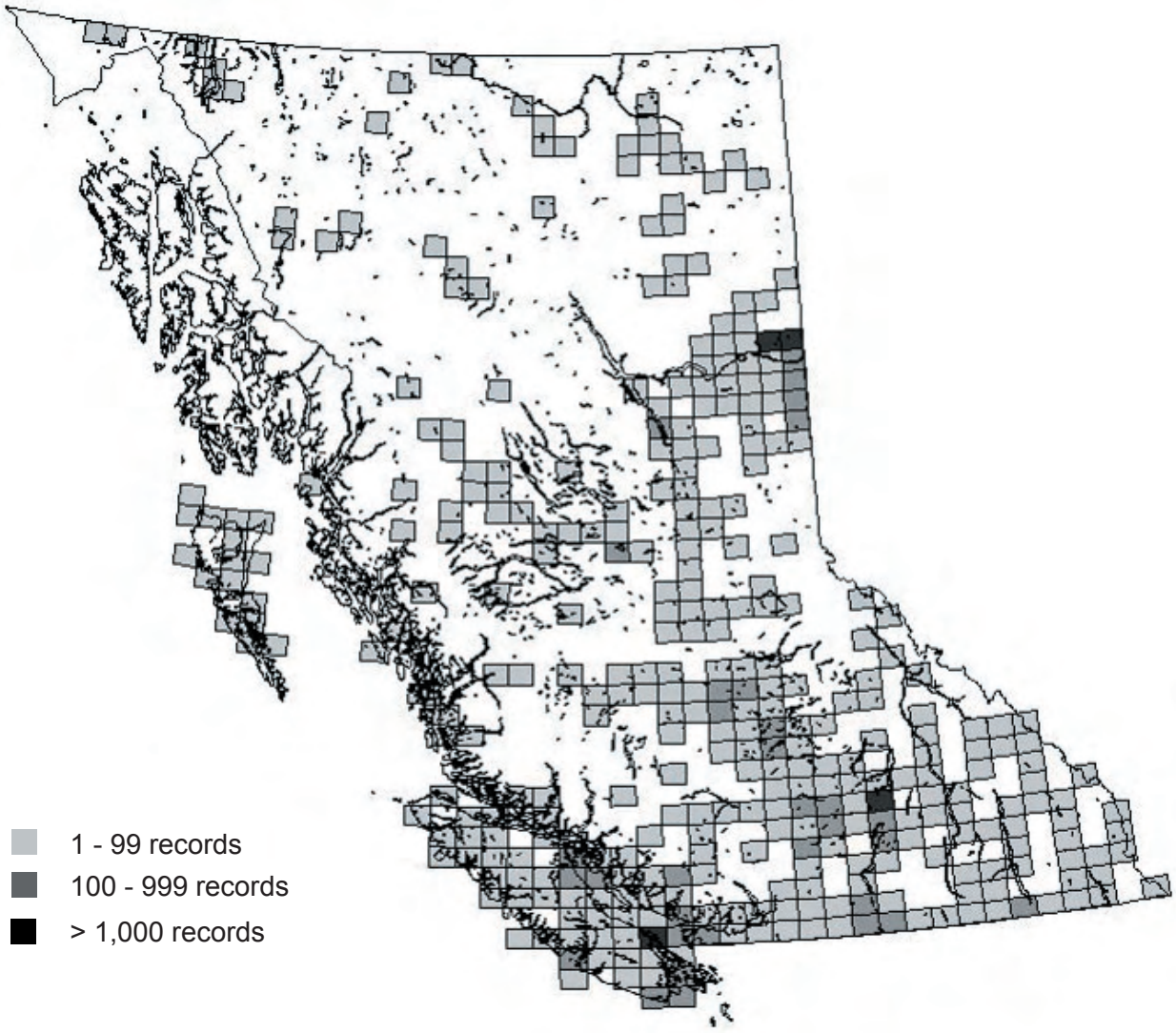



**Figure 27.** Numbers of breeding records for each 1:50,000 NTS grid cell received in 2008 for the British Columbia Nest Record Scheme.

### Participants

Every nest card received has some biological value. It is only when entering the information into an electronic database for analysis that it becomes apparent how quickly the data "adds up". In 2008, an impressive 234 individuals not only enjoyed their field time but made the effort to extract observations from notebooks and compile the information in an organized manner onto nest cards. This greatly enhances data entry.

For 35 years **Wayne** (Figure 30) and **Eileen Campbell** waited for the time when they could follow their passion for nest-finding and spend weeks away from their Victoria home, free of the responsibilities that come with a full-time job and raising a family. They left home in late May, concentrating their efforts on Black Tern conservation projects and research on colonial-nesting birds in the Peace River and Cariboo region. Together they found **4,211** individual **breeding records** for **128 species**. In August, when reality sunk in, they not only learned how expensive travel was today but soon realized that it would be late winter before nest cards would be completed. It also made them better appreciate the personal effort and cost that so many BCNRS participants contribute each year to increasing our understanding of birds and their habitats in the province.

Over 40 individuals and organizations contributed over 100 breeding records but some of these were from historical sources. In 2008, the following 23 people who topped the 100-mark

**Figure 27.** Intensive surveys of Black Tern colonies, and other marsh-nesting birds in the Fort St. John and Goodlow areas accounted for many of the high numbers reported for the southern Peace River region. Near Dawson Creek, BC. 27 June 2008 (Andrew Tyrrell).

**Figure 28.** Adam Nyhof near a Semipalmated Plover nest with eggs he located among shell fragments and pebbles along a beach near Masset, BC. 1 July 2008 (Mark Nyhof).

**Figure 29.** Over 2,300 breeding records from grasslands, wetlands and forests were received in 2008 from the Cariboo-Chilcotin region. Near Springhouse, BC 28 July 2008 (R. Wayne Campbell).

**Figure 30.** Wayne Campbell checking a Red-winged Blackbird nest near Goodlow, BC. 23 June 2008 (Eileen C. Campbell).

included **Ken Kennedy** (1,006), **Linda Van Damme** (667), **Michael** and **Joanna Preston** (537), **Jim Reid** (450), **Tom Brighouse and Doug Ibbitson** (425), **Mark Nyhof** (417), **Joyce** and **John Henderson** (400), **Lorri** and **Dawson Harpur** (264), **Ted Hillary** (231), **Jim Maynard** (223), **Vicky** and **Lloyd Atkins** (199), **Glenn Ryder** (157), **Ed Silkens** (133), **Vi** and **John Lambie** (131), **Chris Siddle** (124), **Beverly Butcher** (112), and **Doug Brown** (107).

It was encouraging that so many new contributors contacted us this year for nest cards and a manual and followed through with their promise to fill out cards.

**Hilary Gordon** continued to serve as a regional co-ordinator of breeding records for many observers in the **Salmon Arm** area.

Every breeding record is important. These can include an actual nest found with eggs/nestlings, a brood, recently fledged young that are begging for food or being fed by a parent, nestlings heard and/or being fed in a cavity or tree top or a nest that is active with adults in attendance but the contents cannot be determined (*e.g.,* raptors and woodpeckers).

## Quality of Information

Filling in the Blanks

Our nest cards are designed to maximize biological information without being overwhelming to complete. Each "cell" is a unique unit that allows for quick recovery and analysis when information is being extracted for electronic analysis. We have purposely kept some cells small so the participant will record only the pertinent information. A large space on the back of each single visit card can be used for extra notes.

Additional notes for research projects can be written on paper, or additional index cards, that are the same size as the nest card and stapled for easy reference. For example, additional information is gathered during the fresh-water colonial bird research that includes vegetative, hydrologic, and chemical information. At Great Blue Heron colonies many more details are obtained for individual nest trees such as height, position, diameter at breast height, species, and the like (Figure 31).

The spaces for **Universal Transverse Mercator** (UTM) information on the bottom of each card for a nest or brood are an important addition. Since hand-held **Global Positioning System** (GPS) units have grown in popularity, more contributors are taking time to fill in the three levels.

The UTM co-ordinate system was developed by the North Atlantic Treaty Organization in 1947 based on an ellipsoidal model of the Earth. The surface of the Earth is divided into 60 zones, each 6° of longitude in width and centered over a meridian of longitude. Zones are numbered from 1 to 60 increasing in an easterly direction. Each longitude zone is further divided into 20 latitude zones each 8° high. Each is referred to an easting and northing co-ordinate pair.

There are five "Zones" in British Columbia, moving eastward from the extreme northwest (Zone 7) to the southeast (Zone 11) (Figure 32).

It is very encouraging each year to see that additional personal observations are being added to cards. What is recorded is a permanent record of the "moment in time". Needless-to-say, one can never return to the spot later to record the same information.

Again, the interest in recording additional information on cards is encouraging. Specific information is not "overload" information and our electronic databases have been developed to include and sort additional details that relate to the card. Especially helpful was the increasing number of participants who recorded the estimated age and sex (when possible) of broods and fledged young.

**Figure 31**. Michael Preston examining egg shell fragments and aging dead nestlings below a red alder tree that contained several Great Blue Heron nests in Central Saanich, BC. 9 July 2008 (R. Wayne Campbell).

Please remember to print or write legibly within the spaces and use dark ink, not pencil.

The updated 4-letter species code, if preferred, is available in the revised *British Columbia Nest Record Scheme Instruction Manual*, 2008 and in the provincial checklist *The Birds of British Columbia* (see Biodiversity Centre for Wildlife Studies Special Publication No. 3, Victoria, BC. 14 pages. 2007; Figure 33).

Also, when noted, please list the "race" or "subspecies" on the card. 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-colored" 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).

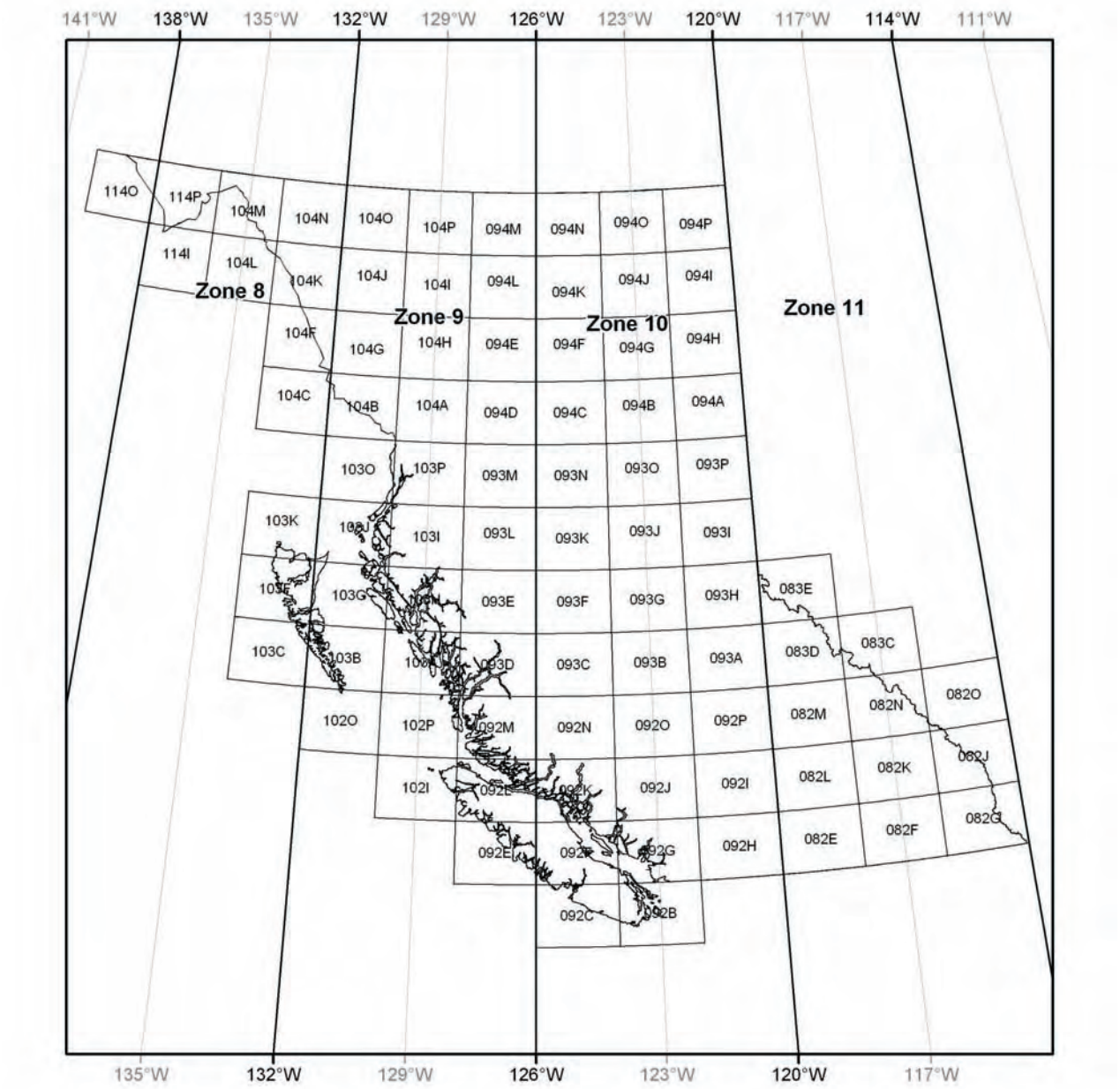



**Figure 32.** A general overview of the Universal Transverse Mercator (UTM) Zones for British Columbia.

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", or, "dark". Most Red-tailed Hawks nesting in the Atlin area of north-western British Columbia are "dark" morphs.

Please remember that the former **Blue Grouse** is now two separate species: the **Sooty Grouse** on the **coast** and the **Dusky Grouse** in the **interior**. With the new cards we hope that more contributors will include GPS co-ordinates, or UTM scores, on cards. The more precise the location the more significant the record becomes.

ALL species that lay eggs in the nests of other species, such as **Brown-headed Cowbird**, **Redhead**, **Bufflehead**, **American Coot, Lesser Scaup**, **Canvasback**, and **Ruddy Duck**, should have two separate cards filled out. It is useful to put both species name on each card for easy cross-referencing.

Whenever possible, please try to describe the stage of development for nestlings (*e.g.*, eyes closed, naked, 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, ptarmigan, and shorebirds).


**Figure 33.** The standard 4-letter code for 500 species of birds in British Columbia is available for reference in the pocket-sized checklist published jointly by the Biodiversity Centre for Wildlife Studies, British Columbia Field Ornithologists, and Nature Vancouver in May 2007.

Please refer to **Appendix** 1, 2, and 3 for drawings for different stages of development.

Documentation with Photographs

The number of colour prints attached to nest cards and CDs received seems to increase every year in large part due to the inexpensive nature of digital photography. In 2008, we received over 300 images and all are welcome. Most of the prints remain attached to the nest card but some noteworthy prints and digital images are added to the **BC Photo File for Wildlife Records**. Each record, however, is cross-referenced to the original nest card.

Fortunately most contributors submit their information in the form of digital prints, with full details on the back of each print (Figure 34). Others, like **Andrew Tyrrell**, **Marcus Womersly**, and **Vi** and **John Lambie** attach copious notes for each CD photo in a separate attachment. Others make prints and attach them to cards as well as send them on a CD.

**Figure 34.** Unless you are a researcher with a dog to help locate Spruce Grouse nests each one is always a surprise to find. Vi and John Lambie attached prints of nests to cards with details in case they became separated while being processed. Near Mackenzie, BC. 19 May 2008 (John and Vi Lambie).

Since 2004, **Cyril Colonel** has supplied BCNRS with a comprehensive photo-catalogue of nesting **Double-crested Cormorants**, **Great Blue Herons**, **Ospreys**, **Red-tailed Hawks**, **Bald Eagles** (Figure 35), **Great Horned Owls**, and **Barn Swallows** in the Creston valley. Documentation for the latter species included locating 73 active nests in 2008 with photos of all nests sites whether single or in loose colonies. Each year the number of nests monitored varies. This permanent record is cross-reference to individual nest cards by himself, **Linda Van Damme**, and **Marcia Long**.

All prints, digital images, and 35 mm slides are welcome and many are scattered throughout this report.

Diagrams

The use of diagrams and sketches redrawn from field notebooks to nest cards, or attached to cards, often enhances the value of a breeding record. These are especially important for colonial-nesting species like cormorants and gulls where

**Figure 35.** For the past five years Cyril Colonel has been providing photo-documentation for seven species of birds nesting in the Creston valley, including Bald Eagle. Duck Lake, BC. Autumn 2008.

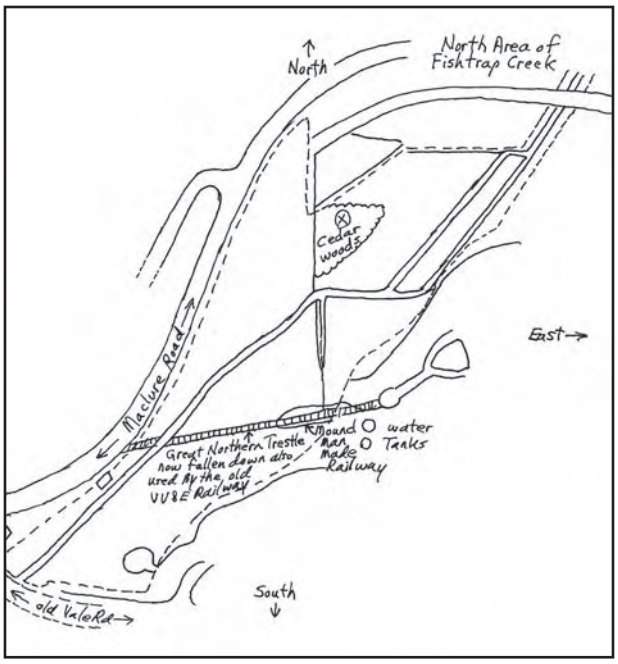



**Figure 36.** Glenn Ryder always provides a detailed field sketch of a study site, including key features such as roads, train trestles, waterways, unique habitats, and directions, for areas he explores thoroughly. Matsqui, BC. 20 March 1991.

colony position can be identified for a particular year. Even specific details for nests of common and widely distributed species like Bald Eagle can be useful especially with urbanization and lakeshore developments increasing in the province.

Taking time to sketch a map for areas that may not be well known, accompanied with field notes, can be surprisingly valuable as a reference in future years. Glenn Ryder has been doing this since he was a young boy and continues the practice today (Figure 36).

**Ivar Nygaard-Petersen** again completed very detailed diagrams for individual nest boxes for the **Purple Martin** colony at Myrtle Rocks near Powell River. A few others added sketches of the precise location of a nest (or colony) especially when it was situated in an unusual place.

Repeat Visits

The additional information collected from well-timed repeat visits to a nest, or nest site, is invaluable and increases the biological value of the record. Most cards submitted each year are of single visits because people are usually travelling from place-to-place and cannot return to visit the site again. This year an increasing number of cards had repeat visits. A few people followed raptor nests from start to end and submitted a “notebook” of information for the nest.

A few people followed passerine nests from discovery to fledging and were able to follow the complete breeding cycle. **Kevin Atkins** kept track of a **Pacific-slope Flycatcher** nest he found in the dark coniferous forest in Vancouver (Figure 37). **Jennifer Bergen** and **F. Don Young** stapled four cards together for a single Hammond’s Flycatcher nest. It took them 21 visits, from a distance, to determine the family finally consisted of two nestlings.

Repeat visits, well timed, can enhance the value of the record especially when clutch and brood sizes are being determined and rarely impact on nesting success. Usually 3-4 days between visits is required.

If more than a single card is required to record multiple visits, please staple them together.

Historical Nest Site(s) and Current Activity Information

Each nesting season many well-known sites that are used in consecutive years, such as birds of prey, colonial-nesting swallows (Figure 38), swifts, some waterbirds, colonial marine birds, American Dippers, and loons, may or may not be utilized. If these sites are visited, and the nest (or site) is not occupied, it would be useful to complete a card indicating that it has been used in the past (or the previous year) but not in the present year.

These “negative cards” are very helpful when interpreting changes in local breeding distribution, effects of weather and human disturbance on

**Figure 37.** Pacific-slope Flycatcher nest in Vancouver, BC. (Kevin Atkins). The nest was located in sucker growth on the side of a red alder, 16 July (left), adult incubating, 18 July (top right), complete clutch of four eggs, 28 July (middle right), and two of four nestlings near fledging (bottom right), 13 August. All young fledged two days later.

breeding activities, loss of habitat, and perhaps the impact of environmental contaminants such as oil spills and chemical contamination. **Vicky** and **Lloyd Atkins** and **Alice Beals** are long-time participants who regularly record such information, often tallied in a separate submission. In the West Kootenays **Janice Arndt**, **Elaine Moore**, **Larry Prosser**, and **Rita Wege** carefully watch the use of Osprey nests by Canada Geese. **Linda Van Damme**, with field partner **Cyril Colonel**, this year recorded the activity and interactions between nesting Ospreys and Red-tailed Hawks and Canada Geese in the Creston

**Figure 38.** This small Bank Swallow colony, located in the middle of a low sandstone cutbank near Savona, BC., was monitored for many years until 2007 when the site became a popular spot to dump garbage and the colony was abandoned. 28 May 2007 (R. Wayne Campbell).

valley. Because negative information was recorded in previous years they could determine the current impact of the competition for nest sites.

A developing problem in the province is the removal of sand by humans for personal use from accessible **Bank** and **Northern Rough-winged swallow** colonies.

Fortunately, most well established monitoring programs do record presence/absence but rarely are cards completed or summaries submitted.

All of these "inactive nest" cards are filed for reference with the original active sites but are not included in the annual report summary.

**Notes from the Field**

This season's stories, and personal triumphs, include observing bird's intelligence, deterring predators to save ducklings, a nest site with company, moving a road to save eggs, predation last year but success this year, can't mess with mother nature, mentally-challenged robins, slower speeds for tourists in Pacific Rim National Park, ravens as morning alarm clocks, lazy nester, a ladder in need, eat crow, basking turtles, snared by fishing line, and easy nest-finding.

Read on – and enjoy!

Bold Ravens

**Randy Findlay** from **Burnaby** writes: "*On Feb 24th 2008, I was out with my bino's and camera to Ladner for a while this morning...had some nice chats with some fellow birder/photographers! Reifel Sanctuary had a lot of the usual species and some beautiful, fresh, sunny weather ... did I mention sunshine! On the way out, I heard and then spotted a pair of Common Ravens ... they flew to the north from where I was located and then started to make a bit of a ruckus. I thought it may have something to do with the Great Horned Owls that are again nesting in the Sanctuary, and walked to the site. A fair-sized group of people had assembled to watch the goings on as the ravens harassed the owl on the nest, intentionally breaking branches off above the nest, one 5 feet long or so which lodged directly above the protective parent. The other Great Horned made sorties out from it's perch in a nearby conifer and made attacking flights at the ravens, eventually, 15 min's or so into it, driving them away! Very intelligent birds the Common Ravens, looking for any opportunity, but taking on a formidable opponent in the Great Horned Owl ... hopefully the owls will successfully fledge their young this season!*"

And then there were none

**Robert Allen** gives us an update from his pond in **Sechelt**:

"*We had ten baby Mallards grace our pond* (Figure 39) *on Skylark Road on about the first of May this year. We were away and didn't actually see them until the 4th of May. Last year the same hen (we are pretty certain) had twelve babies on the 9th of May. Only one died and the other eleven fledged by July 12 and 14.*

*We fed the ducks every day this year until Friday, June 6th when we went to Washington State for the weekend. By then, our original ten had been reduced to seven. We think a heron might have killed two or even three of them. We asked a neighbour to feed them over the weekend and she told us later that she went out at noon on Saturday and they were all gone. We got back on Sunday night and went up to feed them on Monday*

**Figure 39.** This pond is used annually by a female Mallard to raise her brood but by late summer little water remains. Ropes are strung around the pond to discourage raptor predation. Sechelt, BC. 11 May 2007 (Robert W. Allen).

**Figure 40.** Pond in winter at maximum water level. Sechelt, BC. 25 January 2009 (Robert W. Allen).

*morning and she was right, they were all gone! On Wednesday, the hen did return late in the afternoon and I fed her but she hasn't been back since.*

*There was no sign of a struggle, no feathers, no bear tracks in the mud in the pond, no nothin'! It was like a mystery. They were only half-grown and could not fly. The only conclusion we could come to was that some two-leggeds caught them as the pond is now only just knee deep. If you see any lost half-grown Mallards, let me know. We strung ropes across the pond to keep the eagles and others birds of prey from swooping down on them. Next year it might be an electric fence!*

*On Friday June 20th, our Mallard hen on Skylark Road came out of hiding today with another batch of babies; ten of them this time. The water is getting lower in the pond and it may not last long enough to get them all to fledge. Her last batch disappeared two weeks ago, on June 6, and I saw her again on June 11, but only briefly. We hope for the best this time but by the next day one had disappeared and on 26 June we still had nine. By the next day, we were down to three and by 28 June we were down to one and by 29 June we were down to zero. I am certain the culprits this time were Raccoons as there were plenty of their tracks in the mud on the edge of the pond. On 28 June, Andrew and his family saw the hen Mallard and her one baby at one end of the pond and a scruffy looking Black Bear at the other end - less than 30 metres apart. The Mallards were quite oblivious to the bear.*

*Our pond had over a metre of water in it during the winter* (Figure 40) *but as the water table gets lower in the summer, it eventually dries up. There is hardly 15 centimetres of water in it now making the young Mallards easy pickings for raccoons."*

A rain roof

**Ed McMackin** from the **Creston valley** shares this story with us: "*I had a robin build her nest in the most unusual place, in my wooden bird feeder* (Figure 41) *and by June 13th she was incubating 4 eggs. There were always people and birds coming and going and the chickadees, nuthatches and juncos were tolerated but the robin flew each time a person came within 3 m of the nest. Two young* (Figure 42) *were successfully raised!"*

**Figure 41.** Male robin sitting on the rim of the nest with small nestlings. 25 June 2008. West Arrow Creek, BC. (Ed McMackin).

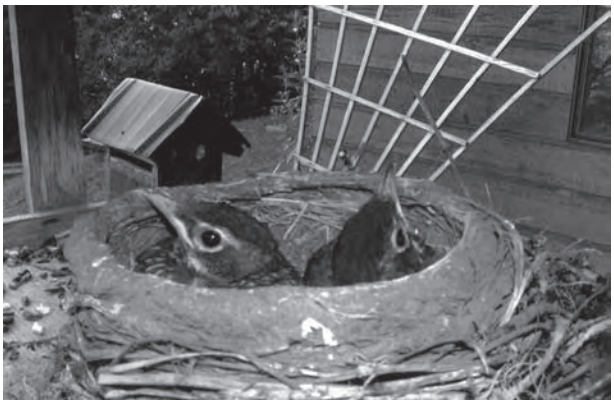


**Figure 42.** Two feathered American Robin nestlings poking their bills over the edge of the nest 8 July 2008. West Arrow Creek, BC. (Ed McMackin).

Roadway Design Changes

**Vic Cousineau** from **Creston** relates this scenario: "*A Killdeer made a nest and layed 4 eggs in the middle of a construction site* (Figure 43). *The contractor constructed a road right next to the nest. Upon seeing the nest, he moved the road and put a red flag post to alert others. Every day the residents in the neighbourhood were visiting the nest as the Killdeer stayed there and whistled at them. Crows were regularly swooping at the adults. The Killdeer were unafraid and would forage near our house and teased our dog. After 25 days of incubation the nest was empty."*

**Figure 43.** Construction site where Killdeer built a nest and successfully incubated eggs for 25 days. Creston, BC. 28 April 2008 (Vic Cousineau).

Success at last

**Patty Axenroth** of Kaslo wrote in 2007 the story of the Steller's Jays which nested on a pair of skis on her back porch but a squirrel raided the nest. This season she writes: "*In March, steller jays built a nest across the road from our house. About 2-3 weeks later they abandoned it because the driveway got too busy, as the people were tearing down the house. We never found their new nesting place. But this weekend we saw the fledged jays. They were so interesting making quite a lot of noise and talking back and forth to their parents. There were 8 jays altogether we saw, so some might of been others in the neighbourhood."*

Losing their home

**Bonnie Hooge** who lives along the Fraser River across from the community of **Shelley** relates this story: "*Last year [2007] we had the pleasure of watching a pair of bald eagles raise a chick in a nest across the river from our house. It became quite the routine to see what the eagles were up to every morning and evening. We held our breath while the tree looked to be undercut by the Fraser's high water and we watched the young one hang out in the tree for what seemed like forever until he finally flew around the middle of August.*

*This spring we were excited to see the pair back, sometimes with a third one (perhaps last year's offspring?) and glad to see them sitting on the nest by the first week of April. Unfortunately the tree was not so lucky with this year's high water and it fell in the water last Wednesday night [21 May]. We heard the eagles that night while lying in bed and wondered what was going on. In the morning the tree was still in the water but by afternoon it was gone and the eagles were still flying around calling. Craig observed them carrying sticks again the next day, but over the weekend I only saw them flying around the area once a day. There is another nest a couple km away, although I'm not sure if it is occupied or if they would try again at this point. Unfortunately it is not within spotting scope range. They hung around for a week or so and then we didn't see them again. There are lots of great old cottonwoods there though, so we're hoping they like the location and try again next year, but hopefully a little farther from the river bank!"*

Try second guessing a robin

**Dirk Pidcock** from **Kaslo** expresses concern over his nesting robins: "*I am coming to the sad conclusion that my backyard pair of robins are mentally challenged. Last year [2007] they (assuming it is the same pair) lost two nests to ravens before succeeding with a third under our carport. I expected them to return to that safe place this year...but no, their first nest was found by ravens and yesterday their second nest (built on an extended branch of a*

*large fir tree, right out in the open) was raided by a Red Squirrel. I screamed inside as the pair attempted to defend the nest, and watched helplessly as the squirrel munched away, one bright blue egg at a time. So, now, will the pair return to the carport?*

*I'm sad to report the pair didn't nest for the third time, but rather spent the remaining weeks of summer keeping each other company in and about our place. In recent years I am aware of six nests lost to ravens and squirrels and only one that successfully fledged young. It seems a miracle that the robin population remains stable, if indeed it is."*

Giving the right-of-way

**Adrian Dorst** of **Tofino** writes on 14 June 2008: "*We observed an interesting sight today. Traffic was stopped on the busy highway through Pacific Rim National Park in order to allow a Ruffed Grouse hen accompanied by her chicks to cross the highway safely. Great to see that these people were both observant and considerate."*

Raven Alarm

**Pam Milliren** writes from **Milburn Lake** 27 June 2008: "*I have had a pair of Common Ravens that nested on the other side of my fenceline since before the snows left. They hatched 5 and now proceed to sit on the log fence near my bedroom window to wake me up each and every morning at 4-5 am. They are here every day and I can get within arms length of many of the babies while I am doing my chores. I have no idea what the attractant is, but they seem to be doing no harm. Other than horrible alarm clocks, they are kinda neat. I have not had ravens here in the 4 summers I have lived here".*

Heat stroke

**Jo Ann MacKenzie** from **Surrey** writes on 1 July 2008: "*We had a disappointing report from Fruitvale today. A Say's Phoebe pair of our acquaintance lost their clutch of 4 to the heat. The temperature in the Trail area was 40 degrees over the weekend, and the young phoebes literally cooked in their nest on a light fixture just beneath the metal roof of the barn. Same thing happened last summer. Now the barn owner is lowering the light fixture to provide better air circulation between it and the underside of the roof, and wondering if the phoebe pair will accept the renovations next year. The phoebes had habitually placed their nest atop an old Barn Swallow nest; perhaps Barn Swallows will have to light the way for the phoebes."*

Moving Day

**Robert Allen** writes on 2 July 2008 from **Sechelt**: *"We are fortunate enough to have a Pacific Slope Flycatcher nest at the back of our garden shed and only about a metre off the ground. I first found the nest on 21 June built on our extension ladder that I have (now had) hanging on the back of the garden shed* (Figure 44)*. I needed the ladder so I built a small platform 24 June and put it in the same location as the nest and moved the nest onto it* (Figure 45)*. On 25 June the first egg was laid and on 28 June the second egg was laid. Fortunately the flycatcher didn't mind me moving the nest as it has been sitting on the eggs ever since. Today is 2 July and still two eggs in the nest. I am not sure how long the eggs take to hatch and the birds to fledge but hopefully they will make it. Unfortunately, something got the eggs - a raccoon or cat or ???. After that disappointment, I moved the platform up higher and under an eve* (Figure 46) *so maybe it might be taken up by another bird next year - a robin maybe, if nothing else."*

**Figure 44.** Pacific-slope Flycatcher nest on ladder. Sechelt, BC. 21 June 2008 (Robert W. Allen).

Crow Bait

**Jack Bowling** writes on 3 July 2008 from **Prince George** "While leaving for work at 0742 hrs this morning, I noticed one of the recently fledged crows from the nest in the backyard in the grass near the head of the driveway. Just as I was approaching it, a young Northern Goshawk swooped in from the east, snatched it by the head and flew off with it to the west, never to be seen again. We have it easy."

**Figure 45.** New platform for the flycatcher so the ladder could be used, bird attended the nest with 3 eggs. Sechelt, BC. 3 July 2008 (Robert W. Allen).

**Figure 46.** Robert Allen re-locating the nesting shelf. Sechelt, BC. 2 February 2009 (Karen Lea).

**Figure 47.** Incubating adult Red-necked Grebe is not comfortable having this Red-eared Slider on its nest mound. Penticton, BC. 8 July 2008 (Laure W. Neish).

Get off my mound!

**Laure Neish** describes this scene for us on 8 July 2008:

"*At the Penticton marina, the first Red-necked Grebe chick hatched but the parent grebe was having issues with a Red-eared Slider turtle that was sharing the nest platform* (Figure 47)*. It wasn't trying to eat the eggs but was just in the way basking in the sun. It kept moving in closer and at one point was partly on top of the eggs. The parent tried all kinds of things to get it off, biting its foot, standing on top of it and getting on and off the nest. The chick kept getting knocked off her back as "she"? moved around. Twice, the chick tried to climb up on the turtle's back. I was telling this story to a fellow walking past, saying I wished I had a kayak to get the turtle off, and it turned out he had access to the nearby marina. In a few minutes I saw him paddling over in a borrowed rowboat and before he had gotten very close, the turtle plopped off the nest. At this point the other grebe parent returned and both parents worked on building up the sides of the nest again. Shouldn't be long before more eggs hatch.*

*July 9 a second chick hatched right before my eyes. One minute I couldn't even see any cracks in the eggs, but the next minute, the parent rose up and there was a flailing little zebra-striped baby.*

*I was very concerned about their welfare after our ferocious wind storm this afternoon, but I went to the marina this evening and the nest was still in the same location by the cattails, the 2 parents were still busy building it up and while there I met up with 3 other people who are "nest - watchers". It seems that I encounter new watchers every day.*"

Entangled

**Marcia Long** while out on a field trip with the Creston Field Naturalists at **Mawson Lake**, BC on 19 June 2008 shares this mis-fortune with us: "*We came across this robin which was entangled in fishing line* (Figure 48) *close to a newly built nest in a cottonwood tree. We weren't sure how the robin got itself tangled up but it looked like the wing was caught and then the bird dangled from a branch and eventually died. It was not a pleasant discovery for us."*

Hidden now revealed

**Linda Van Damme** writes from **Creston**: "*I find more nests once the breeding season is over and the leaves have fallen. They seem so obvious and I can't believe how many times I would have walked*

**Figure 48**. American Robin entangled in fishing line. Creston, BC. 19 June 2008 (Marcia Long).

*past this one in particular, however it was well concealed in the foliage. What fascinated me about this Yellow Warbler nest was how fishing line had been incorporated into the rim of the nest* (Figure 49) *so that it was anchored in with other nesting materials. I pulled it out as I was curious about the length and it measured a surprising 1.6 m (5 ft 3 in) long. The nest bowl was trampled down showing evidence of use so the birds must have been able to come and go without getting tangled up."*

**Figure 49.** It is amazing that a Yellow Warbler did not get tangled in this fishing line filament on the rim of its nest. 3 November 2008 (Linda M. Van Damme).

**Historical Information**

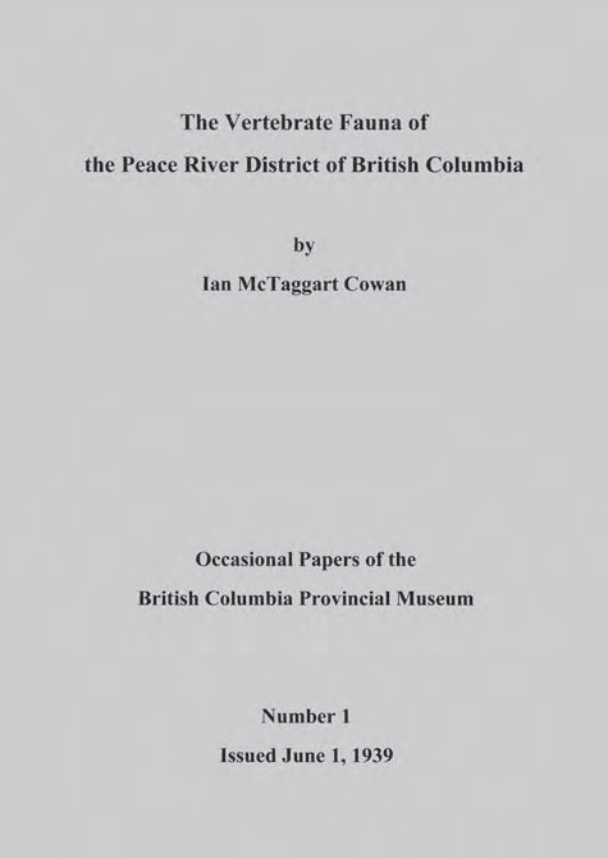
Over 12,000 individual breeding records were gleaned from published and unpublished literature, field notes, consultant reports (Figure 50), museum collections, old correspondence, and reference books in 2008. Reliable breeding information was again transferred to individual nest cards for later electronic entry.

**Figure 50.** Hidden in the pages of wildlife consultant reports is a treasure of information on the occurrence, numbers, distribution, and breeding biology of birds in British Columbia. In 2008, Ron Jakimchuk retired from consulting and donated his 38-year collection of well-organized material to the Biodiversity Centre for Wildlife Studies library. North Saanich, BC. 28 February 2008 (R. Wayne Campbell).

This is a task, unfortunately, that requires someone with knowledge and experience with breeding birds in the province, knows the individuals involved, is familiar with the area and its habitats, knows the species' breeding season, and can quickly evaluate the worth of a record. In the past, we had eager but inexperienced volunteers attempt this "extract and transfer" process but the information was not always straightforward and often required some interpretation. In addition, there is "value added" information that only an experienced person can extract to enhance the value of the record.

As an example, Wayne Campbell transferred breeding records from a 1939 publication *The Vertebrate Fauna of the Peace River District of British Columbia* by Ian McTaggart-Cowan (British Columbia Provincial Museum Occasional Paper No. 1, Victoria, BC. 102 pages). The report covered a

British Columbia Provincial Museum collecting trip by Ian McTaggart-Cowan and Patrick W. Martin between Tupper Creek and Charlie Lake from 5 May to 30 June, 1938. In total, 147 breeding records representing 38 species were extracted all of which provide a historical baseline inventory of birds nesting in the southern Peace River region (Figure 51). Because Wayne was familiar with the areas visited the "value added" information added to each nest card included descriptions of unchanged habitats and UTM co-ordinates.



The Vertebrate Fauna of

the Peace River District of British Columbia

by

Ian McTaggart Cowan

Occasional Papers of the

British Columbia Provincial Museum

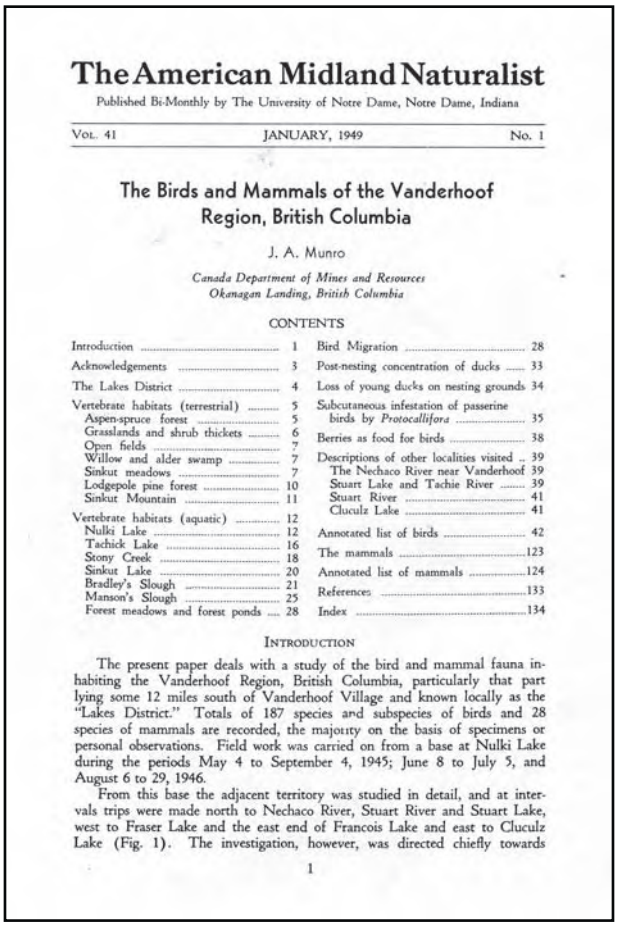
Number 1

Issued June 1, 1939

**Figure 51.** The pioneering field work by biologists Ian McTaggart-Cowan and Patrick W. Martin in the southern Peace River region in the late 1930s, and their commitment to publish their findings, provided a solid base upon which conservation concerns today are better interpreted and understood.

It should be noted that while neither biologist rarely completed nest cards themselves they will be credited with the breeding records in annual BCNRS reports.

In 2009, additional historical information from a variety of sources will be added to the BCNRS collection as time permits. In January, sea-bird breeding information was already being extracted from the 1961 publication *A Catalogue of British Columbia Sea-bird Colonies* by R.H. Drent and C.J. Guiguet (British Columbia Provincial Museum Occasional Paper No. 12, Victoria, BC. 173 pages). The reports and publications of the late James A. Munro are still being searched for breeding records, the latest being *The Birds and Mammals of the Vanderhoof Region, British Columbia* (The American Midland Naturalists 41:1-138, 1949; Figure 52). Another example of a publication that was searched in 2008 for nest records and will probably be completed in 2009 was the 1978 publication *Birds of Pacific Rim National Park* by D.F. Hatler, R.W. Campbell and A. Dorst (British Columbia Provincial Museum Occasional Paper No. 20, Victoria. 194 pages).



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The Birds and Mammals of the Vanderhoof Region, British Columbia

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CONTENTS



INTRODUCTION

The present paper deals with a study of the bird and mammal fauna inhabiting the Vanderhoof Region, British Columbia, particularly that part lying some 12 miles south of Vanderhoof Village and known locally as the "Lakes District." Totals of 187 species and subspecies of birds and 28 species of mammals are recorded, the majority on the basis of specimens or personal observations. Field work was carried on from a base at Nulki Lake during the periods May 4 to September 4, 1945; June 8 to July 5, and August 6 to 29, 1946.

From this base the adjacent territory was studied in detail, and at intervals trips were made north to Nechaco River, Stuart River and Stuart Lake, west to Fraser Lake and the east end of Francois Lake and east to Cluculz Lake (Fig. 1). The investigation, however, was directed chiefly towards

1

**Figure 52.** The bird life of central regions of British Columbia, especially in the vicinity of Vanderhoof, was well documented by James A. Munro in 1945 and 1946. Breeding information extracted and added to BC Nest Record Scheme files for this little known area over six decades ago provides an insight into the status of wetlands and use by waterbirds.

**List of Species with Total Breeding Records by Family**

**Family Anatidae - Geese, Swans and Ducks (2,514):** Canada Goose - 522, Mute Swan - 1, Trumpeter Swan – 3; Figure 53, Wood Duck - 59, Gadwall - 50, American Wigeon - 90, Mallard - 586, Blue-winged Teal - 72, Cinnamon Teal - 18, Northern Shoveler - 38, Northern Pintail - 40, Green-winged Teal - 53, Canvasback - 61, Redhead - 20, Ring-necked Duck – 70, Lesser Scaup - 127, Harlequin Duck - 2, White-winged Scoter - 1, Bufflehead - 150, Common Goldeneye - 63, Barrow's Goldeneye - 237, Hooded Merganser - 17, Common Merganser - 196, Red-breasted Merganser - 1, and Ruddy Duck - 37.

**Figure 53.** Over the past several decades the Trumpeter Swan has increased its breeding range from southern Alaska and Yukon Territory into northern British Columbia to include the northern portions of the boreal forest. Near Goodlow, BC. 26 June 2008 (R. Wayne Campbell).

**Family Phasianidae - Partridges, Pheasant, Grouse, Ptarmigan and Turkey (415):** Chukar - 1, Gray Partridge - 1, Ring-necked Pheasant - 25, Ruffed Grouse - 216, Spruce Grouse - 48, White-tailed Ptarmigan - 34, Dusky Grouse - 49, Sooty Grouse - 34, Sharp-tailed Grouse - 1, and Wild Turkey - 6; Figure 54.

**Figure 54.** The introduced Wild Turkey is now part of the breeding avi-fauna of British Columbia. Meadow Creek, BC. 11 September 2008 (Alistair Fraser).

**Family Odontophoridae - American Quail (50):** California Quail – 50.

**Family Gaviidae - Loons (179):** Red-throated Loon - 1, and Common Loon - 178.

**Family Podicipedidae - Grebes (7,096):** Pied-billed Grebe - 37, Horned Grebe - 27, Red-necked Grebe - 144, Eared Grebe - 6,645, Western Grebe - 239, and Clark's Grebe - 4.

**Family Hydrobatidae - Storm-Petrels (49):** Fork-tailed Storm-Petrel - 1, and Leach's Storm-Petrel - 48.

**Family Phalacrocoracidae - Cormorants (2,284):** Brandt's Cormorant - 43, Double-crested Cormorant - 457, and Pelagic Cormorant - 1,784.

**Family Ardeidae - Bitterns, Herons, Egrets, and Night-Herons (376):** American Bittern - 1, Great Blue Heron - 368, and Green Heron - 7.

**Family Cathartidae - Vultures (4):** Turkey Vulture - 4.

**Family Accipitridae - Osprey, Kites, Eagles, Hawks and Allies (385):** Osprey - 193, Bald Eagle

- 103, Northern Harrier - 3, Cooper's Hawk - 15, Northern Goshawk - 5, Red-tailed Hawk - 62, and Golden Eagle - 4.

**Family Falconidae - Falcons (44):** American Kestrel - 16, Merlin - 4, and Peregrine Falcon - 24.

**Family Rallidae - Rails, Gallinules and Coots (887):** Virginia Rail - 3, Sora - 33; Figure 55, and American Coot - 851.

**Figure 55.** The large number of Sora nests found in 2008 is well above the average of about five per year the British Columbia Nest Record Scheme receives. This nest was found at 625 m elevation, unusual for the Creston valley. Lister, BC. 24 June 2008 (Linda M. Van Damme).

**Family Gruidae - Cranes (3):** Sandhill Crane - 3.

**Family Charadriidae - Plovers (201):** Semipalmated Plover - 4, and Killdeer - 197.

**Family Haematopodidae - Oystercatchers (59):** Black Oystercatcher - 59.

**Family Recurvirostridae - Stilts and Avocets (2):** American Avocet - 2.

**Family Scolopacidae - Sandpipers, Phalaropes and Allies (79):** Greater Yellowlegs - 1, Lesser Yellowlegs - 1, Solitary Sandpiper - 2, Spotted Sandpiper - 49, Long-billed Curlew - 1, Wilson's Snipe - 9, Wilson's Phalarope - 16.

**Family Laridae - Gulls, Terns and Allies (3,891):** Bonaparte's Gull - 4; Figure 56, Mew Gull - 33, Ring-billed Gull - 1,282, California Gull - 1, Herring Gull - 123, Glaucous-winged Gull - 2,028, and Black Tern - 420.

**Figure 56.** Not only are Bonaparte's Gull nests tough to spot but their location in spruce trees make them difficult to check. Downy young, however, confirm breeding in an area. (Michael I. Preston).

**Family Alcidae - Auks, Murres and Puffins (79):** Common Murre - 1, Pigeon Guillemot - 14, Marbled Murrelet - 1, Rhinoceros Auklet - 47, and Tufted Puffin - 16.

**Family Columbidae - Pigeons and Doves (55):** Rock Pigeon - 45, Band-tailed Pigeon - 7, and Mourning Dove - 3.

**Family Strigidae - Typical Owls (104):** Barn Owl - 4, Western Screech-Owl - 16, Great Horned Owl - 59, Northern Pygmy-Owl - 1, Spotted Owl - 1, Barred Owl - 5, Short-eared Owl - 4, and Northern Saw-whet Owl - 14.

**Family Caprimulgidae - Goatsuckers (6):** Common Nighthawk - 4, and Common Poorwill - 2.

**Family Apodidae - Swifts (7):** Black Swift - 1, Vaux's Swift - 3, and White-throated Swift - 3.

**Family Trochilidae - Hummingbirds (43):** Black-chinned Hummingbird - 2, Anna's Hummingbird - 18, Calliope Hummingbird - 3, and Rufous Hummingbird - 20.

**Family Alcedinidae - Kingfishers (9):** Belted Kingfisher - 9.

**Family Picidae - Woodpeckers (277):** Lewis's Woodpecker - 19, Williamson's Sapsucker - 2, Yellow-

bellied Sapsucker - 38, Red-naped Sapsucker - 15, Red-breasted Sapsucker - 24, Downy Woodpecker - 17, Hairy Woodpecker - 43, American Three-toed Woodpecker - 11, Black-backed Woodpecker - 1; Figure 57, Northern Flicker - 93, and Pileated Woodpecker - 14.

**Figure 57.** The Black-backed Woodpecker is high on the list of birds to see in British Columbia but finding an active nest with young is a real bonus. Near Mackenzie, BC. 29 June 2008 (John and Vi Lambie).

**Family Tyrannidae - Tyrant Flycatchers (164):** Olive-sided Flycatcher - 1, Western Wood-Pewee - 3, Willow Flycatcher - 7, Least Flycatcher - 10, Hammond's Flycatcher - 4, Dusky Flycatcher - 1, Pacific-slope Flycatcher - 14; see Figures 37 and 44-46, Eastern Phoebe - 17, Say's Phoebe - 7, Western Kingbird - 61, and Eastern Kingbird - 39; Figure 58.

**Family Vireonidae - Vireos (34):** Cassin's Vireo - 7, Hutton's Vireo - 2, Warbling Vireo - 21, and Red-eyed Vireo - 4.

**Family Corvidae - Jays, Magpies and Crows (146):** Gray Jay - 12, Steller's Jay - 7, Clark's Nutcracker - 3, Black-billed Magpie - 37, American Crow - 38, Northwestern Crow - 9, and Common Raven - 40.

**Family Alaudidae - Larks (10):** Sky Lark - 1, and Horned Lark - 9.

**Family Hirundinidae - Swallows (1,471):** Purple Martin - 67, Tree Swallow - 532, Violet-green Swallow - 38, Northern Rough-winged Swallow - 29, Bank Swallow - 66, Cliff Swallow - 523, and Barn Swallow - 216; Figure 59.

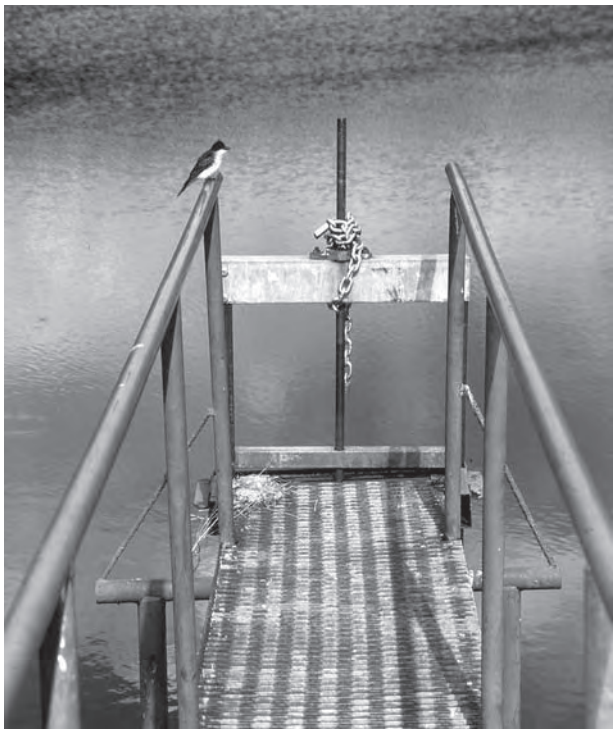


**Figure 58.** Most Eastern Kingbird nests are found in trees and shrubs so this exposed nest at the end of a walkway on a flood control structure is unusual. Near Riske Creek, BC. 27 July 2008 (R. Wayne Campbell).

**Family Paridae - Chickadees (88):** Black-capped Chickadee - 43, Mountain Chickadee - 18, and Chestnut-backed Chickadee - 27.

**Family Aegithalidae - Bushtit (7):** Bushtit - 7.

**Family Sittidae - Nuthatches (34):** Red-breasted Nuthatch - 29, White-breasted Nuthatch - 2, and Pygmy Nuthatch - 3.

**Family Certhiidae - Creeper (13):** Brown Creeper - 13

**Family Troglodytidae - Wrens (54):** Rock Wren - 2, Bewick's Wren - 4, House Wren - 21, Winter Wren - 20, and Marsh Wren - 7.

**Family Cinclidae - Dipper (19):** American Dipper - 19.

**Family Regulidae - Kinglets (38):** Golden-crowned Kinglet - 35, and Ruby-crowned Kinglet - 3.

**Figure 59.** The number of Barn Swallow nests, and newly fledged young, recorded in 2008 was significant. Burnaby Lake, BC. 8 August 2007. (Wayne C Weber).

**Family Turdidae - Bluebirds, Thrushes and Allies (487):** Western Bluebird - 17, Mountain Bluebird - 236, Townsend's Solitaire - 27; Figure 60, Swainson's Thrush - 14, Hermit Thrush - 14, American Robin - 177, and Varied Thrush - 2.

**Figure 60.** Unless an incubating bird is flushed by a passing vehicle it is nearly impossible to spot a Townsend's Solitaire on its nest tucked in a crevice in a road cutbank. Creston valley, BC. 24 June 2008 (Linda M. Van Damme).

**Family Mimidae - Mockingbird, Thrashers and Allies (16):** Gray Catbird - 15, and Sage Thrasher - 1.

**Family Sturnidae - Starling and Allies (114):** European Starling - 114.

**Family Motacillidae: Wagtails and Pipits (6):** American Pipit - 6.

**Family Bombycillidae - Waxwings (34):** Bohemian Waxwing - 1, and Cedar Waxwing - 33.

**Family Parulidae - Wood-Warblers (157):** Tennessee Warbler - 2, Orange-crowned Warbler - 25, Nashville Warbler - 4, Yellow Warbler - 35, Magnolia Warbler - 2, Cape May Warbler - 1, Yellow-rumped Warbler - 22, Black-throated Gray Warbler - 3, Black-throated Green Warbler - 1, Townsend's Warbler - 35, American Redstart - 8, Northern Waterthrush - 3, MacGillivray's Warbler - 2, Common Yellowthroat - 12, Wilson's Warbler - 2, and Canada Warbler - 1.

**Family Thraupidae - Tanagers (4):** Western Tanager - 4.

**Family Emberizidae - Towhees, Sparrows, Longspurs and Allies (214):** Spotted Towhee - 35, Chipping Sparrow - 47, Clay-colored Sparrow - 7, Vesper Sparrow - 14, Lark Sparrow - 1, Savannah Sparrow - 10, Nelson's Sharp-tailed Sparrow - 2, Song Sparrow - 34, Lincoln's Sparrow - 5; Figure 61, Swamp Sparrow - 1, White-throated Sparrow - 4, White-crowned Sparrow - 18, and Dark-eyed Junco - 63.

**Family Cardinalidae: Grosbeaks, Buntings, and Allies (18):** Rose-breasted Grosbeak - 7, Black-headed Grosbeak - 7, and Lazuli Bunting - 4; Figure 62.

**Figure 61.** The colour of Lincoln's Sparrow eggs in British Columbia varies greatly around the province. This nest, discovered by Andrew Tyrrell near Inga Lake, BC., is the most common colour and pattern. 13 June 2008.

**Family Icteridae - Blackbirds, Orioles and Allies (1,484):** Bobolink - 1, Red-winged Blackbird - 870, Western Meadowlark - 4, Yellow-headed Blackbird - 320, Rusty Blackbird - 4, Brewer's Blackbird - 117, Common Grackle - 77, Brown-headed Cowbird - 74, Bullock's Oriole - 15, and Baltimore Oriole - 2.

**Figure 62.** The pale blue eggs in a Lazuli Bunting nest is always a pleasant surprise to discover. Creston valley, BC. 24 June 2008 (Linda M. Van Damme).

**Family Fringillidae - Cardueline Finches and Allies (76):** Gray-crowned Rosy-Finch - 1, Purple Finch - 3, House Finch - 28, Red Crossbill - 22, White-winged Crossbill - 1, Pine Siskin - 9, American Goldfinch - 7, and Evening Grosbeak - 5; Figure 63.

**Figure 63.** This fledged Evening Grosbeak was one of two being fed constantly by its parents on a conifer branch. Fort St. John, BC. 16 July 2008 (Nikki Tyrrell).

**Family Passeridae - Old World Sparrows (81):** House Sparrow - 81.

**Total nests/broods = 23,902; 234 species (2008 season - 11,878; historical – 12,024)**

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

A A.M. Alexander - 1, **Mac Allen - 17**, **Robert W. Allen - 4**, E.M. Anderson - 15, **Errol Anderson - 25**, **John Anderson - 1**, **Ron Anderson - 13**, **Kris Andrews - 45**, **Anonymous - 16**, **Ted Ardley - 2**, **Gladys Armstrong - 2**, **Bethany Arndt - 2**, **Janice E. Arndt - 31**, **Justin Arndt - 1**, **J. Ashton - 1**, R. Askevold - 1, **Alfred Atkins - 4**, **Kevin Atkins – 27** (Figure 64), **Trevo**r and **Laila Atkins - 2**, **Vicky Atkins** and **Alice Beals - 22**, **Vicky** and **Lloyd Atkins – 199** (Figure 65), and R.N. Atkinson - 1.

B B.C. Falconer's Association - 5, **British Columbia Fish and Wildlife Branch - 160**, **British Columbia Parks Branch - 73**, British Columbia Provincial Museum - 1, **British Columbia Waterfowl Society - 1**, John Bailiff - 3, **Bona Baillie - 1**, **Nicola Bakker - 4**, **Peter Balagus - 1**, **Iain Barr - 1**, **Avery Bartels - 2**, **Alice Beals - 22**, **Marc-Andre Beaucher - 1**, Frank L. Beebe - 3, **Barbara Begg -** 4, Kevin M. Bell - 1, Kevin M. Bell and Derek O'Brien - 2, Desmond Belton - 74, Winifred M. Bennie - 2, **Jennifer Bergen** and **F. Don Young - 2**, Alan Best

**Figure 64.** Parts of the Greater Vancouver region were well represented by Kevin Atkins in 2008. This newly fledged Winter Wren is still showing its yellow gape. Vancouver, BC. 30 May 2008 (Kevin Atkins).

**Figure 65.** Vicky and Lloyd Atkins, long time BCNRS participants and major contributors, are the only individuals who regularly monitor Western Kingbirds nesting in an urban environment. Vernon, BC. 25 June 2008 (Lloyd Atkins).

- 1, **Ed Beynon - 52**, **Ed** and **Dawn Beynon - 1**, L.B. Bishop - 4, **Peter Blokker - 7**, Elsie Boggs - 1, Jack Bowling - 20, Dorothy M. Bradley - 2, **James Bradley - 1**, **Gary Breault -1**, **Tom Brighouse** and **Doug Ibbitson - 425**, **Brian Briscoe - 1**, Daniel F. Bronton - 1, Allan Brooks - 97, **W.E. Brooks - 2**, **Doug Brown - 107**, **Quentin Brown - 1**, Alan Burger - 1, Clyde H. Burton - 169, **Beverly H. Butcher - 112**, and **Wylie Bystedt - 4**.

C**Eileen C. Campbell** and **James McCammon - 1**, **Lucille Campbell - 12**, **R. Wayne Campbell – 3,263**, **R. Wayne** and **Eileen C. Campbell – 4,211**, **R. Wayne** and **Eileen C. Campbell** and **James McCammon - 6**, **R. Wayne Campbell** and **Fred Bunnell - 67**, **R. Wayne Campbell** and **James McCammon - 7**, **R. Wayne Campbell** and **Michael I. Preston - 46**, **Tessa Campbell** and **Chris Davidson - 1**, **Canadian Wildlife Service - 35**, Richard J. Cannings - 7, Robert A. Cannings - 9, Steve R. Cannings - 5, Sydney G. Cannings - 13, G. Clifford Carl - 4, **Harry R. Carter - 1**, W. Caspell - 8, W.D. Caspell - 4, **Cathedral Lakes Lodge - 3**, Cecil Waterfowl Group - 41, Don Cecile - 24, **Dan** and **Connie Chapman - 1**, **Chris Charlesworth - 3**, M.J. Christman - 1, Murray Clark - 3, J.O. Clay - 93, D. Code - 2, **Alex Coffey**, **Gloria** and **Orie Kolenchuk**, and **Mary** and **Lorna Schley - 23**, **Maureen Coleman - 1**, **Cyril Colonel - 45**, John Comer - 6, John Comer and Stan Baker - 1, John K. Cooper - 3, John K. and John M. Cooper - 2, John M. Cooper - 6, Louise V. Cooper - 1, **Evi Coulson - 4**, **Evi** and **Mel Coulson - 2**, **Vic Cousineau - 32**, **Creston Valley Wildlife Management Area - 2**, **Jane Cross - 1**, R.A. Cummings - 31, **J.A. Cunningham - 1**, and H.H. Currie - 14.

D**Ed Dahl - 1**, S.J. Darcus - 78, A.R. Davidson - 45, **Gary S. Davidson - 55**, Gary S. Davidson and Anthony J. Erskine - 1, **Tom Davidson - 1**, Brian Davies - 5, **Jim Davis - 4**, Neil K. Dawe - 8, **Cliff Day - 14**, Charles de Bois Green - 7, Gwen de Camp - 2, Ron Diedericks - 1, **Jeff Dinsdale - 1**, Ben Dixon - 1, Robert Dooley - 1, **Adrian B. Dorst - 7**, Douglas D. Dow - 2, Rudi H. Drent - 8, Alex Drugwall - 1, Ducks Unlimited Canada - 3,579, H.P. Dunlop - 1, **Len Dunsford -1**, and **Linda Durrell - 51**.

ER. Yorke Edwards - 21, **Peter Elliott - 10**, **Jim Emerson - 13**, Anthony J. Erskine - 8, and **Rachel Evans - 2**.

F**Sheila Falle - 11**, John Fanin - 1, **Val Fauchan - 7**, **David Finlay - 1**, Joyce Fitz-Gibbon - 6, **Brian Fletcher - 1**, Robert G. Footit - 705, E.H. Forbush - 1, **Trevor Forder - 23**, **Trevor** and **Brent Forder - 1**, J. Bristol Foster - 1, C. David Fowle - 1, J.G. Fowle - 5, **Dale Francis - 6**, **Del Francis - 4**, **Alistair Fraser - 1**, David F. Fraser - 3, D. Lorne Frost - 10, Ralph Fryer - 1, and Ralph Fryer and Cy Morehen - 2.

G**D. Val George - 1**, **George C. Reifel Migratory Bird Sanctuary - 2**, **Ralph** and **Elsie Gerein – 2**, **G.G. Gibson - 7**, Janet Gifford - 2, Carlo Giovanella - 1, W. Earl Godfrey - 6, Luther J. Goldman - 25, **Terry Good - 1**, J.E. Victor Goodwill - 2, Margaret E. and J.E.Victor Goodwill - 1, **Ruth Goodwin - 10**, **Hilary Gordon - 17**, **Hilary Gordon** and **Don Golnick - 11**, Hilary and Orville Gordon - 2, **June Gordon - 1**, **Orville Gordon - 12**, **Robert Gordon - 17**, **Ted Goshulak - 3**, **Donna** and **Stephan Graf - 4**, **Ronald P. Graf - 6**, Douglas J. Graham - 21, James Grant - 13, **Jude Grass - 1**, **Glynn Green - 1**, **Tony Greenfield - 2**, **R. Greyell - 6**, Charles J. Guiguet - 230, Charles J. and Guiguet and Patrick W. Martin - 4.

H**Penny Haering - 4**, **Connie Haist - 1**, **Delbert Halladay - 1**, **David A. Hancock - 2**, C. Handley - 1, **Willie Haras - 51**, George A. Hardy - 1, **Dawson Harpur - 4**, **Lorri Harpur – 264** (Figure 66), **Frank Harris - 1**, **M. Harris - 2**, Brian Hartwick - 1, **Carol Hartwig** and **Raymond Demarchi - 1**, **Michael Harvey - 1**, David F. Hatler - 133, **Doris Hausleitner - 1**, Robert B. Hay - 6, W.

Grant Hazlewood - 1, **Ruth Hellevang - 9**, **Joyce** and **John Henderson - 400**, Edward G. Hennan - 11, **Antonia Hertel - 18**, Jerry Herzig - 2, **Heidi** and **Freddy Hess - 12**, **Werner H. Hesse - 10**, Werner H. and Hilde Hesse - 10, **Ted Hillary - 231**, **Mark Hobson - 7,** Madge Hollington - 1, **Randy Hopkins - 8**, **Steven Hornstein - 1**, Dennis Horwood - 2, Richard R. Howie - 4, **Margaret Hubble - 12**, **Pat Huet - 9**, **Pat Huet** and **Carla Haegele - 69**, and **alter Hughes - 46**.

**Figure 66.** Lorri Harpur spends his working day managing a ranch during which time he discovers nests such as this Willow Flycatcher. Near Rock Creek, BC. 2 July 2008 (Lorri Harpur).

I **Marian Innes – 5**, and **John Ireland - 1**.

J Tom Jacobson - 2, **Darren Jamieson - 36**, **Ron Jeffries - 9**, Leo Jobin - 2, **Marlene Johnston - 1**, and Walter B. Johnstone - 55.

K Brian M. Kautesk - 1, B. Keating - 1, **Joanne Keber - 1**, K.E. Kelleher - 10, L.B. Kellogg - 2, J.E.H. Kelso - 34, **Tim Kendrick- 1**, Ken Kennedy – 1,006, Ken Kennedy and Robert G. Footit - 1, **Robyn Kenton - 1**, Elspeth Kerr - 3, Elspeth Kerr and Sybil Lees - 25, **Karen King - 1**, **G.R.B. Kinney - 2**, Don Kirby - 84, Richard W. Knapton - 48, **Orie** and **Gloria Kolenchuk - 1**, **Cathy Koot - 41**, **Cathy Koot** and **Geoff Price - 4**, Douglas J. Kragh - 2, **Nancy Krueger - 19**, **Nancy Krueger** and **Jack Bowling - 4**, **Nancy Krueger** and **Joel** and **Linda Hawkes - 2**, **P. Kuchar - 1**, **Rhonda Kurllukson - 10**.

L **Elsie Lafreniere - 29**, Hamilton M. Laing - 7, **Adrian Lamb - 1**, **John** and **Vi Lambie - 7**, **Vi** and **John Lambie – 131** (Figure 67), **Doreen Lancaster - 1**, **Lin Langley - 2**, Langley Field Naturalists - 3, Barry D. Leach - 2, **Adrian Leather - 7**, **Debbie Leather - 1**, Martin C. Lee - 3, Sybil Lees - 1, Enid K. Lemon - 3, S.M. Lessard - 1, **Pat Levitt - 1**, **Marcia Long – 44** (Figure 68), **Betty** and **Jim Lunam** - 1, and Robert E. Luscher - 4. Allan M. Lyon - 4, Rob Lyske - 1.

**Figure 67.** Vi and John Lambie not only monitored nest boxes and waterbirds in the Mackenzie area but incidental to banding operations found time to document other breeding records. This bob-tailed Western Tanager fledgling was being fed green bugs by a parent at Mugaha Creek, BC. 8 July 2008 (John and Vi Lambie).

**Figure 68.** Marcia Long enjoys watching and photographing wildlife in the Creston valley and is a keen participant in the BCNRS. Here she photographed four male Tree Swallows all trying to displace a male already in the box. Creston, BC. 4 April 2008 (Marcia Long).

M**Derick MacDonald - 55**, S.D. MacDonald - 2, R.H. MacKay - 2, **Ken MacKenzie - 1**, A.C. Mackie - 1, J. Macoun - 1, Walter S. Maguire - 28, **Diana Maloff - 3**, Walter S. Maquire - 11, Murray Mark - 1, **Scott** and **Natalie Marleau - 1**, Patrick W. Martin - 8, **Harold Mathes - 4**, **Brent Matsuda** and **Darrell Garbitt - 1**, **Larry Matthews - 1**, **Jim Maynard - 223**, **Ron Mayo - 1**, Eric McAlary - 4, Eric McAlary and Richard R. Howie - 1, E.B. and T.T. McCabe - 1, Wayne C. McCrory - 2, **William D. McLover - 1**, **Edward G. McMackin - 13**, **Michael McMann - 1**, Ian McTaggart-Cowan - 18, Ian McTaggart-Cowan and Patrick W. Martin - 147, William J. Merilees - 1, Arthur L. Meugens - 11, H. Middleton - 27, **M. Milburn - 1**, **G.J. Mitchell - 2**, **Mittlenatch Field Naturalists - 1**, Dwight Moore - 2, **Elaine Moore**, **Janice E.** and **Bethany Arndt - 1**, **Elaine Moore** and **Janice E. Arndt - 11**, **Mountainaire Avian Rescue - 3**, **R.O. Muir - 1**, **C.L. Munro - 1**, David A. Munro - 120, James A. Munro - 530, O.J. Murie - 10, **Brian** and **Sheila Murland - 2,** and **G.B. Murphy - 4**.

N**Laure W. Neish - 7**, **Jeff Nelson - 1**, R. Wayne Nelson - 4, R. Wayne Nelson and Ian D. Smith - 2, C.F. Newcombe - 2, F. Newson - 1, **Dean Nicholson - 1**, North American Nest Record Card Program - 144, **North Okanagan Naturalists - 2**, **Ivar Nygaard-Petersen - 48**, **Adam Nyhof - 3**, and **Mark Nyhof - 414**.

O Derek O'Brien - 4, B. Olsen and M. Fourbister - 1, **Stan Olson - 2**, Lowell Orcott - 2, Ted Osmond-Jones - 8, and J. Outerbridge - 5.

P**William Parker - 2**, **Parks Canada - 11**, D.K. Parsons - 3, Mary Pastrick - 5, Mary and Trudy Pastrick - 1, **Jim Patterson - 2**, Adrian B. Paul - 6, Theed Pearse - 165, Dave Pedley - 1, Lynne Pedley - 3, **Janne Perrin - 39**, Brian J. Petrar - 2, **Dirk Pidcock - 43**, **Dirk Pidcock** and **Gail Spitler - 9**, J. Plowden-Wardlaw - 1, **Doug Pollard - 4**, **Andrea Pomeroy - 1**, **Andrea Pomeroy** and **Tracy Anderson - 1**, **Andrea Pomeroy and Jason Hockley - 8**, **Ilya Povalyaev - 1**, Douglas Powell - 2, **G. Allen Poynter - 16**, **Don Preston - 1**, **Joanna Preston - 7**, **Joanna Preston** and **Andrea Pomeroy - 16**, **Joanna Preston** and **Colleen Bryden - 3**, **Joanna Preston** and **Jackie Shaben - 2**, **Joanna Preston**, **Jackie Shaben** and **Brock Ramshaw - 1**, **Joanna Preston**, **Jackie Shaben**, **Brock Ramshaw**, and **Brent Matsuda - 6**, **Joanna Preston**, **Marc d'Entromont** and **Brock Ramshaw - 1**, **Joanna** and **Michael I. Preston - 14**, **Michael I. Preston – 88** (Figure 69), **Michael I. Preston** and **Andrew Tyrrell - 69**, **Michael I.** and **Joanna Preston - 537**, D.L. Pringle - 1, Roy Prior - 3, and **Sandy Proulx - 57**.

**Figure 69.** During his decade in British Columbia, Michael Preston's passion for nest-finding has been manifested in his total commitment to the BCNRS, part of which is producing the annual reports. Here he is inspecting a Mallard nest in the top of a recent brush pile. Near Fort St. John, BC. 18 June 2008 (Andrew Tyrrell).

R Kenneth Racey - 15, A.L. Rand - 2, Al Rand - 2, **Phil Ranson - 2**, **Ross Rathbone - 1**, **Mircea Rau - 1**, **Beverly B. Rawender - 1**, **Walter Read - 1**, **Betty Reid - 1**, **Jim Reid - 450**, **Marilyn Rempel - 1**, **Sheila Reynolds - 22**, **Betty Richmond - 1**, **Joanne Ridley - 1**, J.H. Riley - 1, Richard A. Ring and J.T. Barrett - 4, C. W., Ritz - 2, **Anna Roberts - 75**, **J. Roberts - 12**, **Jennifer Roberts - 1**, **D. Robinson - 1**, Steve H. Robinson - 3, **Laurie Rockwell - 19**, Michael S. Rodway - 1, Thomas H. Rogers - 11, Manfred Roschitz - 1, Royal Ontario Museum - 3, Bruce Runyan - 1, Craig Runyan - 4, and **Glenn R. Ryder - 157**.

S John G. Sarles - 3, Mike Sather and Ted Osmond-Jones - 1, **Ron Satterfield - 14**, **Ron** and **Joy Satterfield - 2**, M. Sawicki - 1, **David Schutz - 1**, **Lorraine Scott** and **Sharon Laughlin - 26**, K.E. Seal - 2, K.G. Seel - 3, **Jackie Shaben** and **Brock Ramshaw - 3**, Michael G. Shepard - 1, Michael G. Shepard and George P. Sirk - 44, T. Shepard - 1, **Bill Shreck - 4**, **Chris Siddle - 124**, **Chris Siddle** and **Chris Charlesworth - 70**, **Ed Silkens - 133**, **Ed Silkens** and **Lyn Paterson - 1**, **Chris Simon - 72**, Fred A. Simpson - 10, **Bill Sinclair - 1**, **George Sinclair - 1**, George P. Sirk - 13, Don Skea - 2, Don Skea and Geoff Price - 4,

Arnold Skei - 2, Ian D. Smith - 6, Laura Smith - 2, A.L. Spighi - 5, **Gail Spitler - 2**, William Spreadborough - 11, G.D. Sprot - 24, Dick Stace-Smith - 5, Stan Stachera - 1, John Stainer - 1, **Julie Steciw - 2**, **Ray Stern - 2**, Tom Stevens - 1, E.B. Stewart - 1, Ronald M. Stewart - 2, **David A. Stirling - 8**, B. Stockman - 2, John T. and Theodora Stonewell-Fletcher - 3, Clark P. Streaton - 1, Hazel and Jim Street - 1, W.D. Strong - 1, Lawson G. Sugden - 9, Ken R. Summers - 7, **Maureen Sutherland - 1**, **Richard Swanston - 2**, Harry S. Swarth - 20, Harry Swarth and J. Dixon - 1, John Switzer - 1, **Lorraine Symmes - 15**, **Megan Symone - 1**, and E.M. Tait - 2.

TJeremy B. Tatum - 4, P.A. Taverner - 1, **G.W. Taylor - 5**, **Howard A. Telosky - 11**, John S. Tener - 4, T.L. Thacker - 2, **Taryn Thiessen - 1**, **Cheryl Thomas - 1**, Diana Thompson - 1, **Shirley Thompson - 5**, **Ryan Tomlinson - 2**, Eric Tull - 1, **Andrew Tyrrell – 60** (Figure 70), **Andrew Tyrrell** and **Michael I. Preston - 2**, **Andrew** and **Nikki Tyrrell - 2**, and **Nikki Tyrrell -** 1.

**Figure 70.** Andrew Tyrrell participated in the Black Tern survey in the Peace River region in 2008. Near Dawson Creek, BC. 28 June (R. Wayne Campbell).

UUBC Department of Zoology - 9, and Titus Ulke - 1.

V**Linda M. Van Damme - 667**, **Margaret Van Der Beek - 1**, Gerald Van Tets - 2, Kevin J. Van Tighem - 2, **Vancouver Natural History Society - 22**, **Sheena Vennesland - 2**, **Victoria Canoe & Kayak Club - 104**, and Victoria Natural History Society - 285.

WCarson Wade - 3, Carson Wade and Dennis Horwood - 1, Lynn Wade - 7, **Ron Walker - 1**, **Phil Walton - 1**, Julia Warner - 1, G. Ross Waters - 15, Brad Watts - 1, Robin R. Weber - 1, Wayne C. Weber - 5, Robert W. Weeden - 8, **Rita Wege - 58**, **Rita Wege** and **Larry Prosser - 1**, **Rita Wege** and **Val Dingwall - 1**, **West Kootenay Naturalists - 8**, Randy Westover - 1, Mildred V. White - 11, Andrew Whyte - 1, M.Y. Williams - 3, Murray Williams - 7, **P. Ray Williams - 14**, **Williams Lake Field Naturalists - 12**, **J. Willson - 1**, **Bob Wilson - 1**, J.W. Winson - 1, **Marcus Womersley - 9**, Michael Woolfe - 1, David A. Woolgar - 10, Joan Woolton - 2, and Richard Wright - 1.

YC.H. Young - 1, and C.J. Young - 2.

ZBarry Zettergreen - 1, Tim Zurowski - 1, and Fred C. Zwickel - 3.

# LONG-TERM MONITORING AND INVENTORY PROJECTS

Participants continued to monitor a variety of nesting birds in 2008. Individual programs included checking **Colonial-nesting Fresh-water Birds** (*e.g.*, Red-necked Grebe, Eared Grebe, Western Grebe, Clark's Grebe, Ring-billed Gull, California Gull, Herring Gull, Caspian Tern, Black Tern (Figure 71), Forster's Tern, Marsh Wren, Red-winged Blackbird, and Yellow-headed Blackbird), **Colonial-nesting Terrestrial Birds** (*e.g.*, Great Blue Heron, Double-crested Cormorant, Purple Martin, Northern Rough-winged Swallow, Bank Swallow, Cliff Swallow, and Barn Swallow), **Raptors** (*e.g.*, Osprey, Bald Eagle, Red-tailed Hawk, Barn Owl, Great Horned Owl, Northern Saw-whet Owl, Western Screech-Owl, and Barred Owl), and **Nest Box Trails** (*e.g.*, Mountain Chickadee, Mountain Bluebird, Western Bluebird, Tree Swallow, and Violet-green Swallow).

Here are some highlights from the 2008 season.

**Figure 71.** The composition of Black Tern nests throughout the province varies greatly depending on location in the wetland. Near Dawson Creek, BC. 26 June 2008 (R. Wayne Campbell).

## Colonial-nesting Fresh-water Birds

Specific field counts of nesting birds along with associated descriptions of water turbidity, vegetation, pH, Secchi disc readings and the like were again gathered at various colonies. Each colony site has been assigned a special "folder" in which historical information is being added each year as it becomes available. For some sites we have managed to compile records for over 50 years of visits. In 2009, a new batch of wetlands will be surveyed.

Some areas surveyed in 2008 included the following:

Salmon Arm

**Ted Hillary** reports a very successful year in the Salmon Arm Bay area for **Western Grebes** with about 66 pairs rearing 110 young which may be the third largest count on record. And, to add to the excitement, at least three pairs of **Clark's Grebe/ Western Grebe** hybrids and pure **Clark's Grebes**, were found breeding.

There were natural threats to the nesting grebes. On June 9th a windstorm was affecting approximately 30 nests which were on the west side of the municipal wharf. The nests on the east side of the wharf were a little more protected. When Ted visited the following evening most of the nests on the west side had been washed out as the lake continued to rise. It was a little bit better on the east side although if the lake continued to rise these nests would also get washed out. He did see a Clark's Grebe sitting on a nest east of the wharf with, he thinks, a partner Western Grebe nearby, but there were problems with the nest and it too might submerge. Christmas Island, an alternate nesting site in Salmon Arm Bay, was almost completely flooded. Grebes have also nested in the vicinity of Salmon River mouth but none were observed in 2008. The grebes did re-build but once the eggs hatch the families scatter throughout the Bay.

Human threats included commercial development beside the river and lake where many truckloads of fill were dumped to create building and parking sites. Recreational boat traffic increased as did the use of seadoos. On July 1st, celebrations from a barge on the lake was disruptive at a time when the grebes were hatching eggs and much of the debris from the fireworks was floating on the surface of the water. This impact will have to be carefully monitored in future years (Figure 72).

The Ring-billed Gull colony was also surveyed.

Duck Lake

**Linda Van Damme** completed her 14th season monitoring breeding **Western Grebes** in the Creston valley. In 2008, pairs managed to rear young despite windstorms and disturbances by helicopter overflights (Figure 73). By July 7th, 24 adults were observed sitting on nests but a major windstorm three days later destroyed all of the nests. Many pairs started to re-build but another major windstorm on July 18th created whitecaps on the lake foiling some of their building efforts, but a few nests did survive.


**Figure 72.** For years local naturalists have worked with governments, industry and builders, sportsmen, and recreationists to preserve the Western Grebe habitat at the south end of Shuswap Lake. The future of the nesting grebes requires a constant vigil and reporting process. Salmon Arm, BC. 22 May 1993 (R. Wayne Campbell).

**Figure 73.** Many studies have shown that fixed-wing aircraft have much less of an impact on breeding birds than helicopter overflights. Duck Lake, BC. 13 August 2008 (Linda M. Van Damme).

Toward the end of July, determined pairs had built new nests and many of these were successful in producing young. On August 13th, a low flying helicopter flushed nesting adults from their nests, leaving eggs and newly hatched chicks exposed to predators. One adult grebe was frantically trying to distract a **Ring-billed Gull** from approaching its exposed nest. The nesting season lingered through August and into early September when one late nesting adult finally abandoned its nest on September 7th.

Western Grebe families were observed through to mid-November and it was pleasing to know the season had some success compared to 2007.

In addition, breeding information was collected for **Clark's Grebe** and **Forster's Tern**, the latter species that will be given a full species account in the upcoming issue of *Wildlife Afield*.

Fort St. John, Goodlow, Dawson Creek, and Swan Lake

Wetlands, big and small, throughout the southern Peace River region were thoroughly surveyed by **Wayne** and **Eileen Campbell**, **Michael Preston**, and **Andrew Tyrrell**. Part of the research was setting out **Black Tern** nesting platforms in May and checking them in late June. At some sites Black Terns were squabbling over the platforms even before they had been anchored. Over 70 percent were occupied which was very encouraging. At one location, **Eared Grebes** decided to take advantage of the nest sites while they waited for aquatic plants to grow.

New breeding sites for **Red-necked Grebe** (Figure 74), Eared Grebe and Black Tern were discovered along with a host of other fresh-water colonial species. Also, a surprising number of Common Grackle nests were found in areas outside their known range in the northeast.

**Figure 74.** At some lakes in the southern Peace River region loose colonies of Red-necked Grebes built their nests among pond lilies using the stems and leaves as material. Near Goodlow, BC. 19 June 2008 (R. Wayne Campbell).

Associated with the surveys were new sites for **Yellow Rail**, **Nelson's Sharp-tailed Sparrow**, and **LeConte's Sparrow**.

Southern Cariboo

Brood surveys were completed for marshes, sloughs, and ponds from Williams Lake west to Puntzi Lake and south to the vicinity of 70 Mile House.

Rock Creek

**Lorri Harpur**, and his son **Dawson**, checked cattail marshes for nesting **Red-winged** and **Yellow-headed blackbirds**. They also set out **Black Tern** nesting platforms.

## Colonial-nesting Terrestrial Birds

Great Blue Heron

Tracking the activity and reproductive success or failure of Great Blue Heron colonies continued at many locations throughout the province. We received cards for single nests and small to large colonies in remote regions to urban centres (Figure 75). Many participants timed their visits this year to coincide with large and visible young in the nest. Chris Siddle continued his monitoring of the Vernon "urban" colony.

**Figure 75.** Keeping track of nest activity and success of Great Blue Heron colonies in natural and human-altered environments is equally important. Vernon, BC. 10 March 1996 (R. Wayne Campbell).

During their monitoring program in the Creston valley over the past decade, **Cyril Colonel** and **Linda Van Damme** have observed major changes in the location and occupancy of colony sites. Great Blue Herons abandoned colonies in black cottonwoods along Six Mile Slough, Kootenay Landing, and Goat River. The colony at Leach Lake has shifted location to the northwest so it is no longer possible to count nests and contents. However, one small, recently established colony at the south end of the valley, is still monitored annually.

Other breeding records were received from a variety of people who recorded heron activity during other travelling.

Purple Martin, Northern Rough-winged, Bank, Cliff and Barn Swallows

The only serious monitoring was completed by **Cyril Colonel** and **Linda Van Damme** throughout the **Creston valley** on **Barn Swallows**. They started the survey in 2004 and continued it in 2008. Comparisons are as follows:

| | **2004** | **2008** |
|---|---|---|
| Total number of nests checked | 179 | 110 |
| Total number of active nests | 87 | 73 |
| Total number of nestlings | 241 | 240 |

Although fewer nests were checked in 2008, the number of nestlings produced was the same. What makes this survey more useful is the photo-documentation of nest sites (Figure 76) and location of nests (Figure 77).

Cyril would like to see a pilot Barn Swallow program initiated in the Creston valley whereby old buildings (Figure 76) with active nest sites could have signage similar to the "Wildlife Trees" program to protect these sites with the property owner being accredited. He also suggested that a nesting platform be designed so dairy farmers could erect them on their properties.

**Figure 76.** Barn Swallows nested in this old building in 2004 and 2008. Creston, BC. June 2008 (Cyril Colonel).


**Figure 77.** Cyril Colonel has suggested that a program be initiated in the Creston valley with signage that would identify Barn Swallow nest sites similar to the "Wild Trees" program operated by the provincial government. Summer 2008. (Cyril Colonel).

**Purple Martin** nest boxes, in loose colonies, were again monitored by **Ed Silkens** (Campbell River) and **Ivar Nygaard-Petersen** (Myrtle Rocks).

Colonies for other swallow species were checked on an ad hoc basis except some **Cliff Swallow** sites that could be easily reached and contents safely checked using a special flash lamp by Wayne Campbell.

## Osprey

Again, we are pleased that some very dedicated contributors continued to monitor the activity and breeding success of Ospreys in their own study areas. While having annual information documented and deposited in a central file is critical it is also important for long-term trend analysis that information is recorded as much as possible by the same individual and in the same standard format.

We welcome **Lorraine Symmes** who is keeping track of Ospreys nesting in the Woodbury area along the western shore of Kootenay Lake, north of Ainsworth Hot Springs.

We also received many cards from other contributors who recorded breeding activity in remote areas (*e.g.,* north of Chetwynd) while travelling around the province or in areas they did most of their field work (*e.g*., **Vicky** and **Lloyd Atkins** - north Okanagan valley, **Cathy Koot** -Cariboo, and **Vi** and **John Lambie** - Mackenzie).

West Kootenay (Arrow Lakes)

**Gary Davidson** - no monitoring this season.

West Kootenay (Balfour to Waneta)

**Janice Arndt, Elaine Moore, Rita Wege** and **Larry Prosser** monitored nests along the Kootenay and Columbia Rivers for their 12th consecutive season. Janice and Elaine cover north Nelson to Balfour while Rita and Larry cover south Nelson to Waneta.

In 2008, 28 pairs attempted to breed within their study area but only 19 (68%) were successful with 37 young observed. The average number of young per occupied nest was 1.3 and per successful nest was 1.9. The average number of young per successful nest was high as a result of a high incidence (over 25%) of triplets in nests that fledged young. Four of the successful nests were placed in natural situations and 15 at artificial sites. One site south of Trail has been active each of the 12 years of the study and has raised 24 young, including four sets of triplets.

Canada Geese only used 18 Osprey nests in 2008. In most years 30-40 nests contain incubating geese each spring. Two nests used by geese were successfully used later by Ospreys.

Rita voiced her concerns this season when she noted an obvious decline in nesting along her route from Nelson to Castlegar. Historical nest sites on the dams had been removed by Fortis BC due to safety reasons and were replaced with new platforms on poles. However, these were not being used by Osprey. Rita initiated discussion with Fortis BC networking with local biologist Marlene Machmer who determined that some of the areas where alternate structures have been erected are subject to higher levels of human disturbance. It was suggested that Fortis could take a close look at its current platforms, and determine which ones have good potential for use based on a combination of historical use, proximity to foraging sites, eagle nests, and current human disturbance factors. There may also be potential to install platform structures on each of the dams that were previously occupied, which do not interfere with their operations, if Fortis was interested.

Creston Valley (United States border to south Kootenay Lake)

**Linda Van Damme** and **Cyril Colonel** completed their 11th consecutive season of monitoring Ospreys. Visits started in early April to determine how many nests had survived the heavy snowfall of winter and two nests were missing, having fallen out of the cottonwood trees; one of these was rebuilt. Other nests built on human-made structures such as power poles, RR trestle bridges and navigation lights were intact. It was the first time in 11 years

that the nests along Channel Road were inactive. One had been used earlier in the season by a pair of Canada Geese.

The season started with 36 active nests but it was a cold, wet spring and up to 14 nests were abandoned at some stage of incubation or brooding of young. One nest where triplets were observed being fed by the adult (Figure 78) was later found to be inactive and it was disappointing to discover the bodies of the decomposing nestlings at the base of the pole. The season ended with an average of 1.4 young per productive nest, the lowest average in 11 years.

**Figure 78.** On 25 June 2008, a male brought a fish to the nest and the female fed three hungry, naked headed nestlings but by 7 July the nest was abandoned. This is the third consecutive year this nest has failed. Creston, BC. 20 June 2008 (Linda M. Van Damme).

East Kootenay (Cranbrook, Wycliffe, Ha Ha Creek,Wasa and West Wardner)

**Sheila Reynolds** and **Judy Winterbottom** in their third year of monitoring local Osprey checked 17 nest sites and the majority of these were on special poles and platforms. One site at Mayook Ranch is on a platform in a Douglas-fir tree. The nest built this year at the Bull River Road and Fort Steele/Wardner Road junction on a power pole had been removed and the Osprey did not rebuild. I am concerned that the chain of lakes along the Ha Ha Creek Road was treated to kill Northern Pike which may have affected the Osprey and the Common Loons as no young loons were seen. The Osprey that nests in this area raised only one of their two young to fledging. One nest site at the Bull River/Fort Steele Road produced two fledglings. The other nest was not active this year. It was nice to see three very active and healthy birds at the Wycliffe/Highway 95 corner. We ended the season with 17 nests of which 12 were active and produced young. Three nest sites had some activity but were abandoned during the season while two nest sites had no activity. A total of 17 young fledged giving an average of 1.4 young/nest.

Woodbury area

**Lorraine Symmes** has been tracking the nest at the old village site of Florence, about one kilometre south of Woodbury Point officially for at least four years and unofficially (casually keeping an eye) for about nine years. This nest was active for a couple of weeks in May, then something happened to the egg(s) and the adults were left flying around for the rest of the summer. They started "courting" the first couple of weeks in August and building a second nest on pylons 50 yards to the south. That pylon looks too uneven for it to be successful next year. That's two years in a row that pair have failed to protect the egg from something, could be the eagles that live up at Twin Bays or a raccoon what was seen nearby, who knows?

The Cedar Creek nest about 200 m north of Ainsworth has been recorded for only two years as it is hidden from view from the highway. It was discovered from the water, kayaking, but who knows how long the Osprey had been coming back as the nest looks established and well used over time. It was not active until about June 13th when adults were discovered incubating. It seemed the eggs hatched about July 21st for #1 and July 27th for #2. By my figuring they won't fledge until around Sept 12th. By September 15th both young were standing in the nest (Figure 79) with the parent in a nearby tree (Figure 80). It seems so late, so hoping the weather holds and thank goodness the Kokanee are running.

Well I'm pleased to say that Osprey chick #1 fledged Sept 18th and chick #2 fledged Sept 23rd. The same day as the second one flew, the adults no longer stood sentinel and took off. However they have continued to drop fish at the nest site for three days. Young birds are coming and going. Their plumage is changing daily and they seem well fed as one of the dropped fish at the nest has been ignored for so long that a gull was seen taking it away.

Here are the final dates:

*Last saw adult in vicinity of nest Oct 3rd when dropped half a fish off for the youngsters. If the adults hadn't stuck around so late these guys probably wouldn't have made it....*

*Last saw young #1-male-(fledged Sept 18th) the morning of Oct 8th, but did not return to vicinity to roost as usual, and not been back since.*

**Figure 79.** Two large nestlings standing in nest prior to fledging. Cedar Creek, BC. 17 September 2008 (Lorraine Symmes). In the Kootenays, many Ospreys fledge during the second and third week of August but may return to the nest to be fed for up to two weeks afterwards. In 2008, the young fledged between 18 and 23 September and returned to their nest to be fed into first week of October.

**Figure 80.** A parent Osprey watching its two nestlings at Cedar Creek, BC.19 September 2008 (Lorraine Symmes).

*Last saw young #2-female (fledged Sept 23rd) the morning of Oct 10th-- but did not return to roost that night, as she usually does.*

*Both looked healthy and in pretty good shape.--Sure hope they survive many long years.*

*Oct 7th night time temperatures dropped below 3 degrees and winds picked up. When it switched around to the north giving them a tailwind for migration I think it convinced them to go, along with cold temps.*

*I must say I got really attached to them and miss them loads. It was such a great experience and I look forward to the parents coming back next year and nesting EARLIER! Too much nail biting this year!*

Southern Vancouver Island

While not a formal survey many Osprey nests from Sooke, Victoria and North Saanich north to Cowichan Bay were monitored by a small group of BCNRS participants. Some nests become special and are watched very closely. One nest, on a lamp post in the middle of active playing fields at the University of Victoria, was visited daily.

A capsule summary of the bird's annual visit was recorded by Wayne Campbell as follows: *The first bird (an adult male) arrived at its nest on the playing field lights on April 10 followed by a female six days later. They quickly settled down to nesting activities and on July 19 two young left the nest for their inaugural short flight. Within 10 days the male disappeared as did a juvenile. The female and a single young returned to the nest daily until September 19 after which the single juvenile could be watched each day in the early morning eating a fish on its nest. It was last seen, perched atop light posts, on October 8. The breeding season for this family lasted 182 days or half a year!*

Bald Eagle

The population of Bald Eagles in British Columbia is generally increasing across southern regions of the province and is most notable throughout the Lower Mainland. In fact, pairs of adults in the Fraser River delta hold breeding territories throughout the year because real estate is at a premium. A number of contributors monitor historical nesting sites and more are recording new nest sites as they are discovered (Figure 81). For some well known nests we have up to six different people reporting the same nest so its progress is well documented.

In the West Kootenay region, **Janice Arndt** monitors 12 nesting territories between Balfour and Castlegar. **Cyril Colonel** and **Linda Van Damme** have noted a 50% increase in nesting in the Creston valley between 1998 to 2007 where they now monitor 12 known sites. In 2008, it was also the first time they recorded a well-established Osprey nest usurped by eagles. Volunteers at wildlife rehabilitation centres are passionate and busy people year-round so we were very impressed when **Antonia Hertel** and **Rachael Evans**, associated with **Avian Mountainaire Avian Rescue Society**, submitted cards for eagle nests they were monitoring on west-central Vancouver Island.

**Figure 81.** The first clue that Bald Eagles have returned to traditional nest sites is an adult perched near its nest. McKinley Lake, BC. 14 June 2008 (Andrea Pomeroy).

Red-tailed Hawk

The most concentrated effort to find and check Red-tailed Hawk nests again was carried out by **Linda Van Damme** and **Cyril Colonel** in the **Creston valley** where 27 active nests were monitored in 2008. The large breeding population can be attributed to food supply (Figure 82), available nest sites (mostly mature black cottonwoods), and extensive farmlands.

Known Red-tailed Hawk nests in the **Lower Mainland** were check by a number of participants but no formal survey was completed.

## Other Species

For many years **Vicky** and **Lloyd Atkins** have been keeping track of details of nesting locations and brood size for the **Western Kingbird** in an urban environment (see Figure 65). Over the years this data set will prove to be invaluable.

Historical and 2008 breeding information for **Common Loons** on two large lakes were provided by **Derek MacDonald** (Lac Le Jeune) and **Walter Hughes** (Loon Lake).

**Figure 82.** Some Red-tailed Hawks begin nesting as early as late February in the Creston valley, BC. when voles are plentiful. 14 February 2006 (Linda M. Van Damme).

## Nest Box Trails

Each season well established nest box trails are monitored throughout a variety of habitats in the province which include grasslands, wetlands, shrublands, deciduous and coniferous forests, subalpine slopes, and urban and rural properties. And each season some of these trails are expanded and new ones developed.

**Carla Haegele**, from the Creston Valley Wildlife Management Area (CVWMA), writes to share with us what was accomplished at the Corn Creek Marsh Unit in summer 2008.

The swallow boxes along the popular "Marsh Trail Loop" were in need of replacement. A connection was made with a high school woodworking class through the CVWMA's stewardship program. Mike Vanness, the grade 9 woodworking teacher at J L Crowe Secondary School in Trail was keen to get his class involved. In the spring of 2008, his students built 44 swallow and 28 Wood Duck nesting boxes (Figures 83 and 84) with the help of a lumber donation from Kalesnikoff Lumber Company in Castlegar. The students came to the wetland in late May and helped erect the swallow boxes along the trail (Figures 85 and 86). They looked inside some of the older nest boxes and saw eggs that were newly laid, seeing first hand why their project was so important.

An ongoing monitoring program of the swallow nest boxes is in place. Data was collected in 2008 for 75 swallow boxes that were visited six times throughout the season, thanks to the efforts of Pat Huet, a volunteer, and Carla Haegele, the stewardship and communication manager at the CVWMA. The nest records were submitted to the

**Figure 83**. A group of male students from J L Crowe Secondary School in Trail in wood-working shop building swallow nest boxes. Trail, BC. 2 May 2008 (Mike Vanness).

**Figure 85.** Students from J L Crowe Secondary School in Trail with Carla Haegele giving instructions on how to erect the nest boxes. Corn Creek Marsh, BC. 27 May 2008 (Mike Vanness).

**Figure 84.** A group of female students from J L Crowe Secondary School in Trail in wood-working shop building swallow nest boxes. Trail, BC. 21 April 2008 (Mike Vanness).

**Figure 86.** After construction in the woodworking shop, and instructions in the field, the nest boxes are finally being set out. Corn Creek Marsh, BC. 27 May 2008. (Mike Vanness).

BC Nest Record Scheme and will continue to be submitted in the future.

Nest boxes are also built to attract waterfowl, birds of prey, chickadees, nuthatches, creepers, bluebirds, but other wildlife species also take advantage and benefit from these cozy structures. In 2008, the following 21 species of birds and mammals were reported using nest boxes around the province; **Northern Flying Squirrel**, **Deer Mouse**, **Wood Duck**, **Barrow's Goldeneye**, **Bufflehead**, **American Kestrel**, **Western Screech-Owl**, **Northern Saw-whet Owl**, **Northern Flicker**, **Purple Martin**, **Tree Swallow** (Figure 87), **Violet-green Swallow**, **Black-capped Chickadee**, **Chestnut-backed Chickadee**, **Mountain Chickadee**, **Red-breasted Nuthatch**, **House Wren**, **Western Bluebird**, **Mountain Bluebird**, **European Starling**, and **House Sparrow.**

**Ralph Gerein** reported: "of the 33 boxes that we installed, we had 26 successful nestings, a total of 137 eggs and 117 fledged, a success rate of about 85%".

We are grateful to the following enthusiastic and committed individuals who visit "their" nest boxes to record breeding activity and take the time to transfer this valuable information to nest cards or summary sheets: **Kris Andrews** (Williams Lake), **Vicky** and **Lloyd Atkins** (north Okanagan valley), **Beverly**

**Figure 87.** Many nest boxes set out each year for Mountain Bluebirds are utilized by Tree Swallows. Mackenzie, BC. 8 June 2008 (John and Vi Lambie).

**Butcher** (Cariboo), **Alex Coffey**, **Gloria** and **Orie Kolenchuk** and **Marv** and **Lorna Schley** (Dragon Lake), **Cyril Colonel** (Wynndel), **Vic Cousineau** (Lister), **Ralph** and **Elsie Gerein** (Creston flats), **Carla Haegele** and **Pat Huet** (Creston Valley Wildlife Management Area), **Willie Haras** (Dewdrop), **Pat Huet** (Canyon), **Vi** and **John Lambie** (Mackenzie; Figure 88), **Ed McMackin** (Arrow Creek), **Dirk Pidcock** (Argenta and Duncan River valley), **Sandy Proulx** (Cariboo), **Lorraine Scott** and **Sharon Laughlin** (Creston), and **Rita Wege** (Shoreacres).

**Figure 88.** Five well-feathered Mountain Bluebird nestlings in nest box near MacKenzie, BC. 24 June 2008 (John and Vi Lambie).

Many others examined the contents of nest boxes as they travelled around the province (Figure 89). Good coverage for incidental checks was received for the following areas: Douglas Lake, Kamloops, Kootenays, Okanagan valley, Princeton, and Quesnel.

**Figure 89.** Fred Bunnell checking a nest box for contents late in the nesting season. Dog Creek, BC. 28 July 2008 (R. Wayne Campbell).

European Paper Wasp and Nest Boxes in British Columbia

The European paper wasp (Figure 90), neither a yellowjacket or hornet, was introduced into North America near Boston in the 1970s and has now spread its range to include southern British Columbia (see Borkent, C.J. and R.A. Cannings. 2004. *Polistes dominulus* (Christ) (Hymenoptera: Vespidae: Polistinae) in British Columbia: first collection records of an invasive European paper wasp in Canada. Journal of the Entomological Society of British Columbia 101:149-150; available on-line at www.sfu.ca/biology/esbc/Journal/Jounral2004/pp_149-150.pdf). The species is a social insect that builds a paper nest each spring that holds many individuals in small colonies. Some of these nests are built inside nest boxes and have become a concern to many people monitoring nest boxes. The wasp can sting but the concern is the impact it may have on nesting swallows and bluebirds.

BCNRS Participant Observations in 2008

**Dirk Pidcock** writes from Kaslo where he has been monitoring nest boxes in the Argenta/Duncan River valley for the past 17 years: "*Greetings all ... these warm days of fall beckoned me to complete work on nest boxes for this year. In the past three days I have managed to cover just over 50 boxes, the majority being up the lake. Part of me dreaded this task because of the long, cold spring. I expected to find mostly abandoned Tree Swallow nests. This fear proved to be the case in the boxes south of Kaslo. The majority were non-productive*

**Figure 90**. The European paper wasp, native to Europe, Asia, and North Africa has been introduced into the northeastern United States in the 1970s and reached British Columbia in 2003.

*with abandoned eggs or tiny chicks. But up the lake it was a more positive experience. There, the majority of Tree Swallow boxes were successful! Three boxes were lost to bears and one, only one, contained a Mountain Bluebird nest, with one dead chick. Evidence suggested that others fledged. The biggest challenge of the blitz was dealing with yellow-jackets. Some eight boxes which contained active yellow-jacket nests were not used. Somehow I managed to remove all the intruders without being stung! In the next few days I will be preparing and submitting nest cards".*

Dirk wasn't the only one dealing with wasps this season as **Lorraine Scott** and **Sharon Laughlin** discovered their nests in 22 out of 31 boxes at the onset of the nesting season.

**Pat Huet** wrote: "*Wasps are a problem for sure. The first few years I had nest boxes, I didn't see any wasps in them, except for empty ones late in the summer. I have problems wearing gloves and so don't put my hands in the boxes. If a box is opened the wasps come flying out and gloves won't help a wasp in the face. I usually carry the Epi-pen, but not always. My technique is to go out first thing in the morning when it's cold. If the temp is below about 10C, the wasps are sluggish, and if it is below 5C, you are pretty safe, that is when I use a pry bar (and gloves) to get them out of the box. I just didn't look in the boxes during the day, and often had to wait a few days in late spring to check the boxes. Some types of wasp are very aggressive (I think we have maybe 6-8 species here, can't remember). The ones that build those flat nests are the most common and least aggressive, in my experience."*

Wasps are a relatively new and ongoing problem for nest box monitors, especially those with allergies to stinging insects and so for this report we started asking questions.

**Jim Ginns** kindly provided information on the identity of this wasp: "*We had them identified by an entomologist at the Summerland Agriculture Research Station. He was not in favor of encouraging them, despite their beneficial aphid control, because they tend to take-over from the native paper wasps." For the past few years we have had a few nest boxes invaded by European Paper Wasps* (see www.livingwithbugs.com) *but they are not a big problem. I usually leave them alone, especially if the wasp nest is rather inaccessible on the ceiling of the nest box, but remove nests if they are easy to get at!"*

**Laurie Rockwell** commented: "*they try to set up a hive and when I arrive in the early morning for most of the breeding time they are sluggish and I merely pluck them up by the raised wings, in my fingers, and put them outside. I scrape the hive off with a putty knife that I use to clean out boxes. After enough interruptions they tend to give up. I have not found them active in a box when the bluebirds are nesting." Laurie was instrumental in* net-working in search of more information and what impact the wasps may be having on nesting birds. He contacted **Sherry Linn**, President of the Interior Bluebird Trail and she had this to say*:"I know some people have had problems with wasps in the past though I didn't see too many comments on it in the 2008 data returns. There have been some articles (probably in the North American Bluebird Society quarterly Journal). As you have stated, some people destroy the wasp nests while others do not. There are even hints of how to prevent or deter them from starting a nest ... some people rub ivory bar soap on the inside of the roof!"*

As well Laurie contacted **Tom Lowery**, entomologist at Pacific Agri-Foods Canada (Summerland Research Station) who first told him about this wasp: "*In answer to your question, the introduced European paper wasp, Polistes dominulus, does appear to be displacing two native species, P. aurifer, the golden paper wasp, and P. fuscatus, the northern paper wasp. They all build simple exposed paper nests with a single layer of cells that they hang in a sheltered location. P. dominulus has the upper hand on the native species because it begins nest building sooner in the year and several queens will co-operate on construction of a single nest. P. dominulus was very common, including large numbers of nests in bird boxes, the first few years after arrival, but their numbers appear to be declining somewhat. We come into contact with the new species a great deal more, not*

*only because it is so common, but also because it prefers to nest around buildings and in nest boxes and other sheltered spots. Fortunately, it is much less aggressive and less apt to sting (but the sting hurts just as much!). You will occasionally find yellow jackets, the most common being the western yellow jacket, Vespula pennsylvanica, in nest boxes, but they often nest in rodent holes or other more secure places that afford better protection from the larger bald faced hornet. The latter species builds an enclosed nest that hangs exposed high up in trees."*

**Sandy Proulx** who monitors 400 nest boxes in the Cariboo-Chilcotin was certainly aware of this wasp but found few of their nests on his nest box trails.

Life History of the European Paper Wasp

We are grateful for permission to reproduce the following life history of the European paper wasp from www.livingwithbugs.com.

**Paper wasps** are closely related to yellowjacket wasps. You can tell them apart because paper wasps generally have significantly **longer hind legs** which hang below the abdomen in flight. Paper wasps also make smaller nests with an open, **cells exposed** architecture (Figure 91).

**Figure 91.** The typical nest of the European paper wasp, when exposed, takes on an architectural pattern.

Paper wasps normally go about their business pretty much unnoticed. Most native (US) species make relatively small nests and locate them in out-of-the-way places. They are not aggressive so there is little threat of swarming. Paper wasps are excellent **predators** and unlike some scavenger yellowjackets are **not** interested in our picnic food.

European paper wasps are not typical paper wasps

The **European paper wasp** is not native to North America. It arrived in the New World sometime before 1981 appearing first in Massachusetts and has since spread westward now occurring as far west as California, Oregon and Washington. Its native range is Europe to China and is the most common paper wasp in Western Europe.

This new wasp makes a *larger nest* than our native paper wasp species and places these nests in more accessible places. Whereas native paper wasps build nests in high, out-of-the-way sites such as along the eves of a roof, European paper wasps build nests closer to the ground in areas where we might accidentally make contact. Numerous, hidden nests can increase the likelihood of unpleasant encounters between wasps and gardeners. Finally, this wasp is such a **successful colonizer** that it sometimes displaces native paper wasps.

Because it is not native, the European paper wasp has experienced *"ecological release"* typical of other invader species that arrive without their own native predators and parasites. This has resulted in a rapid geographical spread and large populations where this wasp occurs.

Identification & misidentification

Most people, even some entomologists, misidentify this paper wasp (*Polistes spp.*) as a yellowjacket (*Vespula spp.*). It is a little larger than a typical yellowjacket but smaller than our native paper wasps and has a very similar yellow over black color pattern. European paper wasp workers are *not as aggressive* as yellowjacket workers but more aggressive than other paper wasps.

Life history of paper wasps

The life cycle of European paper wasp is typical of other paper wasps and yellowjackets. Queens emerge from overwintering sites in spring to start a new nest. Once underway, queens remain at the nest to lay eggs while workers, sterile females, provision and build the nest (Figure 92).

European paper wasps **start nest building a little earlier in spring** than our native species which may account, in part, for its relative success. Nests grow throughout the summer, a batch of males, drones, is produced in the fall. Drones mate with newly produced queens. These new queens are the only members of the colony that survive the winter. Nests normally are not reused the following spring.

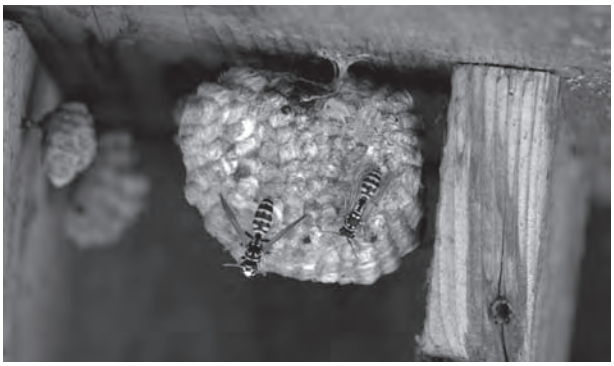


**Figure 92.** The European paper wasp prefers to build its paper nest, that contains a small colony of individuals, in dark cavities, like a nest box.

Close encounters with paper wasp nests

These photos (see www.livingwithbugs.com) illustrate why you are more likely to have an "**unpleasant encounter**" with the European paper wasp than other paper wasp species. The relatively large nest has been built in an area where unsuspecting hands might go (far left). Other paper wasp species tend to build smaller nests in more out-of-the-way places, less likely to be encountered by accident.

While this wasp certainly will sting it is **unlikely to swarm** thus reducing the overall threat compared to their more aggressive yellowjacket cousins.

*Control of paper wasps*

Paper wasps are not attracted to artificial wasp traps nor will poison baits likely work because paper wasps require live prey. The only control now is to destroy individual nests as you encounter them with a wasp and hornet spray. Be aware, however, that this wasp is a **excellent predator** of many pest insects so **should be left alone** if at all possible.

So, while they may be annoying at times they are probably doing your garden and landscape a lot of good! In some areas, however, this wasp may be having a negative impact on rare or endangered butterflies. *Eventually, this invader species will be "found" by its own set of predators and parasites and will then begin to decline in number.*

Suggested Solutions to Discourage Wasps in Nest Boxes

In trying to find information to share with BCNRS participants we could not determine direct impacts the European paper wasp may have on birds using nest boxes and their offspring. We have extracted from the internet the following "potential" remedies used by nest box monitors in the United States.

(1) *rub soap on the ceilings and the insides of the the boxes where the try to build their nests. They do not like this. In early spring I will also leave to box open for a few days to encourage them not to return. All my monitors have bits of bars of Pils Napha (spelling of this?) soap. One bar should last you a long time. But I understand Ivory works as well. The Western Bluebird will not nest in boxes with wasps.*

*I must say that I am now quite brave about smashing them with a gloved hand, and my palette knife etc when I find them in my nest boxes on my trail. I cover the drainage holes with one gloved hand to keep them from escaping! I kill the ones that fall or fly to the ground as well. They seem a little listless in the mornings and this helps with eradication efforts. I have found them in boxes with nestlings. Monitor, monitor, monitor ...*

(2) *When there are just a few wasps they can be smashed with a 1 X 2 X 2 ft. club quiet easily. Best and easiest to do it in the mornings when they are still chilled down a bit.*

(3) *I have approx 300 nest boxes and the best way that I've found to handle wasps is with a bar of Ivory Soap. Usually the wasp will try to build inside against the roof. Rub the bar of Ivory against the roof creating a barrier that the nest will not adhere to - Peterson boxes seem to attract them up under the box and I use the same method. The nice thing is that it doesn't melt or create a mess, the box stays wasp free and it is safe for our feathered friends. An added note, this also works well on window shutters that seem to attract wasps.*

(4) *To control wasps and bees, first remove their nests, then rub bar soap on the box ceiling. This prevents them from attaching their nest to the wood. Some people have used aluminum foil with success, stapled into the roof.*

(5) *I simply use my hive tool, a flat piece of steel about 10" long with a sharp putty-knife-shaped blade on one flared end, and a scraper on the other. The blade squashes the wasps and the combs, and the scraper scrapes everything out. It just takes seconds, but for obvious reasons one has to be quick and deft. This hive tool is a very useful multi-purpose implement for the Bluebirder. It cleans out wasps, ants, earwigs, spiders, excrement, beetles, old nests, various corpses, - you name it. - in short order.*

(6) *some nest box monitors installed a smaller wooden box in the area to encourage the wasps to nest there rather then in the bird nest box.*

## Request for Information

We would like to include more information on the invasive **European paper wasp** in the **2009 annual report**. Could nest box monitors, and others, please record the insect's occurrence and report back with details of where, when, and other significant observations. We then may be able to produce a distribution map showing the range in British Columbia.

We also want to include a summary of nest box trails in British Columbia in the 2009 report. Could nest box monitors send us a photo of themselves in the field monitoring their nest box trails, the number of years they have been monitoring, and a few lines on memorable experiences or highlights.

Thank you.

## RARE AND SENSITIVE SPECIES

We are receiving more requests for information on "Red" and "Blue" listed species than ever before. Part of the demand is for environmental impact assessments as they relate to new federal and provincial legislation. Each request is carefully considered with the welfare of the species in question. We are also sensitive to the demands of photographers but rarely is specific information distributed without knowing full details of the experience of the photographer and the purpose in obtaining the images.

In addition, public information in files of some provincial and federal government agencies, and non-profit groups, is not being released for their sensitivity to disturbance and other associated human activities.

A few species of interest in 2008 included **American Bittern** (nest sites), **Arctic Tern** (nest sites), **Boreal Owl**, **Broad-winged Hawk** (nest sites), **Common Nighthawk** (nest sites on southern Vancouver Island), **Forster's Tern** (nest sites), **Gray Jay** (nest sites), **Great Gray Owl** (nest sites), **LeConte's Sparrow** (nest sites near Fort St. John), **Nelson's Sharp-tailed Sparrow** (nest sites near Dawson Creek), **Northern Hawk Owl** (nest sites), **Northern Pygmy-Owl**, **Pacific Water Shrew**, **Painted Turtle** (Sunshine Coast), **Peregrine Falcon** (nest site in the Gulf Islands), **Red-legged Frog, Sea Otter**, **Short-eared Owl** (nest sites), **Trumpeter Swan** (nest sites; Figure 93),**Turkey Vulture** (nest sites on Gulf Islands),**Vaux's Swift** (roosting sites), **Western Rattlesnake** (den sites), **Western Screech-Owl** (location of nest boxes), **Western Toad** (spawning locations), and **Yellow Rail**.

**Figure 93.** Even though the Trumpeter Swan is increasing its breeding range in the province each year it is the policy of BCNRS to not release specific locations unless a detailed account, in writing, is submitted stating the purpose of the visit. Twin Lakes, BC. 18 June 1999 (R. Wayne Campbell).

# FIELD TIPS AND TECHNIQUES

## Monitoring Cavity-nesting Birds

Each nesting season the majority of nest record cards are submitted for open nesting species of birds, broods, and recently fledged young. One area of the BCNRS we would like to strengthen is the monitoring and recording of cavity nesting species. This is more challenging as we cannot "see" into the nests that are created in this environment. Many of these cavity nesting species especially Mountain and Western bluebird and Tree and Violet-green swallows, will take readily to nest boxes and much information is submitted each year for these species. Less commonly, species like American Kestrel, Northern Flicker, Northern-Saw-whet Owl, Boreal Owl, Black-capped Chickadee, and White-breasted Nuthatch will utilize nest boxes.

Cavity-nesting species are typically divided into two categories: *primary* and *secondary* (Figure 94) nesters. Primary cavity nesting species are those that excavate their own cavity to use for nesting during the breeding season, often excavating a new hole each year. Groups that fall into this category are the woodpeckers, chickadees, and nuthatches. The secondary cavity nesting species are those that utilize existing cavities both natural and those excavated by other birds. Groups that fall into this category are some species of ducks, small owls, three falcon species, bluebirds, two species of swallows, some species of wrens and the introduced European Starling and House Sparrow.

For all cavity-nesting species please record: tree species, live versus dead tree, height of cavity from ground, GPS location if you have this field tool, approximate diameter of hole, diameter of tree at breast height (measurement of tree while standing at it; Figure 95), and all activity associated with nesting including feeding by parents and volume of noise of nestlings. Some of these activities will include: adult flying in and out of cavity, male delivering food to mate, nesting material being carried into cavity, downy feathers at entrance to cavity, food delivery to nestlings, removal of fecal sacs, nestlings looking out of cavity, and calling.

<u>Ducks</u>

Cavity-nesting duck species such as **Wood Duck** (Figure 96), **Common Goldeneye**, **Barrow's Goldeneye**, **Common Merganser**, **Hooded Merganser**, and **Bufflehead** are the most difficult to monitor. Not many nest-finders observe the

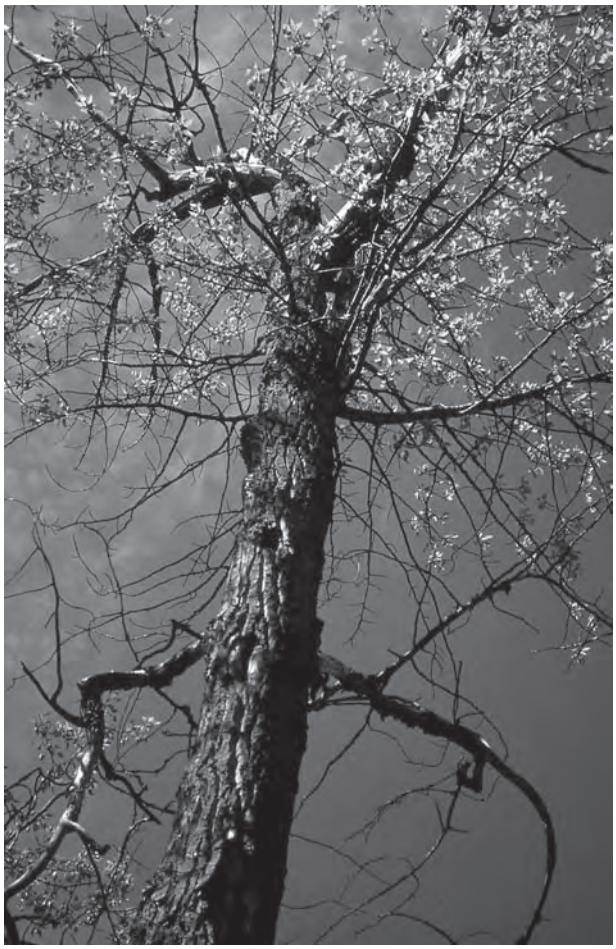


**Figure 94.** The Barrow's Goldeneye is a secondary cavity-nesting species that relies on primary excavators, like woodpeckers, to provide a nest site. The species also uses nest boxes. Tunkwa Lake, BC. 30 June 2008 (R. Wayne Campbell).

**Figure 95.** A female Barrow's Goldeneye was observed flying into a hole, 10.6 m above ground, in a live black cottonwood tree (dbh 28 cm). on the shore of Bridge Lake, BC. 7 June 1996 (R.Wayne Campbell).

**Figure 96**. A female Wood Duck at cavity entrance of an old woodpecker hole excavated in a tall, live black cottonwood tree (27 m in height; cavity 7.6 m from ground; and dbh 56 cm). Creston, BC. 6 May 2008 (Linda M. Van Damme).

coming and going of these ducks from the nesting cavity and even fewer are present to witness the brood of ducklings jumping from the cavity. Most of our information in the BCNRS is based on broods recorded with the females once the family has departed from the nesting cavity.

Female ducks pull the down from their breasts to line the cavity and to lay their eggs on. As the female enters or exits the cavity, tiny downy feathers are caught on the rough edges of the opening (Figure 97). This is a good clue for occupancy.

Incubation times, taken from *The Birds of British Columbia*, for combined species averages 25-37 days and fledgling time averages 56-70 days so it gives an idea of approximate times to visit.

Owls

The smaller owls, such as **Flammulated**, **Northern-Saw-whet**, **Boreal** (Figure 98), **Northern Pygmy**, and **Western Screech** choose natural crevices or old woodpecker cavities to nest in. Nest finders do locate owl nest sites while afield and each season we have a handful of nest cards submitted for cavity-nesting owls. Most people discover the owls, however, in nest boxes they have erected or once they have fledged from the cavity.

Due to the nocturnal nature of most of these owls, it takes a concerted effort to locate active nest sites. It is helpful to be familiar with the breeding cycle of each species and to know their habitat preferences. With the exception of the Flammulated Owl, which does not arrive back in the province until late May, you can go out at night to listen for the other species of owls as the males will start calling

**Figure 97**. Examining the entrance hole in a natural cavity, or nest box, is a good sign that it is being used by a duck. Near Riske Creek, BC. 3 July 2002 (R. Wayne Campbell).

while on territory from January to April, depending on where you reside in the province. Knowing that an owl is on territory is the first step in trying to locate a nest site. During the day you can re-visit the area, getting property owners permission if it is required, and search for potential nest sites of cavities in trees.

Scratching the tree trunk with a stick or lightly tapping it (Figure 99), an owl may appear at the cavity entrance (Figure 100). Owls incubate their eggs for approximately 22-28 days so plan to re-visit the site later to see if the cavity is still occupied. In time you may spot the owlets at the cavity entrance (Figure 101). Although most owls lay between 3-5 eggs, usually only one or two nestlings can peer out of the hole at one time. Record the development of the owlets and approximate size and note date when last observed. Owls fledge within 22-32 days after hatching.

The summary below gives average periods of incubation and fledging for British Columbia (extracted from *The Birds of British Columbia*).

| Species | Average Incubation Period (days) | Average Fledging Period (days) |
|---|---|---|
| Flammulated Owl | 22 | 22 |
| Western Screech-Owl | 26 | 35-42 |
| Northern Pygmy-Owl | 28 | 29-32 |
| Boreal Owl | 27 | unknown |
| Northern Saw-whet Owl | 27 | 27-34 |

**Figure 98.** A Boreal Owl pokes its head out from a nest cavity, which contained four eggs, during a spring snowstorm. 18 April 1995. Sibbald Creek, AB (Michael I. Preston).

A sample of a completed nest card for the Northern Saw-whet Owl with pertinent information useful for data analysis is shown in Figure 102.

Falcons

The **American Kestrel** is the only tree cavity nesting falcon which relies on natural and excavated cavities although occasionally Peregrine Falcons and Merlins use them. During the courtship period there can be a lot of noise and activity in the general vicinity of the nest site then things quiet down once the female settles into incubating eggs for approximately 29-30 days. If you have located the nesting cavity and want to know if the site is still active during that month, the male will be bringing food to his mate (Figure 103) and will call out to her; she exits the cavity, grabbing the prey item and may eat it on a branch near the nest or fly back inside to feed. When not hunting the male often perches in the vicinity of the nest tree. Once there are nestlings

**Figure 99.** Rick Howie tapping a trembling aspen tree with several cavities hoping a small owl might appear at one of them. Near Kamloops, BC. 27 May 1995 (R. Wayne Campbell).

to be fed, the activity increases with the male, then both parents bringing food to the hungry youngsters. Usually only one or two nestlings can look out the cavity at the same time (Figure 104).

Nestlings fledge approximately 30 days after hatching.

**Figure 100.** Northern Saw-whet Owl adult peering out of old woodpecker cavity. A later vist later may confirm nesting. Creston, BC. 21 April 2007 (Linda M. Van Damme).

**Figure 101**. Two Northern saw-whet Owl nestlings peering out of cavity on 13 May 2006, almost a month after the occupied cavity was discovered. Note size difference between the two nestlings. Creston, BC. 13 May 2006 (Marcia Long).

**British Columbia Nest Record Scheme**

Species: NSWO Map Grid: 082 F01 Name of Observer: Marcia Long

Locality: (place name and specific location) Creston valley

Elevation: 620 m

Habitat: (surrounding vegetation) Coniferous forest along road edge with two deciduous snags

Cowbird Parasitism: Yes / (No)

NUMBER OF EGGS OR YOUNG per VISIT

| Day | Month | Year | Eggs | Yng. | REMARKS (building, incubating, eggs cold, just hatched, fledged, yng. dead, etc) |
|---|---|---|---|---|---|
| 16 | 04 | 06 | | | lightly tapped tree NSWO peered out |
| 21 | 04 | 06 | | | lightly tapped tree NSWO peered out; belly feathers ruffled as though incubating or brooding |
| 2 | 05 | 06 | | | AD. looking out cavity |
| 12 | 05 | 06 | | 1 | poking head out brown |
| 13 | 05 | 06 | | 2 | appeared at opening feathered 1 larger than other (did not tap on tree) was there 3 hr. |

If more than 7 visits are paid to a single nest use another card for further visits

NEST DESCRIPTION

General Location: Old woodpecker cavity in 9.7 m tall trembling aspen snag Dbh: 48 cm Materials:

Position:

Height above ground/cliff-base/water 7 m

UTM Zone 11 UTM Easting: 538835 UTM Northing: 5427586

**Figure 102.** Sample nest card completed for a Northern Saw-whet Owl nest found with nestlings in the Creston valley by Marcia Long in 2006.

**Figure 103.** Female American Kestrel looking out of nesting cavity of broken, dead, trembling aspen snag when male gave food delivery call. Prey delivery consisted of grasshoppers and small rodents. Creston, BC. 7 June 2008 (Marcia Long).

**Figure 104.** Nestling American Kestrel, close to fledging, peering out cavity near top of 6 m tall dead black cottonwood tree, 5.9 m from ground with a dbh of 43 cm. Creston, BC. 26 June 2008 (Linda M. Van Damme).

Woodpeckers

Although some woodpeckers will re-use a nesting cavity many excavate a new hole each season. With all the excavating activity of wood chipping and carrying off a billful of wood chips, this is an ideal time to locate nest sites. If a woodpecker is busy excavating on the first visit, then more specific information relating to the tree can be gathered at a later time once they are settled in.

When out and about, a nest finder may spot a cavity but in the absence of an adult, wonder if the site is occupied. One sign to look for is "*tail rubbing*" a worn patch on the bark (usually smooth) below the hole where the tail feathers rubbed during the excavation process (Figure 105). Sometimes the species of woodpecker can be identified by its nest hole (Figure 106).

You can easily document the progress or stages of the excavations by observing if the woodpecker is on the outside of the tree, can insert its head inside the hole, insert its upper body inside the hole, or can enter the cavity and exit head first or backwards.

During incubation, there is reduced activity but once the young hatch, feeding trips, and carrying away fecal sacs (Figure 107) will commence. As young woodpeckers grow into larger nestlings a loud "buzzing" sound can be heard from the cavity, sometimes from quite a distance. It's one sure sign of hatching success but be cautious in the area as Black Bears are also attracted to this sound that is similar to an active bee hive. Eventually at least one young will be visible at the cavity entrance and approximate fledging times can be recorded.

**Figure 105.** A well worn spot directly below a hole in a smooth-barked tree, such as a trembling aspen, is a sure sign that the tail of a woodpecker has caused it and the site is being used for nesting. Near Houston, BC. 23 June 1997 (R. Wayne Campbell).

**Figure 106.** The shape of some cavities, with a little experience, can lead to the identification of a woodpecker species.The holes of sapsuckers are perfectly round (near Oliver, BC. 15 May 1996) (a) while those of a Pileated Woodpecker are oval (Wilgress Lake, BC. 26 May 1980) (b) in shape. (Mark Nyhof ).

**Figure 107**. Most cavity-nesting birds carry away fecal sacs from the nest to keep it clean. Sapsucker nestlings, however, do not form fecal sacs, but excrete watery fluids which are absorbed by the sawdust in the cavity and removed by the parents as a billful of "mushy feces". This behaviour also indicates nestlings are present. Creston, BC. 19 June 2008 (Sharon Laughlin).

Documenting disturbances, threats, and mortality at cavity-nesting sites is also important to record, either in writing or by photograph.

Incubation times for all species combined averages 12-18 days and fledging averages 21-28 days.

Swallows

**Tree** and **Violet-green swallows** are cavity nesting birds that will easily accept nesting boxes, but many more choose woodpecker or natural tree cavities (Figure 108). The first clue an active nest finder gets is seeing a male flying near a cavity, showing it to a female who may then enter to check it out. One might also see adults carrying nesting material into the cavity, grasses/weed stems first, followed by feathers to line the nest. Once the eggs hatch, you might see an adult leaving the cavity with a "*fecal sac*" and so at least one nestling is present. It is difficult to really know what's going on in the cavity until feathered nestlings appear at the

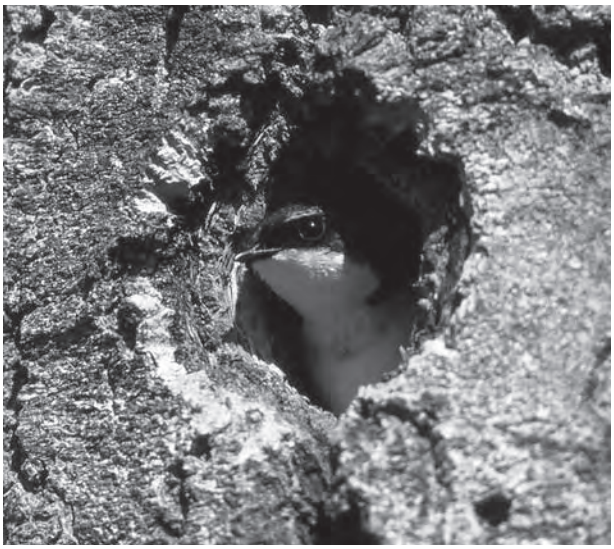


**Figure 108**. Adult male Tree Swallow peering out of cavity entrance in a live, but dying, trembling aspen. Sunset Lake, BC. 22 June 1997 (R. Wayne Campbell).

**Figure 109.** Spotting an adult Chestnut-backed Chickadee with food in its bill and following it in stages will eventually lead to its nest. Victoria, BC. 16 May 1998 (R. Wayne Campbell).

cavity entrance to be fed; the young by this time are usually close to fledging. Once fledged the young may perch in the vicinity of the nest tree waiting to be fed by the adults, so this is another opportunity to record number of young.

Incubation times for both species combined averages 14-16 days and fledging averages 20 days for the Tree Swallow and 25 days for the Violet-green Swallow, again a guideline for timing of visits.

Chickadees and Nuthatches

All four species of chickadees, and three species of nuthatches, are cavity nesters. Sometimes, both chickadees and nuthatches will use an existing cavity rather then excavate their own. They choose trees with a fair degree of rot in them so their tiny bills can do the excavating. It takes many trips for these small birds to excavate a cavity deep enough for their nests, so both adults will take turns chipping and carrying away the wood chips. Then comes nest building, so many trips to carry materials as it takes up to two weeks to complete a nest. Activity quiets once the eggs are layed and again it is about timing to witness the transport of food (Figure 109) and removal of fecal sacs. Occasionally the young, when ready to fledge, will peer out of the cavity.

One way to identify a Red-breasted Nuthatch nest is to look for the sap around the cavity entrance which has been daubed on by its occupant. The purpose of this behaviour is still being debated by ornithologists.

Incubation time for chickadees combined averages 11-15 days and fledgling averages 16-21 days. Incubation time for three species of nuthatches combined averages 12-16 days and fledgling averages 13-21 days.

A completed nest card for the Red-breasted Nuthatch with a sample of pertinent information that could be recorded during a visit is shown in Figure 110.

Wrens

House Wrens and Bewick's Wrens (Figure 111) select tree cavities for nesting as well as nest boxes. The House Wren male makes many trips to fill a cavity with small twigs which often stick out of the hole. He may fill up to four cavities in an effort to attract a female who will select one site and add the lining to the nest.

Incubation times combined for both species average 14-16 days and fledging times average 14-22 days.

European Starling

Starlings readily use any opening in a tree trunk (Figure 112), or for that matter almost anywhere they can find security. If you live in an area where deciduous trees, especially black cottonwoods and trembling aspens are abundant, you will easily find their nest sites. It is best to watch these birds from a distance with binoculars as the adults can be very wary and will not enter the nest site if they suspect an intruder.

The greatest activity, like many other cavity

**British Columbia Nest Record Scheme**

Species: RBNU Map Grid: 082F02 Name of Observer: Linda M. Van Damme

Locality: (place name and specific location) Creston

Elevation: 620 m

Habitat: (surrounding vegetation) Mixed coniferous forest

Cowbird Parasitism: Yes / (No)

NUMBER OF EGGS OR YOUNG per VISIT

| Day | Month | Year | Eggs | Yng. | REMARKS (building, incubating, eggs cold, just hatched, fledged, yng. dead, etc) |
|---|---|---|---|---|---|
| 21 | 04 | 08 | | | alert male excavating cavity in hemlock at edge of forest. Hole deep enough so only tail stuck out |
| 24 | 04 | 08 | | | no activity noted |
| 26 | 04 | 08 | | | ♂ poking head out + dropping woodchips out. Can hear sounds of excavating in cavity |
| 09 | 05 | 08 | | | no activity |
| 04 | 06 | 08 | | 1+ | AD carrying small insects in bill, entering cavity 3x within 7 minutes |

If more than 7 visits are paid to a single nest use another card for further visits

NEST DESCRIPTION

General Location: excavated cavity in Materials:

Position: 9m tall hemlock snag dbh 27cm. - cavity 15cm. from top

Height above ground/cliff-base/water 8.9 m

UTM Zone 11 UTM Easting: 597585 UTM Northing: 5437776

**Figure 110.** Sample nest card completed for a Red-breasted Nuthatch nest found in the Creston valley by Linda M. Van Damme in 2008.

**Figure 111.** In British Columbia, the Bewick's Wren prefers to nest in natural cavities and crevices. Victoria, BC. 23 April 1980 (Mark Nyhof).

nesting species takes place once the young have hatched. One sign to look for is "*whitewash"* (Figure 113) as nestlings "*squirt*" out the cavity and this excrement is visible at the cavity opening and around the trunk of the tree. Both parents make frequent trips to feed the nestlings and it is amazing how quickly insect food can be located. As the nestlings compete for food, up to three of them may be seen at the opening of the cavity and this is a good time to record their stage of development as some are sparsely feathered on the head or completely feathered. A nestling close to fledging has a mature look about it, and is brown in colour.

Incubation time averages 11-12 days and fledging time averages 18-21 days.

House Sparrow

Generally speaking House Sparrows tend to nest in urban and rural residential and farmland areas and will use any structure that allows access, so not necessarily a tree cavity. Their nests are a bulky structure which appear messily built. As common as sparrows are in some parts of the province, they are not a commonly reported nesting species. They readily take over nest boxes set out for other species and the majority of our records come from nest boxes or fledged young being fed. The same documentation applies to this species as the ones described above.

Incubation time averages 10-14 days and fledging time averages 14-15 days.

**Figure 112**. Three nestling European Starlings being fed at nest entrance in a natural cavity in a mature black cottonwood tree. Creston, BC. 16 May 2006 (Linda M. Van Damme).

**Figure 113.** The amount of "whitewash" on the boards below a cavity in a barn suggests that European Starlings are nesting and probably into their second brood. Osoyoos, BC. 3 August 1998 (R. Wayne Campbell).

**Figure 114.** Adam Nyhof using a piece of wood found nearby as a prop to get closer to a cavity for inspection. Gang Ranch, BC. 6 July 2007 (Mark Nyhof).

**General Tips for Inspecting Cavity-nesting Birds**

(1) Re-visit known trees of species such as **Lewis's Woodpecker**, **Western Bluebird**, **Mountain Bluebird**, **European Starling**, and **Mountain Chickadee** that may return to the same cavity year after year. Some excavators that are known to return to the same tree and create a new cavity include **Pileated Woodpecker**, **Pygmy Nuthatch**, **Northern Flicker**, and **sapsuckers.**

(2) Gently scratching a tree trunk (see Figure 99) can imitate the sound of a small mammal climbing up the tree causing the occupant of the cavity to look out. If this doesn't work try lightly tapping with a stick. Banging on a tree will likely cause the occupant to stay hunkered down.

(3) If adult is entering a cavity with food, the nestlings are still small. If the adult is feeding from outside the cavity then nestlings are larger and if nestling sits at the cavity entrance it is easy to describe appearance as they are usually all feathered by this stage.

(4) If an adult enters the cavity with food, stays for a few moments, then exists without food, one can generally assume that small young are being fed. The size of the food items increase as does the amount carried in the bill as the young are growing bigger.

(5) If the adult enters the cavity with food and exits with a fecal sac then at least one nestling is

present. If the mate arrives moments later with food and exits with a fecal sac then two nestlings are present. Older nestlings become more vocal in calling for food, especially noted with woodpeckers.

(6) Avoid sticking your hand into a cavity as you might damage the eggs or be bitten by a squirrel or other rodent which might be living in there.

(7) Inspecting cavities just out of reach, using a flash lamp, can be challenging. One technique is to search for a log, or piece of wood, that can be used to elevate the person. Prop it up against the tree to get into a postion where the cavity can be safely checked (Figure 114). Obviously a ladder is best, or a climbable tree, but sometimes the "prop" technique may be the only way to examine the contents.

When checking tree cavities one might also come across the unexpected as other bird species may utilize these woodpecker created or natural hollows (see Figure 10).

## FROM THE SCIENTIFIC LITERATURE

A few technical and popular publications have appeared recently that may be of interest to participants.

***Predators of Dusky Canada Goose Goslings and the Effect of Transmitters on Gosling Survival***

In an effort to determine mortality in a declining population of **Dusky Canada Geese** (*Branta canadensis occidentalis*) in Alaska, four biologists attached radio transmitters to goslings to follow their movements. They learned that all mortality was due to predation, especially from Mink and Bald Eagles. They also cautioned using transmitters because of *their potential negative effects, particularly during the first few days after hatching*.

*Journal of Field Ornithology 79:399-407, 2008*

***Wildlife & Trees in British Columbia***

A useful reference book by biologists M. Fenger, T. Manning, J. Cooper, S. Guy and Bradford (Figure 115). Five sections include well illustrated topics on "Wildlife Trees & Their Dependent Species", Wildlife Trees & Ecosystem Management", Wildlife Trees in Urban & Rural Environments", "Knowing the Trees", and "Knowing the Wildlife".

*Lone Pine Publishing (Edmonton, Alberta)*, 2006

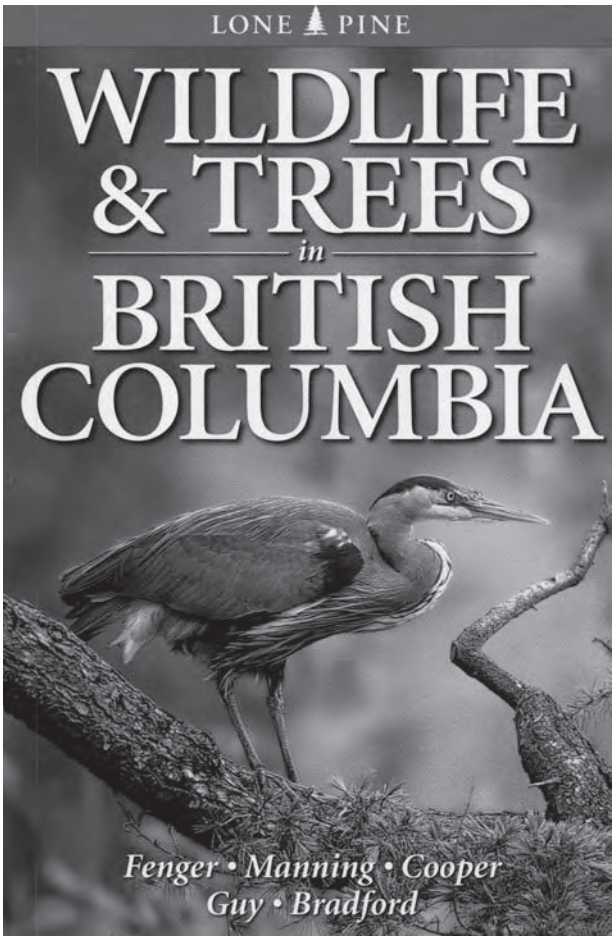



**Figure 115.** In their constant effort to make wildlife information available for public knowledge and conservation, *Lone Pine Publishing* produced an attractive field guide crammed with information on the importance of trees to wildlife in British Columbia.

***Artificial Nest Site Preferences of Black-capped Chickadees***

C. Cooper and D. Bonner compared the use of wooden nest boxes and polyvinyl chloride (PVC) tubes as artificial snags by **Black-capped Chickadees** in New York as well as the important of adding wood shavings as a nest substrate. Chickadees used wooden boxes with wood shavings more than unfilled boxes but PVC tubes were used the most. Also the PVC tubes were less likely to be occupied by mice and were no more likely to be usurped by House Wrens.

*Journal of Field Ornithology 79:193-197, 2008*

***Nest Monitoring Does Not Increase Nest Predation in Open-nesting Songbirds: Inference from Continuous Nest-survival Data***

A major concern of nest-finders, and researchers monitoring bird nests for productivity estimates, is disturbance by humans and activities that can lead predators to a nest. Ornithologist K. Weidinger studied the impact of nest monitoring on open-nesting passerines in the Czech Republic incorporating similar studies from North America and elsewhere. The careful research showed that *…predation on songbird nests is not increased by repeated observer visits, especially in situations where nest densities and background human disturbances are high*.

*Auk 125: 859-868, 2008*

***Distribution, Abundance, and Nest-site Characteristics of Black Swifts in the Southern Rocky Mountains of Colorado and New Mexico***

Determining the distribution, population size, and nesting locations for **Black Swifts** has been challenging for ornithologists because of the bird's aerial foraging habits and remote nesting sites. A team of biologists and conservationists set out to survey historical nest sites in Colorado and New Mexico and determine natural parameters that are uniform to all sites. Important at each nesting location was amount of available moss, shading of potential nest niches, topographic relief of surrounding terrain, and ease of aerial access to potential nest niches.

*Wilson Journal of Ornithology 120:331-338, 2008*

***Reproductive Biology of the Chestnut-backed Chickadee (Poecile rufescens) in Northwestern Oregon***

The nesting activities of the **Chestnut-backed Chickadee** (Figure 116) was studied over four years by P. Gaddis and C. Corkran in Oregon. Nest-building began in March with the first egg laid in early April and late nests were found into early July. Early clutches ranged in size from five to 10 eggs while later clutches were smaller. The incubation period averaged 13.8 days.

Predation by weasels was observed and chickadees were evicted from nest boxes by House Sparrows, House Wrens, and Bewick's Wrens.

*Northwestern Naturalist 89:152-163, 2008*

***Comparison of the Egg Flotation and Egg Candling Technique for Estimating the Incubation Day of Canada Goose Nests***

Early oologists developed a technique to "float" eggs in water before they were collected to know the stage of incubation and whether they could be easily cleared to retain the shell. Over the years biologists have been modifying the method to enhance their data-collecting.

Researchers M. Reiter and D. Anderson compared two techniques, "flotation" and "candling", to estimate incubation day in **Canada Goose** nests in Manitoba. They found that both methods *provided comparable and accurate estimates of incubation day and subsequent estimates of hatch date and nest success throughout the entire incubation period*.

Journal of Field Ornithology 79:429-437, 2008

**Figure 116.** Chestnut-backed Chickadee adding moss to nest. Natural cavity in a Garry Oak. Victoria, BC.14 April 1980. (Mark Nyhof).

## USE OF THE BRITISH COLUMBIA NEST RECORD SCHEME IN 2008

Each year the number of requests for information from the BCNRS increases as does the amount of volunteer time required to reference, extract, and/or copy the information. The biggest demand is from individuals preparing regional books and checklists of birds and wildlife consultants concerned about their reports on “Red-listed” and “Blue-listed” species.

The BCNRS files are also the major source of information for British Columbia breeding information that is being incorporated into species accounts in *The Birds of North America* series (Figure 117).

In the near future, the Biodiversity Centre for Wildlife Studies hopes to start adding monthly distribution maps for all bird species on their web page that, of course, will include a breeding component. In the meantime, the BCNRS is the only source referenced for “Featured Species” accounts published in *Wildlife Afield*.


The Birds of North America, No. 135, 1994

WILLIAM A. CALDER AND LORENE L. CALDER

Calliope Hummingbird

*Stellula calliope*

FRENCH: *Colibri calliope*
SPANISH: *Chupamirto refegulitas, Colibri gorgirrayado*

The Calliope Hummingbird is the smallest North American breeding bird. Defending its territory with a body mass about half that of North America's smallest passerine, the Bushtit (*Psaltriparus minimus*), or a third that of the smallest wood-warblers (Parulinae), the Calliope Hummingbird lives up to its heroic specific name, that of the muse of epic poetry. *Stellula* means "little star," a name especially suited to the male Calliope Hummingbird when he flashes the magenta rays of his beautiful and unique gorget.

The Calliope Hummingbird survives and breeds successfully in chilling northwestern montane environments, despite having the severe thermal disadvantage of a high ratio of surface exposure to heat-producing tissue mass. Flight speed, endurance on fuel reserves, and brain size (storage capacity) are some of the size-dependent characteristics that can limit migratory travel, so the Calliope Hummingbird is of special interest as the smallest long-distance avian migrant in the world. Seasonal distribution records tell us that some Calliope Hummingbirds must travel 9,000 km annually. Recent winter records in the southeastern United States suggest potential range extensions in this species, perhaps associated with environmental changes caused by humans.

The Birds of North America
Life Histories for the 21st Century

Breeding
Winter

Figure 1.
Distribution of Calliope Hummingbird in North America and Mexico. Individuals have also been found wintering in southern Arizona and along the Gulf Coast; see text for details.

Order APODIFORMES Family TROCHILIDAE

**Figure 117.** Most of the species accounts published in the major reference series *The Birds of North America* with birds breeding in British Columbia have referenced the British Columbia Nest Record Scheme for current information.

# APPENDICES

## Appendix 1. Plumage Development of Young Waterfowl

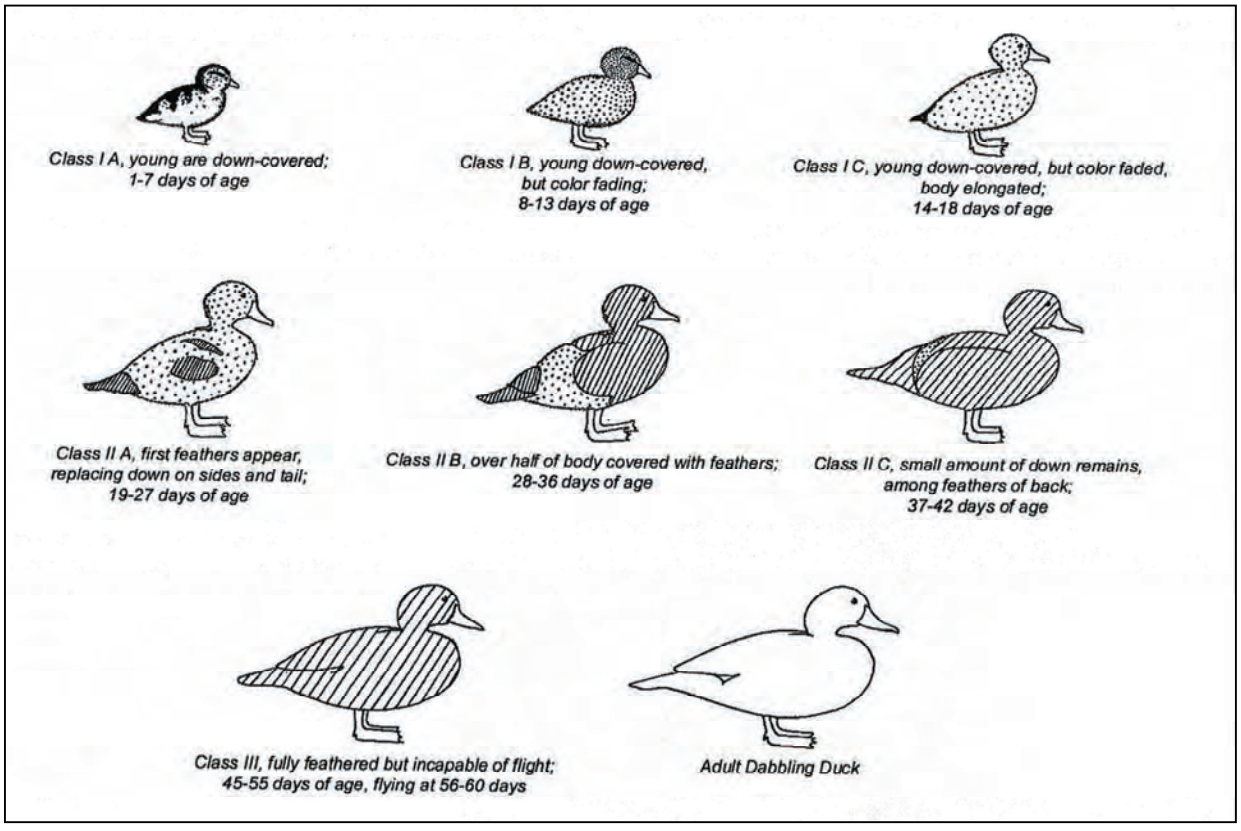
In the spring of 1997, the first B. C. Nest Record Scheme manual was issued by the WBT Wild Bird Trust of British Columbia, along with participating partners, as WBT Wildlife Report No. 1. An important omission in that manual was the inclusion of plumage changes of waterfowl developed by J. B. Gollop 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 begins 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 Frank 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.

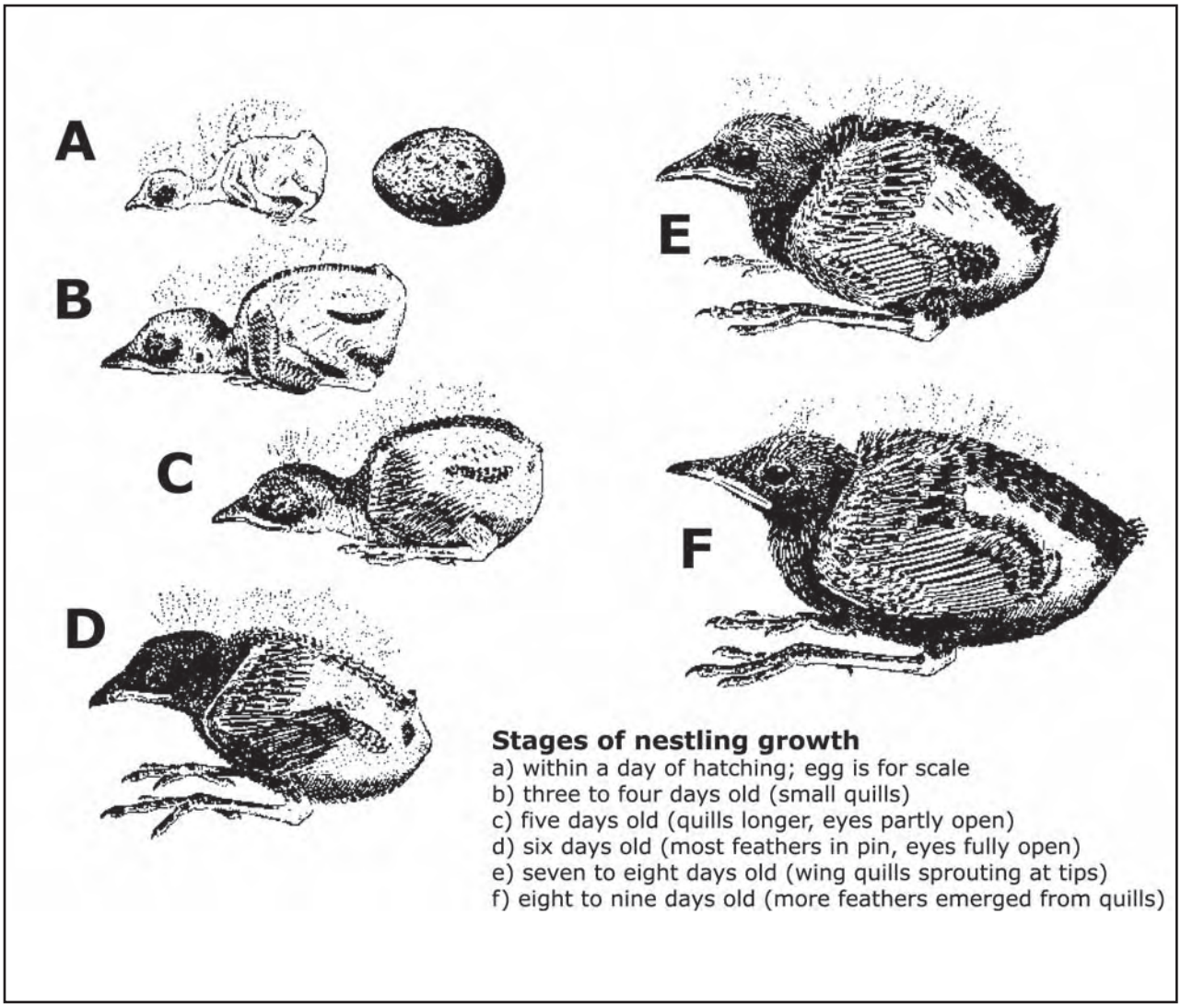
| Contents of nest when found or last visited | Next visit should be | Notes needed at next visit |
|---|---|---|
| Nest under construction | 2 - 4 days later, to determine laying schedule | No. of eggs, warm or cold; parent at nest or not |
| 1 - 3 eggs | 3 - 5 days later, to confirm completion of clutch | 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 (small 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)

## Appendix 4. Correct Terminology for Ages of Birds

There is some misunderstanding and confusion among naturalists (and biologists) in using the proper term when describing the different ages of birds. For example, do you call a bird in the nest a young, a fledgling, or a nestling? And what do you call a bird that has left the nest but may be two or three years old but still does not show all of the adult features. Do you call it an immature, a young, or a sub-adult or to be more precise a second-year winter bird?

Using the proper terms when recording information helps with interpreting sightings and breeding records. There is quite a difference between a young, a fledgling, an immature, or sub-adult bird and recording the precise age can provide value-added data for an observation.

The definitions and photographs below may help clarify recording ages of birds and hopefully encourage observers to be as specific as possible with their field notes.

**Young** – *a general term used while the adults protect and feed their offspring from the time of hatching to independence.* It usually includes both the nestling and fledgling periods but is frequently used to refer to a bird in all stages of growth to maturity (Figure 118). To be more accurate it is recommended to use the specific terms below.

**Nestling** – *the full time from hatching until its departure from the nest without human interference or other disturbance*.

This can range from a few hours or a day for precocial birds hatched and entirely covered with fuzzy down (*e.g.*, Common Loon, Eared Grebe, Mallard, Sora, and Ruffed Grouse) to many days in the nest for altricial birds that are born naked with traces of natal down (Figure 119) and spend much longer periods in the nest. The latter applies especially to songbirds (Passerines).

Even though young may appear very large, and well feathered, in the nest they still remain nestlings until their first trip out of the nest (Figure 120).

**Fledgling** – *the short period when a young first leaves its nest until it is independent of all parenting care, especially being fed* (Figure 121).

This time varies considerably among species. For example, young American Kestrels depend on their parents to feed them for 12-14 days after fledging while young Prairie Falcons may continue to be fed by their parents for up to 35 days.

**Figure 118.** It is more accurate to call this "young" Red-tailed Hawk an immature as it is in the process of acquiring adult plumage. Victoria, BC. 27 June 2007 (R. Wayne Campbell).

It is important to record any feeding activity because fledgling periods are quite well known for some species and the information can be used to calculate a bird's full breeding period.

Some birds (*e.g.* swifts) have no fledgling period and fly directly from the nest being completely independent.

**Juvenile** – *a young bird that is independent of its parents* (Figure 122)*, and is able to care for itself* (*e.g.*, feeding), *but has not completed its post-juvenal (e.g., after breeding or post-nuptial) moult* which may extend, depending on the species, into late October and November.

**Immature** – a young bird that has completed its post-juvenal moult (*e.g.*, starts soon after independence) and until it acquires its adult plumage. For some groups of birds (*e.g.*, eagles and gulls; Figure 123) this stage may last from two to five years.

**Sub-adult** – *a young bird that requires more than one year to mature. The term is really a more precise term for the various stages of a bird as an immature.*

Most small birds, especially songbirds, acquire their adult plumage in the spring following the summer in which they hatched. Some groups of

**Figure 119**. The nestling period for an American Robin, from hatching to leaving the nest (*i.e*, fledging), is about 14-15 days. Creston, BC. 29 June 2006 (Marcia Long).

**Figure 121.** These recently fledged Eastern Kingbirds, still being fed by their parents about 10 metres from their empty nest, have another few days before they become totally independent and can be called a juvenile. The observers noted on the nest card that the fledglings had short tails. Near Vernon, BC. 8 July 2007 (Kevin Atkins).

**Figure 120.** The nestling period for a Bald Eagle, from hatching to first leaving the nest, lasts between 70 and 77 days (10-11 weeks). Near Copper Island, BC. 26 May 1996 (R. Wayne Campbell).

**Figure 122.** This juvenile Glaucous-winged Gull left its natal colony in late July and a month later is feeding independently of its parents. Esquimalt Lagoon, BC. 30 August 2006 (R. Wayne Campbell).

birds, including albatrosses, shearwaters, eagles (Figure 124), and gulls, may require up to four or five years to get their adult plumage.

**Adult** – a *bird's final, and breeding, plumage* (Figure 125). Sometimes, however, an immature or subadult-plumaged bird may breed and nest. Adults change their plumage no more than twice a year, usually before and after nesting.

## Fledged Young

To enhance the value of collecting breeding information, and time in the field, please fill out cards for fledged young even though a nest has not been found. A recently fledged young sitting on a branch, or one that has been out of the nest for awhile, but is being fed by its parents, is noteworthy.

Most contributors can identify young birds but it is important to record the stage of development. Descriptions could include downy tufts of down on head, stubby or bob-tail versus short/long tail, gape colour (often yellow), adults feeding away from the nest, ability to fly, well or not at all, spotted breast, or the bird's behaviour such as begging for food.

The recently published **British Columbia Nest Record Scheme Instruction Manual** gives six examples of fledged young for which nests cards should be completed. They include young with tufts of down, stubby-tails, yellow gapes, being fed by

**Figure 123.** This Glaucous-winged Gull, an immature, is starting its second year of life and in another year will moult into the more familiar adult plumage. Esquimalt Lagoon, BC. 31 August 2006 (R. Wayne Campbell).

**Figure 124.** This Bald Eagle is actually a sub-adult because it has remains of brown feathers in its head and tail. After 4-5 years these areas will become pure white. Sechelt, BC. 4 June 1996 (R. Wayne Campbell).

parents, or well fledged but in juvenile plumage and known to have been raised locally.

The instruction manual is available free-of-charge from the Biodiversity Centre for Wildlife Studies or from editor@wildlifebc.org.

**Figure 125**. The pure white body of this Trumpeter Swan identifies it as a full adult. Cranberry Lake, BC. 22 January 2001 (R. Wayne Campbell).

## Aging Waterbirds

Broods of waterbirds, especially cygnets, goslings, and ducklings of waterfowl (Figure 126), can be aged quite accurately following the criteria on plumage development shown in Appendix 1 (see page 62). This additional information allows the hatching date to be calculated and other analysis such as correlating weather in a particular season to productivity and laying times. Also, knowing the age of waterbirds is very helpful when developing profiles for regional breeding chronologies.

The drawings in Appendix 1 can be reduced and added to field notebooks for quick reference.

**Figure 126.** Female Bufflehead with a 1-7 day-old brood of five. Cypress Creek, BC. 27 June 1998 (R. Wayne Campbell). The plumage development for the ducklings are rated Class 1A that is the duckling is all down-covered. In this Class (1A) the ducklings range in age between 1 and 7 days old.

# REQUESTING AND SUBMITTING CARDS

BCNRS ADDRESS

B. C. NEST RECORD SCHEME
3825 Cadboro Bay Road
PO Box 55053
Victoria, B. C. V8N 6L8
Tel\Fax: (250) 477-0465
e-mail: bcfws@shaw.ca

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

Single nest and colonial cards, as well as an updated Instruction Manual, are available at no charge from the address above. Due to fieldwork commitments we suggest that you request material before mid-May.

Our web site (www.wildlifebc.org) presently has instructions and materials available to participants.

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 spring the following year. This year, compiling 12,000+ cards into species, grid, and contributor categories, and entering the information electronically, took over three months of volunteer work - part time!

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 were 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** and **Lesser Scaup** (Figure 127) nests or **American Coot** eggs in **Lesser Scaup** nests. If this is noticed please complete separate cards for each species and cross-reference to each nest or brood.

Common species (*e.g.*, **Canada Goose**, **Mallard**, **Ruffed Grouse**, **California Quail**, **Northern Flicker**, **Barn Swallow**, **Black-billed Magpie**, **Northwestern** and **American Crow**, **American Robin**, **Song Sparrow**, **Dark-eyed Junco**), and **House Finch** and common and introduced species (*e.g.*, **Rock Pigeon**, **European Starling**, and **House Sparrow**) are still

important to record. Often these are the only species, because of numbers, that researchers can analyze with some statistical confidence.

**Figure 127.** Two separate nest cards should be completed for this Lesser Scaup nest containing a single Ruddy Duck egg. Dawson Creek, BC. 26 June 2008 (R. Wayne Campbell).

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

We really appreciate receiving cards as early as possible. This gives us a chance to start the compiling process and data entry to produce the map, and prepare lists of species and contributors.

# ACKNOWLEDGEMENTS

All cards received this year were again sorted and compiled by **Jim McCammon** and **Eileen Campbell**, a task that started in September and was completed when the last cards were received in February. In addition, Eileen entered appropriate information into an Excel spreadsheet for use in preparing the maps for geographical representation and highest numbers by locations as well as the species and contributors list and totals.

We are grateful to many contributors who added prints, diagrams, and extra field notes to their cards to more fully document the breeding record. Most cards were received in species order which was a great help when sorting and entering information.

All photographers are acknowledged with their images in each figure caption. In addition, we are grateful to Heino Best (*i.e.,* Doug Brown), Claudia Hannert (*i.e.,* Jan Bradshaw), and Elizabeth Hewison (*i.e.,* Nancy Krueger) for obtaining photographs of the individuals profiled in this report.

**Janice Arndt, Sheila Reynolds, Lorraine Symmes, Ted Hillary, Dirk Pidcock,** and **Carla Haegele** provided text for their segment in the long-term monitoring section.

**Mark Nyho**f provided the cover drawing of the Black Tern chick.

The 2008 nesting season was another exceptional volunteer effort and it is obvious we have a passionate group of supporters.THANK YOU!

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# British Columbia Nest Record Scheme and *Wildlife Afield* – 2008

When we consider all of the stages in the life history of a bird we soon realize that without recruitment in a population the species suffers a major setback. And if poor reproduction continues for years the species very existence is challenged. As a contribution to our knowledge of the breeding biology for various species we have encouraged individuals to publish significant findings and make them available to the bird world. We do not discriminate where the information appears but we do follow up to see that the information is published somewhere.

In 2008, articles that have been published, and are slated for print in our journal *Wildlife Afield*, included 18 papers. Unfortunately, due to the effort required to produce the Common Loon account, publication of the second issue has been delayed. Never-the-less, they are listed here as they relate to the 2008 issues. All will be available on-line at www.wildlifebc.org.

The articles are:

**Bull, A.** 2008. Observations of an Anna's Hummingbird Nesting on a Wind Chime in Victoria, British Columbia. Wildlife Afield 5:26-31.

**Campbell, R.W.** 2008. Unusual Nesting Site of Yellow-rumped Warbler. Wildlife Afield 5:45-47.

**Campbell, R.W.** 2008. A New Herring Gull Breeding Site in Southern British Columbia. Wildlife Afield 5:49-51.

**Campbell, R.W.** 2008. Northern Extension of Breeding Range of Wood Duck in Interior British Columbia. Wildlife Afield 5(2): in press.

**Campbell, R.W.** 2008. Late Nesting of Bewick's Wren in North America. Wildlife Afield 5(2): in press.

**Campbell, R.W., M.I. Preston, L.M. Van Damme, D.C. Evers, A. Roberts, and K. Andrews.** 2008. Feature Species – Common Loon. Wildlife Afield 5:54-146.

**Campbell, R.W., L.M. Van Damme, Martin K. McNicholl, and P. Ohanjanian.** 2008. Feature Species – Forster's Tern. Wildlife Afield 5(2): in press.

**Carter, H.R. and S.G. Sealy.** 2008. Ancient Murrelet Breeding Record at Triangle Island, British Columbia, in 1949. Wildlife Afield 5(2): in press.

**Gronau, C.W.** 2008. First Nesting Record for American Coot on Cortes Island, British Columbia. Wildlife Afield 5(2): in press.

**Nygaard-Petersen, I.** 2008. Birds Associated With a Log-Boom Site in Theodosia Inlet, British Columbia, 2003-2007, Wildlife Afield 5:11-26.

**Nyhof, M. and R.W. Campbell.** 2008. Unusual Nest Site of a Brown Creeper in British Columbia. Wildlife Afield 5(2): in press.

**Preston, M.I. and A. Pomeroy.** 2008. Two Noteworthy Breeding Records of the Cape May Warbler in British Columbia. Wildlife Afield 5(2): in press.

**Siddle, C.** 2008. Status, Size and Breeding Chronology of an Urban Great Blue Heron Nesting Colony at Vernon, British Columbia, 1986-2008. Wildlife Afield 5:31-39.

**Siddle, C.** 2008. Re-use of American Robin Nest by Violet-green Swallow for Nesting. Wildlife Afield 5:48-49.

**Siddle, C.** 2008. British Columbia Record of a Brown-headed Cowbird Egg in a Spotted Sandpiper Nest. Wildlife Afield 5(2): in press.

**Van Damme, L.M.** 2008. Great Horned Owl Successfully Rears Four Young in the Creston Valley, British Columbia. Wildlife Afield 5:47-48.

**Van Damme, L.M.** 2008. Interspecific Feeding of Clark's Grebe Chick by Red-necked Grebe at Duck Lake, British Columbia. Wildlife Afield 5:51-52.

**Van Damme, L.M.** 2008 Annotated List of Birds from Trail British Columbia from 1933 to 1983. Wildlife Afield 5(2): in press.

**Van Damme, L.M**. 2008. Bald Eagle Usurps Osprey Nest in the Creston Valley, British Columbia. Wildlife Afield 5(2): in press

## Doug Brown

Doug was born 15 July 1957 in Toronto, Ontario, and spent his first seven years as a youngster growing up in Scarborough.

Even starting out in this urban environment his interest and fascination with nature, and the wonders of the natural world, flourished. He spent as much time as possible in the local parks chasing butterflies and other insects.

At seven years old his family moved to Beamsville on the Niagara peninsula where the nearby Niagara Escarpment with its trails and undisturbed woodlands were a fantastic playground for someone interested in nature. By the age of 10 he was birdwatching seriously and keeping notes on what he saw but his main interest was still mostly entomology.

Doug used to sneak his father's binoculars out of the house so he could go birdwatching and he spent as much time as possible out in nature. He spent the next 12 years living in various parts of southern Ontario and wherever he lived he found great spots to continue his nature studies.

Doug participated in his first Christmas Bird Count at the age of 16 and this was the event which really hooked him on birding. The following year he spent a summer working as a volunteer park naturalist at Point Pelee National Park where he gave guided walks on the marsh boardwalk and illustrated slide talks in the auditorium. At 19 he moved to British Columbia joining his family in North Vancouver.

The hiking trails of Grouse and Seymour mountains, and the many area parks, were his choice natural history outings. Doug soon joined the Vancouver Natural History Society and participated in their field trips. During his first summer in BC he went to the Okanagan valley for work in the orchards and became hooked on the area with its diversity of bird species and breathtaking beauty. After a few years of spending summers in the Okanagan, and winters on the coast, he permanently moved to Osoyoos.

Doug joined the Oliver-Osoyoos Naturalists club and started leading field trips into nearby birding spots. At the age of 31, he was given the opportunity to work in the forest industry and started working in logging camps on the central coast of BC. This gave him the unique opportunity to collect records for remote areas in the province seldom, if ever, visited by naturalists.

Doug continued his interest and commitment in the Christmas Bird Counts and today he has participated in over 300 individual counts in over 30 different areas of BC. He currently is the compiler for three different counts. In 1996 his job required him move temporarily to Langdale, on the Sunshine Coast. While there he joined the Sunshine Coast Natural History Society and started leading birding and botany field trips. In 2000, Doug returned to Osoyoos where he now resides.

The following year he started working each summer for Westcam Consulting Services carrying out breeding bird surveys, and other related survey work, on the Sunshine Coast, Queen Charlotte Islands, and southern Peace River region.

In 2005, Doug spent the autumn at the Long Point Bird Observatory in southern Ontario being trained as a bird bander. After successful training, he has become the bander in charge of the Vaseux Lake Bird Observatory, north of Oliver, running the autumn migration monitoring program.

Throughout his life Doug has unselfishly dedicated time to increasing our knowledge of the natural world, supporting conservation issues, and sharing knowledge with others. This passion is the dominant force in his life.

## John (Jan) Fraser Bradshaw

Jan was born on 5 March 1951 in Toronto, Ontario. Both of his parents were naturalists so he was introduced to the natural world early. His dad was a horticulturalist who authored two books in a series of 16 volumes on “how to garden” and popularized the subject on radio, television, and in articles in the newspaper. His mom was also a keen botanist and blooming birder.

While growing up, for 14 years, Jan was able to go spend his summers exploring the eastern shore of Georgian Bay at Nottawasaga Bay in Ontario. The sandy beaches had waves and gulls, terns, the pine and oak woods, and a variety of songbirds; the ponds had polliwogs and tadpoles, and he had a pet Eastern Painted Turtle. He vividly remembers the sunsets and how they constantly reminded him that he had all the playthings a young boy could ever want. He also explored the bay by boat and on one occasion visited an island called “Gull Island” and was amazed at the different gulls and terns and spotted sandpipers which were all on eggs. It was also one of the noisiest places he had ever visited and he got into big trouble for rowing out that far by himself.

In 1963, in his early teens Jan’s father arranged a trip to Long Point, Ontario, through Jim Woodford and Gerry McKeating and the Federation of Ontario Naturalists, at a time when the last of the Bald Eagles and Piping Plovers were still nesting. He was immediately awed at this wilderness of sand dunes and ridges, beaches and swamps, and the massive inner marshes of Long Point Bay, where waterfowl abounded. He eventually helped with trapping and banding about 10,000 birds, over 200 species, and learned about bird census techniques and spent every spare holiday volunteering for the next eight years. In the summer of 1967 he was invited to serve as a junior field research assistant with Mike Bradstreet under the direction of Dave Hussell. Towards the end of his time at the Long Point Observatory Jan helped analyze a decade of census data and became a warden to oversee operations including the volunteer program for a short period. To this day he uses that experience wherever he lives to enhance his knowledge of bird life in an area.

On August 23, 1971, he moved to British Columbia and settled in Burnaby for a few months before moving to a more permanent home at Harrison Hot Springs on December 21. His curious nature allowed him to explore the area for 21 years where he amassed a collection of field notes for Agassiz, Cheam Slough, Chehalis River (mouth), Deer Lake, Green Point (Harrison Lake), Harrison Hot Springs, Harrison Mills, Harrison River, Hick’s Lake, Kilby, Maria Slough (Seabird Island), Sasquatch Provincial Park, and Trout Lake.

Jan moved to the Shuswap Lake area in 1993 where he remained until 2005. His note-taking continued with emphasis on birding the mouth of the Adam’s River where he recorded 157 species.

In late 2005 Jan moved to Kamloops where he presently resides and works. Once again, his “just gotta know” nature had him searching local areas, such as Bowers Lake, Campbell Creek, Iron Mask Lake, Kenna Cartwright Municipal Park, Lac du Bois Grasslands Park, Tranquille, T’kumluups marsh, for birds.

With digital cameras now common, photography has become an important part of Jan’s life and nothing is ignored if he finds it interesting.

Jan is an experienced naturalist with a passion for recording information on all species of birds he encounters. He was a major contributor to the four-volume set of *The Birds of British Columbia* and remains today as an active participant in the British Columbia Nest Record Scheme.