BRITISH COLUMBIA NEST RECORD SCHEME

55th Annual Report - 2009 Nesting Season

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

Biodiversity Centre for Wildlife Studies Report No. 12 **June 2010**

PARTICIPANT PROFILES

Vi and John Lambie

Vi, who has always enjoyed nature, grew up on a farm in Benito in the Swan River Valley of Manitoba. Her farmland life enhanced her interest in wildlife daily. John grew up on the prairies on a farm at Dubuc, Saskatchewan. He enjoyed the outdoors and learned the different bird songs and got to know where many of them nested and what their eggs looked like. As a teenager, John and his friend, George Chopping, helped Dr. Stuart Houston band Great Horned Owl nestlings.

When Vi and John moved to British Columbia in 1973, John really liked the Mountain Bluebirds he saw around the mill site at Mackenzie. As old tree cavities used for nesting slowly disappeared John realized the bluebirds needed help. He started making nest boxes, at first from hollow Trembling Aspen trunks but soon switched his carpentry skills to plywood boxes. They were also considerably lighter and easier to move. Some of the 200 boxes are set out in forest cutblocks but as the trees grew they had to be relocated. Other boxes were placed around the shores of marshes and other wetlands. The boxes are cleaned of old nest materials each winter. Tree Swallows are the main occupants but a few Mountain Bluebirds and Violet-green Swallows, and occasionally a House Wren, have been found in the boxes.

In spring 1994, John and Vi assisted with spring and autumn bird transects conducted by the Canadian Wildlife Service and later, with Alan Simcoe, Jim and Cynthia Tuck, Bob and Janet Groseth, and Vida Tattrie, started a bird-banding station near Mackenzie. In 1997, the group moved away from the Environment Section of the Mackenzie Fish & Game Association and formed the Mackenzie Nature Observatory which is registered as a charity.

Their enthusiasm and passion for nature has almost become overwhelming for the couple. They volunteer their time in at least 20 different wildlife activities, the most demanding of which includes operating the banding station at Mugaha Marsh and at Gagnon Creek since 1994. This entails fund-raising, hiring banders, site maintenance, maintenance of the equipment including mending nets, sewing new bird bags, and washing them during the season, and compiling results annually and sending them to the Bird Banding Office. Other time-consuming projects include checking and maintaining the nest box trail, attending conservation meetings to have input into local and regional habitat decisions, serving on administrative and executive committees for local organizations, and of course, finding nests and completing cards for the British Columbia Nest Record Scheme.

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IMPORTANT NOTE

WE HAVE A NEW ADDRESS! Over 10,000 nest cards were printed two weeks before we were notified that our postal outlet was closing. The address on the "new batch" of nest cards (both single-visit and colonial) was: P. O. Box 32128, 3651 Shelbourne Street, Victoria, BC. V8P 5S2. When we have used up this printing we will add the new address to cards. In the meantime please note our new address for mailing in your 2010 cards.

British Columbia Nest Record Scheme
P. O. Box 55053
3825 Cadboro Bay Road
Victoria, BC. V8N 6L8

THE INTERNATIONAL YEAR OF BIODIVERSITY

In the mid-2000s, the United Nations proclaimed the year 2010, to be the "*International Year of Biodiversity (IYB)*". It was a well-orchestrated and supported move to make people throughout the world more aware of the vital role that biodiversity plays in their lives and in sustaining life on Earth. While humans depend on biodiversity to provide them with food, fuel, medicine, employment, and recreation, their activities are contributing to the rapid loss of biodiversity.

The objectives of International Year of Biodiversity are to:

• Raise awareness of the importance of conserving biodiversity for human-well being and promote understanding of the economic value of biodiversity;

• Enhance public knowledge of the threats to biodiversity and means to conserve it;

• Encourage organizations (and through them individuals) to take direct or indirect biodiversity conservation activities;

• Celebrate the achievements of "Countdown 2010" partners and other stakeholders;

• Report on the possible failures for not achieving the target, and;

• Prepare the ground for communicating the post-2010 target(s).

British Columbia has the most diverse biodiversity of any province or territory in Canada and yet there are many species, especially invertebrates that have yet to be discovered and scientifically named. Combined, there are over 1,100 species of fishes, amphibians, reptiles, birds, and mammals in the province and yet we are still at the stage where we lack knowledge of how they fit into ecosystems and how human activities affect their existence and future (Figure 1).

One of the leading initiatives of the International Year of Biodiversity is to mobilize action around the world during 2010 by encouraging local and regional initiatives and co-operation. Our small contribution to IYB will be to maintain the effort and standards of recording known breeding and nesting information on birds in British Columbia.

Figure 1. While we all know that Ospreys and fishes are intrinsically linked to each other we still do not know the "Fish Hawk's" food habits, diet, and size and kind of prey species required for successful breeding during their time in British Columbia. Duck Lake, BC. 6 May 2009 (Linda M. Van Damme).

55 YEARS AND COUNTING

Over 20,000 days have passed since graduate student Timothy Myres and new faculty member Dr. Miklos M. D. F. Udvardy in the Department of Zoology at the University of British Columbia in Vancouver, first proposed the idea of a nest

record card program in British Columbia. Both had experience with the British Trust for Ornithology who had been running a successful program in the United Kingdom for many years. The idea was presented to Department faculty and met with immediate skepticism. Since space was always an issue at the university some faculty members wondered where would the nest cards be stored, others questioned who would maintain and administer the program, still others were concerned who would pay for expenses such as printing of cards and annual reports, stationery, telephone calls, would faculty or Department of Zoology staff maintain communications and promote the program, and who in the Department would respond to requests for information and should the information be given freely or a fee charged for extracting the information to cover program expenses.

The only issue that was resolved was space. Since Dr. Ian McTaggart-Cowan was head of the Department of Zoology, and had a vested interest in the two museums in the Department, he agreed to provide storage space in the vertebrate museum. Everything else was picked up by graduate students or interested faculty members. Dr. Rudolf H. Drent, a recent Ph.D. candidate, was instrumental in providing personal financial and moral support to the program.

For the first few years graduate students completed nest cards from their field research. To increase participation, and follow the British Trust for Ornithology example more closely, it was decided to encourage others to participate. Many naturalists and bird watchers were concerned about disturbing birds while nesting but slowly a small group of dedicated nest-finders emerged and could see the value of collecting breeding information. It also helped that some graduate students were using and publishing information from the nest record program and the new information was well circulated.

Since the beginning, the British Columbia Nest Record Scheme (BCNRS) has been supported and operated by a small group of passionate volunteers outside of federal, provincial, and municipal governments and industry. Like bird-banders, nest-finders are a small group whose numbers have not changed much over the years. While contributors may number into the hundreds each year, the core group accounting for most nest cards averages less than 40 individuals.

The original 4 x 6 inch nest cards were stored in single unit, metal filing drawers (Figure 2). Each tray could hold about 1,000 cards. Purchasing new storage units was a major expense and many times discarded trays from within the university were snatched up and repaired. Over the years the collection occupied about 90 single drawers occupying a space about 2.1 metres (7 ft) long, 1.7 metres (5.5 ft) high, and 0.5 metres (1.5 ft) deep. A concern was the growing height and safety issue with volunteers filing cards. Consequently the entire collection was put in a storage locker until suitable working space could be found and new cabinets purchased. Much of the collection remained in unsorted boxes that required a major search when information was requested.

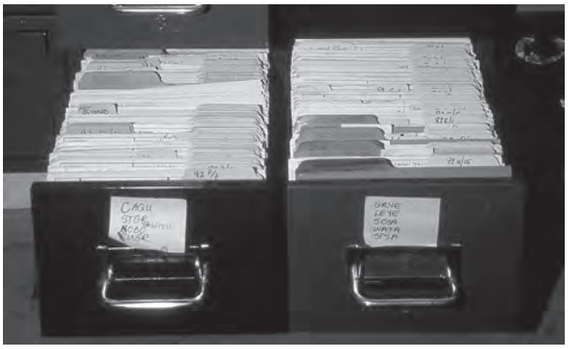


Figure 2. For 45 years, nests cards were filed and jammed into single unit, metal 4 x 6” card drawers that took up an increasing amount of precious storage space. Victoria, BC. 30 July 2009 (R. Wayne Campbell).

Recently, four new storage cabinets were purchased for $12,000. Two were donated by Dr. Fred Bunnell through his research grants and two were bought personally by Wayne and Eileen Campbell. A single cabinet, with 10 sturdy sliding drawers (Figure 3), measures 53 centimetres (21 in) long, 1.5 metres (4.9 ft) high, and 71 centimetres (28 in) deep and can hold as many cards as the entire previous collection of cards. Already, two additional cabinets must be purchased to accommodate un-filed cards from the 2008 and 2009 nesting seasons and allow for future expansion. Fund-raising has started for the additional cabinets.

Figure 3. A single new cabinet, 53 centimetres (21 in) long, 1.5 metres (4.9 ft) high, and 71 centimetres (28 in) deep can accommodate the entire previous 45-year collection of about 90,000 cards in about one-third of the space. The latter cabinet costs $3,000 per unit.

Figure 4. To date, nest cards for species of birds between "A" and "E" breeding in British Columbia have been sorted alphabetically and filed in large, sturdy, metal cabinets for easy access. Already, two cabinets are filled to near capacity for the 112 species between Alder Flycatcher and Evening Grosbeak. Johnson Landing, BC. 5 January 2009 (Gail Spitler).

Throughout its 55 years, the BCNRS has been a truly volunteer effort, from field expenses to locate nests and broods, time required to complete cards, and financial costs to operate, maintain, and store the collection. For the first time in many years, the very large collection is being organized for regular use. Species are being filed alphabetically for easy use and within species by National Topographic Grid to aid in geographical searches. To date, all historical and current cards for species from "A" (*e.g.*, Alder Flycatcher) to "E" (*e.g.*, Evening Grosbeak; Figure 4) have been sorted. The next stage is to purchase card dividers with tabs and sort each species into topographic grids (*e.g.*, 092B06, 103G12, etc.).

Only cards containing direct breeding evidence, or convincing breeding evidence (*e.g.*, cavity-nesting species flying into a hole with food and exiting with a fecal sac), are filed in the BCNRS. We do not consider singing, birds seen carrying nesting material or food, distraction displays, and similar activities positive breeding records. These observations, however, are added to our master electronic databases with the appropriate notation of behaviour or activity and presently number into the hundreds of thousands of records.

Fifty-five years is a long time to independently operate a successful volunteer program. As you read through the following pages you can appreciate the passion of a small group of people who willingly share their findings by contributing to the BCNRS, the largest and most complete regional nest record scheme in North America.

Our sincere thanks to the thousands of participants over the past five and a half decades who supported the BCNRS and believed in its future.

KICK-OFF TO THE 2009 NESTING SEASON

Although Great Horned Owls were calling on breeding territories in late 2008 and throughout January of 2009, it was the diminutive Anna's Hummingbird, weighing in at about four grams that really signaled the start of another breeding season in British Columbia. And once again, it kick-started the 2009 nesting season.

Since the species has adapted well to urban and residential areas in southwestern portions of the province, the striking male is easily spotted or heard once it starts to show off. In early January, his dive displays have started and it is just a matter of time before a mate is selected and the female starts building her nest. Often nests are located around human dwellings so it affords the opportunity to closely monitor their activities. In Victoria, Geoff Barnard was the first to report an Anna's Hummingbird (Figure 5) building a nest in the third

week of January. He wrote: *I had an Anna's nest built about 20th Jan, outside our condo window. I thought I could see two eggs in it from the window. Then there was no more action, though we did see a female within a few yards several times. On 4 Feb, I went for a closer look. One egg in a very clean nest, and momma appeared about three feet away giving me the evil eye. I withdrew with apologies, and she is now sitting righteously.*

Figure 5. The first breeding record for 2009 was an Anna's Hummingbird. This nest photographed by Geoff Barnard contained an egg and tiny nestling in mid-February 2007 in Victoria, BC. Nest-building probably started early in the second week of January.

There were four other early Anna's nests reported for southern Vancouver Island, all with nestlings being fed, during the first and second weeks of February. The latest record was a recently-fledged young at a feeder with a female in early September.

In its native California, Anna's Hummingbird may begin nesting in mid-November following rains which bring chaparral currant to bloom. By the end of May the breeding season is over. Since being first spotted in British Columbia in the mid-1940s, and nesting by 1958, the species has not only invaded the south coast of the province but is expanding its distributional range throughout the interior of the province.

The amount of new information provided by BCNRS contributors during the 1990s and 2000s to the general life history of this adaptable hummingbird species is significant. A few highlights include new ranges for heights of nests, number of broods per season, length of breeding season, diversity in nest location including natural (Figure 6) and artificial sites, and nesting success.

So, with all of the early Anna's Hummingbird nesting activity, the 2009 breeding season was officially underway and, as you will see, lasted just over nine months.

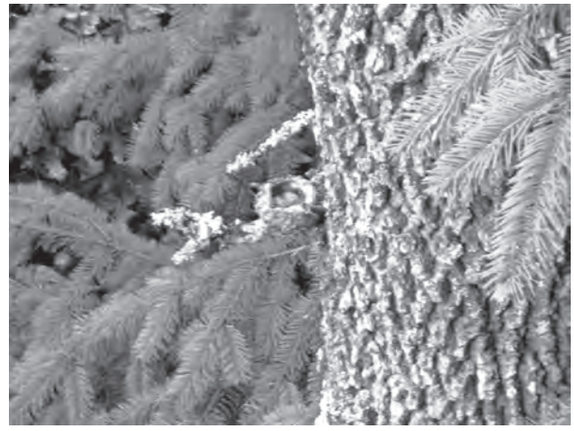


Figure 6. This exposed Anna's Hummingbird nest, built on the short branch stub of a large Douglas-fir tree, seems to be in a precarious situation but young successfully fledged. Victoria, BC. February 2009 (Elva and Hans Radtke).

THE 2009 NESTING SEASON

Summary

In some parts of the province, there is no "down" time for nest finders as the season can begin with the ringing in of the New Year or end when the autumn colours start to show.

The total breeding records, including historic and current cards, reached **21,888** down **2,014** nest records from the 2008 total of **23,902**. This is in part due to the amount of volunteer time devoted to transferring historical records each year and the availability of such information to search.

Since publishing independent nesting season reports for the 13-year period from 1997 (Figure 7) to 2008, and including the 2009 nesting season, we have averaged **18,450** breeding records per year making the BCNRS the most complete repository for any province or state on the continent. And during that same period interest in breeding

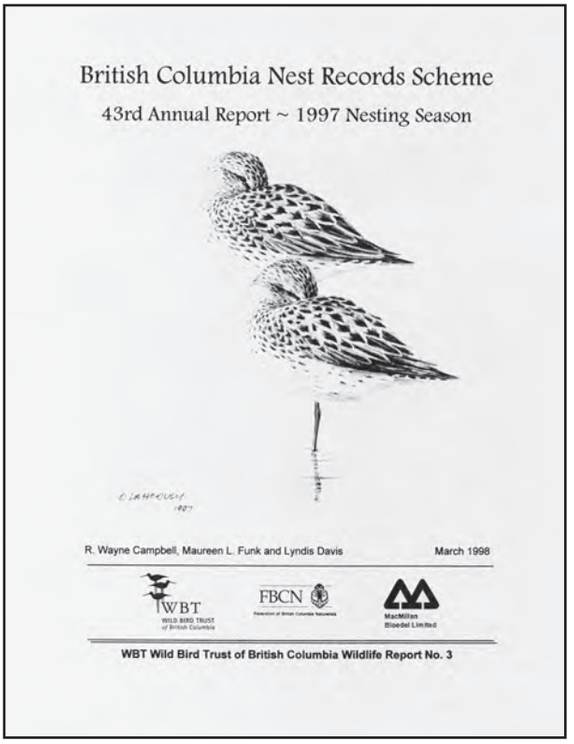


Figure 7. Many of our contributors wanted a "stand alone" BCNRS publication that dealt with the annual season summaries and additional information as it related to improving nest-finding abilities and recording more useful data. The first such report was published in 1998 for the 1997 nesting season.

Figure 8. This Red-naped Sapsucker, with ants for its young, fed a nestling and left the Trembling Aspen cavity with a bill full of droppings. This is considered a "confirmed" breeding record and the card will be filed in the British Columbia Nest Record Scheme. McLean Lake, BC. 11 June 1998 (R. Wayne Campbell).

birds has grown along with the size of our annual reports, ranging from 22 pages in 1997 to **92** pages in 2009.

While we received tens of thousands of records during the breeding season, and have added these to our electronic occurrence databases, only "confirmed" breeding records are filed in BCNRS cabinets. These usually include nests with known contents, broods incapable of sustained flight, or cavity-nesters where adults are observed taking food to young (Figure 8) and later removing fecal sacs.

Once again, suggested guidelines included in each annual report are being used to enhance the value of each record. This additional information certainly enhances the scientific value of the BCNRS and helps make it a very valuable program.

Various monitoring programs were continued with success and are discussed later in the report including a major section on nest box monitors that was coordinated by Linda Van Damme. Another big effort was put into searching wetlands in the Cariboo-Chilcotin region for breeding information as part of our "*Catalogue of British Columbia Freshwater Bird Colonies*" project. This also included putting out an additional 20 Black Tern nesting platforms and monitoring previous locations. It should be mentioned that these activities are all voluntary without any remuneration or financial support.

This year, **21,888 breeding records** were added to the British Columbia Nest Record Scheme for **246 species**. Of these, **11,634 records** were submitted by **210 active participants** for the 2009

season. Another **10,254 nests and/or broods** were transferred from historical sources.

Noteworthy Events

Once again, the **Yellow Rail** eluded a concentrated effort to locate a nest or spot chicks. **Don Myers** heard and saw adults in seven marsh settings in the southern Peace River region and thought he was close to a nest at Boundary Lake. He revisited the same area several times but left with the same results. Don did, however, hear the elusive rail in a shallow wetland north of its known range in the province. So, no new breeding species were added to the provincial total in 2009.

It is encouraging, with the increasing demands being placed on volunteers, that the number of BCNRS participants has remained fairly consistent over the past decade averaging about 240 individuals. While every breeding record is important, it is still a core group of about 40 people whose main interest outside family and work is nest-finding (Figure 9).

There is no consistency, or regular pattern, between breeding seasons (Figure 10). All are different and bring unexpected surprises. For example, entire colonies of **Great Blue Herons** may abandon a site one year, move to another temporary colony the next, not breed in the third year, and for whatever reason return to its original site to nest for many years to follow. The number of broods per year may also vary or change over time. When the **Anna's Hummingbird** arrived in British Columbia it had one brood per year. In 2009, at least three, and possibly four broods may have been raised between January and early September, which is unrecorded in scientific literature.

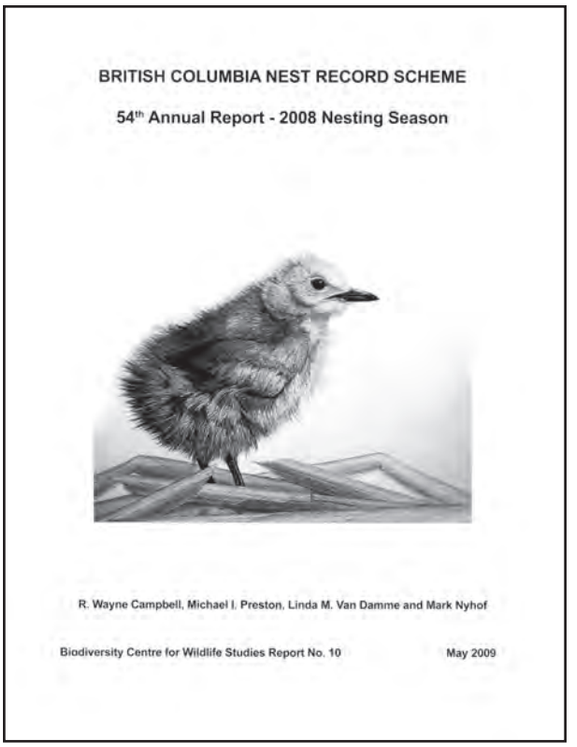


Figure 9. This 73-page annual report summarizes information for 23,902 historic and current breeding records reported for 234 species by 234 active nest-finders in 2008.

Figure 10. The presence of Eastern Kingbirds each year depends on available riparian habitats and stable water levels in ponds, lakes, and rivers. In 2009, some traditional nesting sites were abandoned due to low or disappearing water bodies. Tompson Lake, BC. 10 June 2009 (Vicky Atkins).

Range Expansions and Isolated Nesting

Populations of birds are dynamic and constantly changing in size and distribution. A few noteworthy range extensions (spatially and altitudinal), first records for local areas, re-nesting after long absences, and isolated breeding away from normal range (*e.g*., disjunct) occurred in 2009. Some of the extensions no doubt helped fill in "predicted ranges" for some species.

Every Harlequin Duck breeding record is significant because not only are they difficult to obtain but the species is being used by biologists and environmentalists as an indicator of untainted fresh-water streams. Therefore, a female **Harlequin Duck** with one young on **Glacier Creek** (Figure 11) in the Duncan Lake area of the West Kootenay spotted by **Marlene** and **Joe Johnston** on 22 July is noteworthy.

Figure 11. Female Harlequin Duck at rest on rock with downy young nearby. Glacier Creek, BC. 22 July 2009 (Marlene Johnston).

Although the **Cinnamon Teal** is expanding its range northward through the interior, and pairs are being reported more frequently, breeding information is scant, partly due to the difficulty of identifying the female. Experienced birder **Nancy Krueger** provided a noteworthy range extension when she identified a female with a brood of 10 young (Class IC) at **Shelley** northeast of Prince George.

The first breeding record of **Say's Phoebe** was recorded for **Creston** in 2001 (see *Wildlife Afield* 2: 84-85, 2005). While the valley was thoroughly searched each nesting season, no further evidence of breeding was noted, until eight years later, when **Linda Van Damme** had four pairs successfully nest raising several young to fledging.

There were three disjunct breeding sites reported for three quite different species, two nonpasserines and a passerine. Single pairs of **Arctic Terns** were found nesting in two isolated locations well away from their normal breeding range in northwestern British Columbia. A pair nested in 2009 north of Fireside near the **Liard River**. Although not confirmed it was suspected the site may have been used since at least the late 1970s. A second pair of nesting Arctic Terns was located by **Jim Sims** at **Eagle Lake** in the Chilcotin region in 2008 and followed up in 2009 with **Phil Ranson** (Figure 12) and **Sandy Proulx**. The latter site is about 630 kilometres southeast of the closest breeding at Spatsizi Plateau.

Figure 12. In 2009, a nest with two eggs and a downy chick of the Arctic Tern was located on a small island in Eagle Lake in the Chilcotin region of British Columbia. 18 June 2009. This is one of two known breeding locations well outside the bird's normal range in the northwest. (Phil Ranson).

Although the **Semipalmated Plover** had been recorded breeding once at **Le Blanc Lake** in 1961 by the late **Werner** and **Hilde Hesse**, the species was not reported for the Chilcotin region for the following 48 years. In 2008, **Kris Andrews** and **Jim Sims** worked together to locate a nesting pair at Eagle Lake, about 217 kilometres west of Williams Lake. At least one pair also nested there in 2009. Another site, nearby at Pyper Lake, was found by **Wayne Campbell** in 2009.

More details for the above two species of Charadriiformes have recently been published in *Wildlife Afield* (Volume 6, Number 1, 2009) as "Two Disjunct Breeding Locations for the Arctic Tern in British Columbia" by R. Wayne Campbell, Jim Sims, Phil Ranson, and Sandy Proulx and "New Breeding Locations for the Semipalmated Plover in the Chilcotin Region of British Columbia" by Jim Sims and R. Wayne Campbell.

The presence of small numbers of Caspian Terns at Eagle Lake (Figure 13) over the past two years suggests that they may start breeding on one of the islands in the future. We know the "Caribou Gang' will be looking.

Figure 13. Lakes with small, low islands may provide new nesting sites for the Caspian Tern in British Columbia in the near future. Eagle Lake, BC. 18 June 2009 (Jim Sims).

Unlike the four known colonies of **Ring-billed Gull** in the province, it was quite a surprise to **Wayne** and **Eileen Campbell** to find a single pair nesting in an old vehicle tract in a large agricultural field near **Bridge Lake**. They stood out like sore thumbs!

The **Common Grackle** has recently invaded wetlands and marshes in the southern Peace River region where it has greatly expanded its range and numbers over the past two decades. It seems bizarre then, that two breeding records would be found in 2009 from locations widely separated from each other and from the species' normal range. Fledged young, who could not sustain flight and accompanied by a female parent, were observed by **Wayne** and **Eileen Campbell** being chased by Red-winged Blackbirds in a small wetland near **"Swan" Lake** in the Chilcotin region. Hundreds of kilometres to the southeast, at **Fernie** near the Alberta/United States border, **Kevin Knight** watched adults carrying food into a wetland, and later he flushed a young.

A southern extension of breeding range was discovered for the **Magnolia Warbler** in 2009. **Gary Davidson** patiently searched and found a nest containing three eggs at **Summit Lake**, near Nakusp. Gary's nest was built in a thimbleberry thicket, an unusual site for the conifer-loving species (see page 28).

Early and Late Nesting Dates

Ignoring the Anna's Hummingbird, which nests ridiculously early, the start of the "real" nesting season was evident by nesting **Great Horned Owls**, **Mallards**, **Rock Pigeons, American Robins**, **Bushtits**, **Canada Geese**, **Barn Owls**, **Spotted Towhees**, and **Song Sparrows**. This year, an unpredictable species, the **Pine Siskin**, showed up with newly fledged young at a feeder in **Victoria** on 19 March! The nest was located in an ornamental evergreen and must have been constructed in mid-February, the earliest breeding date for the province.

When the autumn month of September arrives most people have started filling out nest cards and are reliving experiences of their past spring and summer. Some species, however, may not have young fledged yet (*e.g.*, **Ospre**y), have second broods or late nesting (*e.g.*, **Anna's Hummingbird** and **Spotted Towhee**), or may have an exceptionally late date previously not considered. New for her checklist area in the Creston valley was the discovery by **Linda Van Damme** of a near fledged **Western Grebe** at **Duck Lake** (see page 50) being fed fishes by adults until 30 October. Other noteworthy late nesting dates were also reported.

A **Brown Creeper** nest found tucked behind loose bark of a Western Redcedar with three eggs by **Mark Nyhof** on 14 June in the Victoria area is close to the latest known nesting date for this species in the province and is certainly a late date for coastal British Columbia (Figure 14). He wondered if his discovery may have been a second brood.

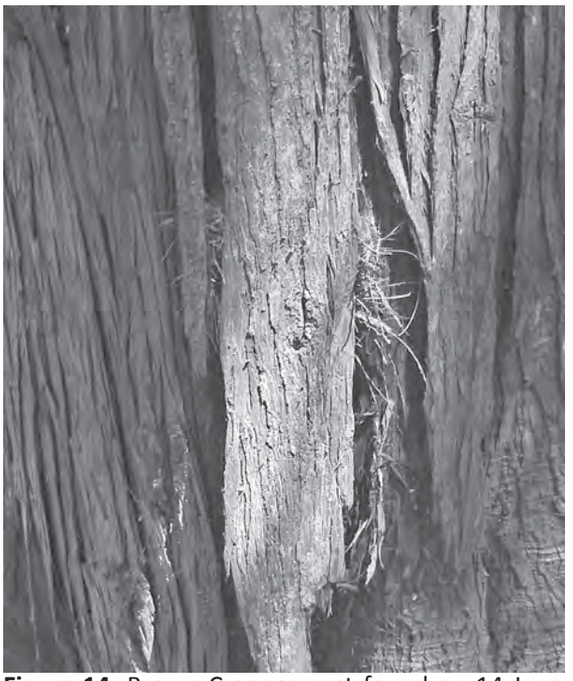


Figure 14. Brown Creeper nest found on 14 June 2009 in Victoria, BC. is the latest date for a nest with eggs for this species in coastal British Columbia (Mark Nyhof).

On the coast, the first eggs of **Orange-crowned Warbler** may be found in early May, with a peak of egg-laying occurring later in the month. A nest containing four eggs discovered in the **Victoria** area by **Mark Nyhof** on 4 July is the latest coastal record and may represent a second laying. The nest contained four nestlings on 12 July (Figure 15).

After breeding, the **Western Wood-Pewee** starts exiting interior British Columbia in early August and its autumn migration peaks later in the month and early September. In the **Creston valley**, **Linda Van Damme** observed an adult Western Wood-Pewee feeding one fledged and begging young in a cottonwood stand on 7 September. This unusually late fledging date is 22 days later than previously known.

Finding fledged young late in the year often requires additional field notes as well as some research to confirm it as a breeding record. On 12 October, an adult **House Finch** was accompanied by a fledgling at **Ralph** and **Elsie Gerein's** bird feeder in **Wynndel**. The eager young bird was fed by the adult. The length of dependency of fledged young on the female parent varies a bit depending on the time in the season nesting was completed. This family bond does not, however, usually last beyond 13 to 17 days, so the Gerein's observation is an acceptable late breeding date.

Figure 15. Finding an Orange-crowned Warbler nest, especially along the coast of British Columbia, is a rare event. This nest, containing four recently hatched nestlings, built on top of a Sword Fern among Salal, was located in Victoria, BC. on 12 July 2009. (Mark Nyhof).

Recording extreme breeding dates for members of the Corvid family is a bit different because many species maintain strong family ties throughout the year. At **Arrow Creek**, east of Creston, **Marcia Long** watched a young **Steller's Jay** put on quite a performance on 27 October all in an attempt to be fed by the adult, but to no avail.

Nesting Failures

Small populations of **American Avocets** have become established in south-central portions of the province but their success varies widely from year-to-year. On 20 June 2009, **Phil Ranson** checked the Bechers Prairie area of the Chilcotin. He reported: *There has been something of a catastrophic breeding failure of the avocets on **Roundup Lake**. Of the six known nests of about 12 days ago, all that remains is a single pair and two fledglings. **Lye Lake** seems to be faring better with 15 birds observed but only two appeared to be incubating and no fledglings were seen.*

At least two of the Roundup Lake nests had been trampled by cattle that had been recently

turned out onto the range. There have since been some discussions with the Department of National Defense (all nests are on military reserve), Ministry of Forests and Range, and Ducks Unlimited Canada regarding fencing off the section of shoreline where nesting has occurred.

It appears the **Alki Lake** nesting site at the Kelowna landfill produced one family (four chicks) of American Avocets observed by **Michael Force** on 18 June. However, a nursing female Coyote was lurking nearby.

Unusual Nest Sites

Most birds do everything they can to hide their nests from us and each year diligent nest-finders discover some of their secrets.

We are used to finding most **Great Horned Owls** nesting in abandoned Red-tailed Hawk nests high up in trees. While searching the **Vernon** area early in the spring, **Vicky** and **Lloyd Atkins** spotted a "couple of ears" protruding from the top of an old Black-billed Magpie nest. Sure enough, a female owl was hunkered down at this nest situated only three metres above ground! (Figure 16).

Figure 16. Black-billed Magpies will be looking for a new place to build a nest with a pair of Great Horned Owls nesting atop this one. Vernon, BC. 12 March 2009 (Vicky Atkins).

People that spend a lot of time in the field know that **Steller's Jay** nest mostly in mixed second-growth conifer forests. Although the nest is fairly large it is often difficult to locate. In **Mount Lehman**, in the Lower Mainland region of the province, **Gerry Powers** had a pair of jays nesting on top of a bird box under the eaves of his house (Figure 17). He suggested it nested there to get away from the introduced Eastern Gray Squirrel. This is one of the very few instances of Steller's Jay nesting on a human made structure.

Figure 17. This nest appears to be only the second record of the Steller's Jay nesting on a building. Mount Lehman, BC (Gerry Powers).

House Wrens will nest in almost any crevice or hole, from outhouses to nest boxes, that provides a suitable micro-climate to raise their young. This nest was built in an irrigation control box (Figure 18) that had to be left open until nesting was completed.

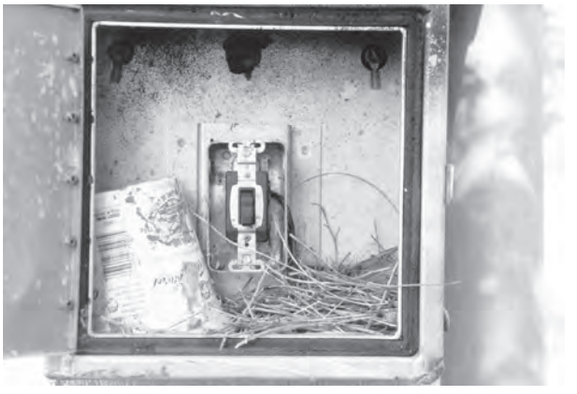


Figure 18. The narrow opening in this irrigation control box provided access for a pair of House Wrens to nest. Vernon, BC. 11 June 2009 (Vicky Atkins).

Figure 19. If an adult is spotted with food in its bill, like this Winter Wren, it is usually only a matter of time before it flies to its nest. Pacific Spirit Park, Vancouver, BC. 6 June 2009 (Kevin Atkins).

Finding a nest of a **Winter Wren** in its old-growth and mature forest habitat is always rewarding. But finding a new nest site for the province is a bonus. While searching mixed coniferous forests in the **Vancouver** area for evidence of nesting **Kevin Atkins** spotted an adult with a bill full of food (Figure 19) and watched it fly directly into a dense sucker growth on the side of a Red Alder tree (Figure 20). The nest was only 2.5 metres above ground and it contained at least two nestlings.

Figure 20. The Winter Wren flew directly to its nest in a dense sucker growth on the side of a Red Alder tree. Pacific Spirit Park, Vancouver, BC. 16 June 2009 (Kevin Atkins).

Last year **Ed McMackin** sent us photos of an **American Robin** nesting in his bird feeder in West Arrow Creek in the Creston valley and this season **Pat Huet** sent us her pictures of a similar choice of nest site in Canyon. One has to wonder if the same pair wanted a different home site! (see write-up under *Notes from the Field on* page 31).

A lone big boulder, know as "Sacred Rock" (Figure 21) sits exposed on the grasslands of **Bechers Prairie** and draws attention of all who pass by. It is a favourite perch for raptors and many passerines nesting nearby. On 31 May, **Phil Ranson** and **Sandy Proulx** observed **Mountain Bluebirds** on the rock, and suspected nesting in one of the crevices, but despite a walk around could not find a nesting crevice. Later, on 20 June, during a field trip of the Williams Lake Field Naturalists to Bechers Prairie, adults were noted on the rock with food in their bills (Figure 22) and soon the nest was discovered. Among the participants were Fred McMechan, Ordell Steen, Kathy Faulkner, Jim Sims, Sharon Henry, and Phil Ranson.

Figure 21. Phil Ranson pointing, and Jim Simms photographing, the location of the Mountain Bluebird nest in the "Sacred Rock." 20 June 2009, Bechers Prairie near Riske Creek, BC. (Sharon Henry).

Over the past 15 years or so, the **Northern Rough-winged Swallow** has really taken advantage of human structures and many have shifted their traditional nest sites from dirt banks near water to crevices in concrete retaining walls and drain pipes under bridges. A new artificial site for BCNRS files was submitted by **Anna Rose** who lives at **Gray Creek** in the Kootenays. Early in the season she watched a pair carrying nesting materials to a

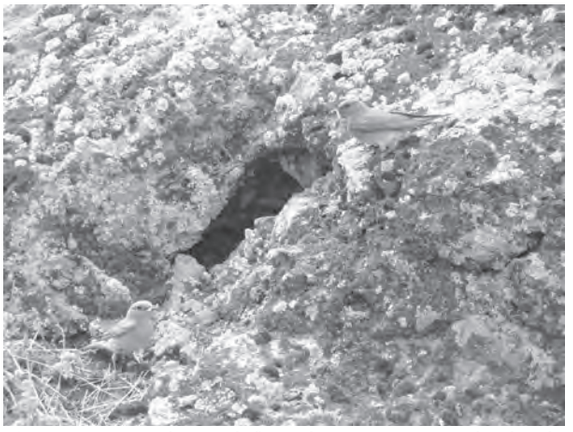


Figure 22. Male and female Mountain Bluebirds carrying food to feed large nestlings in a crevice in "Sacred Rock." 20 June 2009, Bechers Prairie, near Riske Creek, BC. (Jim Simms).

wooden shelf under the porch rafters and later was pleased they successfully reared young (see write-up under *Notes from the Field on* page 36).

While **European Starlings** will nest in just about any crevice, cranny, or slit in a natural setting or human made structure, it is noteworthy that these sites now include structures across rivers to warn pilots of hanging lines. In 2009, **Linda Van Damme** noticed two pairs of starlings nested in openings in aircraft safety globes mounted on a cable over the **Kootenay River** in the Creston valley (Figure 23). The starlings, of course, had to fly extra distances to get food for their nestlings.

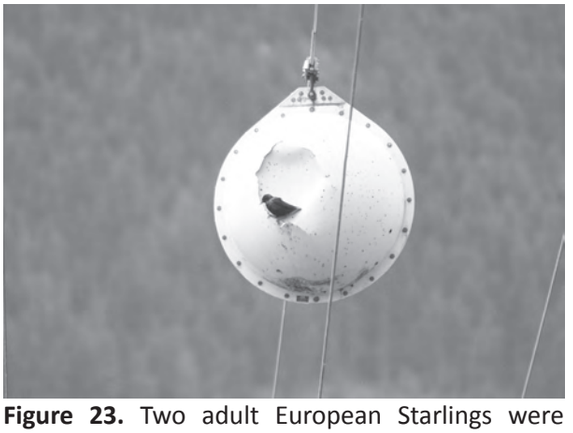


Figure 23. Two adult European Starlings were observed delivering food through an obvious crack in this aircraft safety globe and exiting with fecal sacs. Creston, BC. 9 July 2009 (Linda M. Van Damme).

In 1999, **Mark Nyhof** noticed a **Brown Creeper** with a bill full of food in a most unusual place - on a utility pole near a school yard in **Victoria**. It suddenly disappeared into the top opening of a metal I-beam used to support the pole (Figure 24). The nest contained young. It was used on four occasions between 1999 and 2009, the last being the 2009 nesting season. While the site is unusual, it was not known previously that the species could re-use a site because of the fragile nature of its more natural site behind hanging tree bark. See *Unusual Nest Site of a Brown Creeper in Victoria, British Columbia* by Mark Nyhof (Wildlife Afield 6 (1): 28-30 2009) for more details.

Figure 24. Adult Brown Creepers entered their nest through a narrow opening in the top of the metal I-beam supporting the utility pole. Victoria, BC. 31 January 2009 (Mark Nyhof).

New Species Information Since
The Birds of British Columbia

Birds have wings and move about freely and the very nature of the topography of the province makes keeping up with new information since publication of the four-volume set of *The Birds of British Columbia* nearly impossible. Some new finds this year, however, are noteworthy.

While the **Northern Pygmy-Owl** (Figure 25) is widely distributed across southern British Columbia finding nests or fledged young is a rare occurrence. In 2009, we received only a single record for this elusive owl. **Ed McMackin** recorded a family with fledged young in the Lakeview-Arrow Creek region of the **Creston valley** which is the first confirmed breeding record for the area.

Figure 25. The Northern Pygmy-Owl is a year-round resident in the Creston valley but until 2009 breeding had not been confirmed. Arrow Creek. 21 December 2009 (Marcia Long).

Four other significant breeding records were reported for the **Creston valley** by **Linda Van Damme** and **Marcia Long**. The **Bewick's Wren**, normally considered a resident species of extreme southwestern British Columbia, is starting to show up at interior locations to the east. It was a great surprise then to find an adult feeding fledged young under the canopy of a cottonwood forest in the Creston valley. Another rare find, because of its high-elevation nesting, was a **Hermit Thrush** nest in the Boundary Lake area. Adults were feeding young which were close to fledging. Two broods of fledged **Wilson's Warblers** were being fed by adults in alders in the Summit Creek watershed (Figure 26). Three records of **Lincoln's Sparrow** (Figure 27) consisting of a nest with small nestlings, another with large nestlings ready to fledge, and a

Figure 26. Newly fledged young Wilson's Warbler, still showing downy tufts of feathers on the head and being fed by parents, constitutes a confirmed breeding record for the Creston valley. 30 June 2009 (Marcia Long).

Figure 27. Lincoln's Sparrows inhabit the wetter mountainous slopes of the Creston valley and nests are a challenge to find in the spruce forest bogs. 3 May 2007 (Linda M. Van Damme).

third record of fledged young being fed by adults, were located in the Summit Creek watershed.

On 15 June, an adult **Peregrine Falcon** was observed hunting waterfowl at **Duck Lake**, near Creston, and on 27 August a juvenile was seen. It was later learned that a botany crew working north of Kootenay Landing discovered a pair of falcons with one young earlier so it is likely the birds at Duck Lake may have been family members from this nest site.

There are few reliable breeding records of the **Pine Grosbeak** for the province. **Jim Lawrence's** historical observation of recently fledged young with adults at 1,981 m (6,500 ft) on **Mount Alderidge**, in the Badshot Range of the Selkirk Mountains is noteworthy. An **American Pipit** nest with eggs (Figure 28) at 2,288 m (7,500 ft) also provides a new locality record. Jim also found a **Hermit Thrush** sitting on its nest up Salisbury Creek at 1,829 m (6,000 ft), on the north slope of Kootenay Lake, on 8 July 2007 (Figure 29).

Figure 28. While it is suspected that the American Pipit may nest in much of the alpine areas of British Columbia, few nests have been located. This nest, containing three eggs, was found at 2,288 m (7,500 ft) elevation on Mount Alderidge, BC. 28 July 2007 (Jim Lawrence).

Sometimes suspicions ride high and excitement prevails knowing that new information may be found beyond *The Birds of British Columbia*. Many participants sent notes about rare birds in their area singing their hearts out but either a mate did not show up or evidence of breeding could not be found. **Pat Huet** once again had a male **House**

Figure 29. Hermit Thrush sitting on its nest in alpine habitat. Near Salisbury Creek, BC. 8 July 2007 (Jim Lawrence).

Wren return to her property in the Creston valley (see write-up under *Notes from the Field* on page 27). Also, a male **Tennessee Warbler** was observed singing along Hartley Creek Road, north of Fernie, during late June by **Kevin Knight**, but as he said "*the thought of finding a breeding record this far south of the warbler's normal range would be like finding "gold".* Both findings tempting, but no cigar!

Highlights

Families and Species

The provincial list of breeding species remains at 312.

Five bird families, representing 55 different breeding species, had over 1,000 breeding records each and accounted for 71 percent of the final total of 21,888 records. Thirty-three species combined for the two highest families of **Gulls, Terns and Allies** (8 species with 6,586 records) and **Geese, Swans and Ducks** (25 species with 3,006 records) and made up 44 percent of all records. Colonies of **Ring-billed**, **Herring**, and **Glaucous-winged gulls** are all terrestrial in their nesting habits and numbers are fairly easy to obtain in a relatively short period of time. Together they accounted for 5,625 nests (36 %). The waterfowl totals (19 %) are more remarkable since none of the species are true colonial-nesters but it should be remembered that their broods are easy to spot in open water from shore.

Totals for the remaining three bird families included **Blackbirds, Orioles and Allies** (2,087), **Grebes** (1,942), and **Swallows** (1,856; Figure 30).

Figure 30. The Goodacre family, Holly, Peter, and dad Brian, checking the contents of a nest box near Riske Creek, BC. 16 June 2009 (R. Wayne Campbell). The large number of nests reported for swallows attests to the amount of effort required to park vehicles safely off-road, walk to boxes, often up hills and through ditches, and to keep a constant vigil for snakes, wasps, and other critters.

Other families with over 200 breeding records are mainly for species that require a lot of travelling and searching because they are either solitary nesters (*e.g*., Brown Creeper), have large territories (*e.g*., Sandhill Crane), or dense emergent stands of rushes and cattails have to be penetrated to find a nest. These include the **Rails and Coots** (909), **Bluebirds, Thrushes, and Allies** (817), colonial **Cormorants** (717), **Osprey, Eagles, Hawks, and Allies** (381; Figure 31), **Oystercatchers** (258), semi-colonial **Bitterns, Herons, and Night-Herons** (247), **Partridges, Pheasants, Grouse, Ptarmigan, and Turkeys** (240), **Tyrant Flycatchers** (221), and **Wrens** (207).

The large number of **Black Oystercatcher** nests tallied consisted mostly of historical records transferred from government publications.

Eleven species with over 500 individual records made up 60 percent of the 2009 total of which **Glaucous-winged Gull** had the most records at **4,579**. The other nine species included **Eared Grebe** (1,415), **Yellow-headed Blackbird** (1,237), **Tree Swallow** (901), **Ring-billed Gull** (872), **American Coot** (861), **Canada Goose** (815; Figure 32), **Black Tern** (783), **Pelagic Cormorant** (579), **Red-winged Blackbird** (571), and **Mountain Bluebird** (536). The Yellow-headed Blackbird total was the most records ever received for this species in a single year during the British Columbia Nest Record Scheme's 55-year history.

Figure 31. One of these large, soon to fledge Osprey nestlings, is exercising its wings on its platform nest near Smithers, BC. 4 August 2009 (Marcus Womersley).

Figure 32. This Canada Goose nest, beautifully constructed of clumps of Sphagnum and twigs, was found in a marsh near Mackenzie, BC. on 16 May 2009 (Vi and John Lambie).

Twenty-two other species were well represented in 2009 and added significant numbers along with new information to their growing files. These included **Wood Duck** (143), **Canvasback** (93), **Harlequin Duck** (7), **Barrow's Goldeneye** (284), **Common Merganser** (109), **Ruddy Duck** (177), **Rock Ptarmigan** (4), **White-tailed Ptarmigan**

(40), **Common Loon** (115), **Pied-billed Grebe** (103), **Red-necked Grebe** (309), **Clark's Grebe** (14), **American Bittern** (12), **Sora** (39), **Sandhill Crane** (26), **Forster's Tern** (154), **Common Nighthawk** (24; Figure 33), **Anna's Hummingbird** (26), **Barn Swallow** (267), **Orange-crowned Warbler** (15), **Brown-headed Cowbird** (83), and **House Sparrow** (46).

Figure 33. Habitat loss has greatly impacted the availability of suitable nest sites for Common Nighthawk in the Greater Vancouver area. Today, finding a nest is a challenge. At Iona Island, Dave Schutz located a nest with an egg in summer 2009 and later photographed the adult and chick.

The unusually large numbers for **Clark's Grebe** and **Forster's Tern** were the result of compiling historical records and incorporating 2009 surveys for "Featured Species" accounts published as species profiles in *Wildlife Afield* (see Volume 6, Number 1 and Volume 5, Number 2 respectively).

Many of the large numbers for waterfowl were extracted from historical documents.

Brown-headed Cowbird Parasitism

The **Brown-headed Cowbird** is a brood parasite that usually 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.

Eighty-three instances of parasitism, either nests with eggs or nestlings, or recently fledged young being fed by its host, were reported this season for 25 species. Host species included **Pacific-slope Flycatcher**, **Willow Flycatcher**, **Hammond's Flycatcher**, **Least Flycatcher**, **Warbling Vireo**, **Red-eyed Vireo**, **Swainson's Thrush**, **American Robin**, **Cedar Waxwing**, **American Redstart**, **Black-throated Green Warbler**, **Connecticut Warbler** (Figure 34), **Yellow Warbler** (Figure 35), **Common Yellowthroat**, **Lazuli Bunting**, **Western Tanager**, **Spotted Towhee**, **Chipping Sparrow**, **Song Sparrow**, **White-crowned Sparrow**, **Dark-eyed Junco** (Figure 36), **Red-winged Blackbird**, **Yellow-headed Blackbird**, **Brewer's Blackbird**, and **House Finch**.

Thirty-three individuals and organizations found evidence of parasitism and completed two separate nest cards, one for the host species and

Figure 34. To find a nest of a Connecticut Warbler in British Columbia is exciting but to find it parasitized by a Brown-headed Cowbird is significant because of the warbler's restricted range in the province and the potential impact on nesting success. The nest was located on the ground among grasses in a mature trembling aspen forest on 25 June 2005 (left) and contained three nestling cowbirds on 4 July 2005 (right). Fellers Heights, BC. (Mark Phinney).

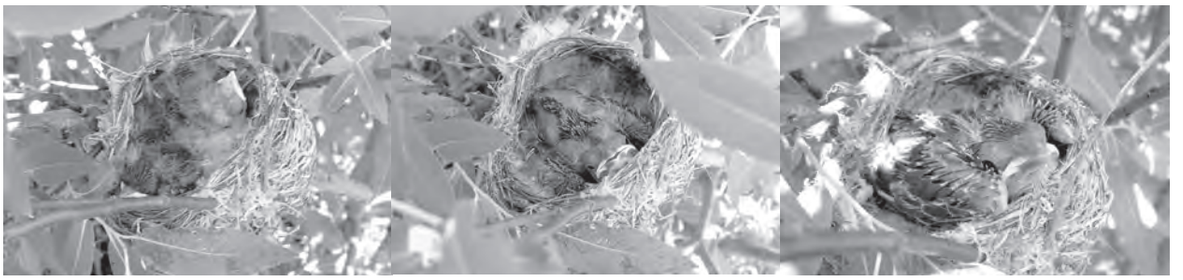


Figure 35. Although the Yellow Warbler is a frequent host for the Brown-headed Cowbird, some individuals have adapted to the parasitic habit by adding a new nest lining over the clutch (their own eggs plus the cowbird's) and starting a new clutch. At Fernie, BC., Kevin Knight followed a parasitized Yellow Warbler nest with photographs. On 28 June it contained four of its own nestlings and a Brown-headed Cowbird nestling (left); on 2 July the Yellow Warbler nestlings disappeared from the nest but the cowbird nestling remained (middle); and on 4 July the Brown-headed Cowbird nestling occupied the entire nest cup (right).

Figure 36. Although built on the ground amongst Sword Ferns and forest debris, under an 80% closed canopy, this Dark-eyed Junco nest was still discovered by a Brown-headed Cowbird. Francis King Park, Victoria, BC. 7 June 2009 (Mark Nyhof).

the other for the cowbird. These included: **E. M. Anderson**, **Anonymous**, **Vicky Atkins**, **Gary Breault**, **Eileen** and **Wayne Campbell**, **Linda Durrell**, **Brian**, **Holly**, and **Peter Goodacre**, **John Hodges**, **Marlene Johnston**, **Ronda Karliukson**, **Kevin Knight**, **Vi** and **John Lambie**, **Robert E. Luscher**, **Mike** and **Barb McGrenere**, **Arthur L. Meugens**, **James A. Munro**, **Mark Nyhof**, **Ivar Nygaard-Petersen**, **B. R. Peterson**, **Mark Phinney**, **Glenn Ryder**, **Lorraine Scott**, **Bob Steventon**, **Richard Swanston**, **Linda Van Damme**, **Vancouver Natural History Society**, **Victoria Natural History Society**, **Williams Lake Field Naturalists**, and **J. Wynne**.

Each card is filed separately in the BCNRS. Marlene Johnston noticed for the first time in 2009 newly fledged Brown-headed Cowbird young being fed in her yard in Lardeau by a Yellow Warbler, Red-eyed Vireo, and House Finch. The latter species is considered a rare cowbird host.

Coverage

British Columbia is a mountainous province with deep valleys and bare rocky peaks, much of which is inaccessible to humans without the aid of a helicopter. It is always impressive to read each year how much of the actual province is covered by BCNRS volunteers.

About 28 percent (331 grids) of the 1:50,000 National Topographic Service map grids were covered for all historical and current records included in this report. Over eighteen percent (215 grids) were covered by participants in 2009 (Figure 37).

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, and the Prince George region were also well covered.

For some grids, the area is covered only superficially with spot checks as people are travelling through. For others, only specific habitats (*e.g.*, wetlands; Figure 38) are searched while grasslands, forests, and other vegetative associations are essentially ignored. The single

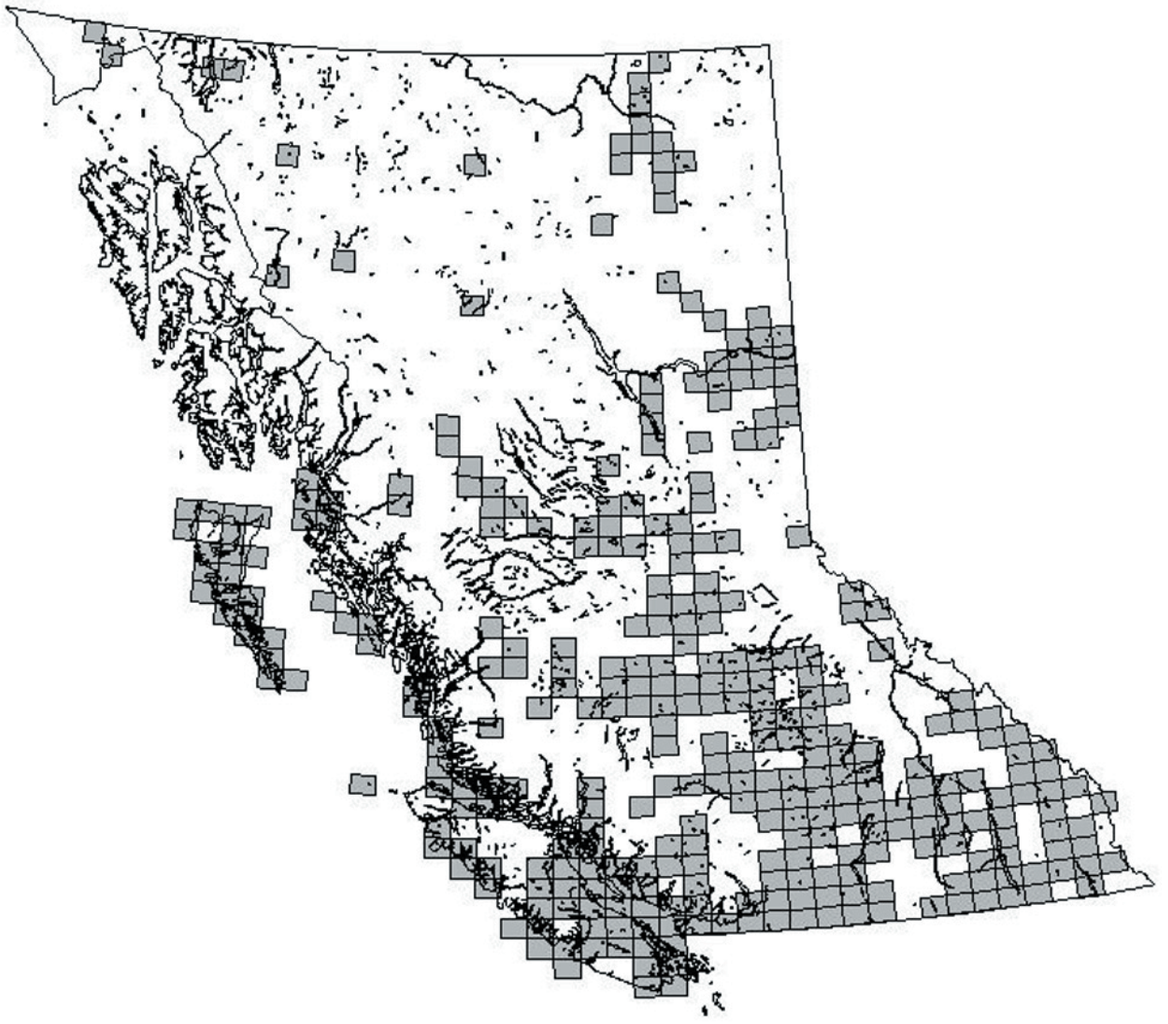


Figure 37. Provincial coverage for the British Columbia Nest Record Scheme in 2009.

region in the province most thoroughly scoured for breeding records is the Creston valley. In 2009, 14 individuals really covered the area well. However, the productive wetland habitats were 'scoped' from shore for breeding marsh birds. Therefore, the impressive combined totals for the valley were tallied the hard way - on land slogging through brush, woodlands, forests, and riparian shrubs. Over the past decade or so the Creston valley has been the model of representation for species diversity and breeding information for any single area in the province.

The northern Okanagan region, including **Kalamalka Lake**, **Coldstream**, **Vernon**, and **Swan Lake**, is another area that is covered well every year by a small group of long-time participants. The important contribution here is the methodical approach to data-gathering, mainly by **Vicky** and **Lloyd Atkins**, and earlier **Alice Beals**. Regular sites are visited about the same time of year with about the same effort.

Vi and **John Lambie**, who are almost reaching volunteer overload, once again added to their history of regularly submitted information from the **Mackenzie** area in central British Columbia to the BCNRS files. **Ted Hillary** continued to provide excellent coverage for the water portion of the southern end of **Shuswap Lake** and residential areas of **Salmon Arm**.

Field work this year by **Wayne** and **Eileen Campbell** was diverted from the southern Peace River region, from the vicinity of Fort St. John south

Figure 38. Dr. Brian Goodacre, a radiologist from Victoria, BC., spent part of his summer holidays in the Cariboo-Chilcotin area in 2009 wading through marshes searching for nesting birds. Near Big Creek, BC. 14 June 2009 (R. Wayne Campbell).

through Dawson Creek to the Alberta border, to the Cariboo-Chilcotin region that included the area from **Williams Lake** west to **Bella Coola** and south to **Bridge Lake**. Consequently coverage and numbers were much lower for northeastern areas.

Other areas especially well covered included **Campbell River** (Ed Silkens), **Harrison** and **Agassiz** (Janne Perrin and Jan Bradshaw), **East Kootenays** (Sheila Reynolds), **Kamloops** region (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), **Swan Lake** in Victoria (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).

The entire north-central and northwestern portion of the province and coastal mainland mountain ranges was again poorly documented although historical information for the Queen Charlotte Islands continues to have the archipelago represented.

Figure 37 shows where breeding records were found in various NTS grids throughout the province in 2009. For the entire total (21,288 records) the top five areas were from the vicinity of **100 Mile House** (092P11), **Sechelt** (092G05), **Greater Vancouver** (092G06), **North Pine** (094A07), and **Springhouse/ Bechers Prairie** (092O16; Figure 39). For only the 2009 season (11,634 records) highest numbers were from the vicinity of **100 Mile House**, **Salmon Arm** (082L11), **Springhouse/Bechers Prairie**, **North Pine**, and **Creston valley** (082F02).

There were 79 grids in total (43 for 2009 season) where only a single nest/brood was recorded.

Figure 39. Most breeding records for the 2009 season were found in grasslands, interspersed with numerous wetlands, in the Cariboo-Chilcotin region of British Columbia. Bechers Prairie near Riske Creek, BC. 3 July 2002 (R. Wayne Campbell).

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 2009, 210 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 time required for data entry.

Two months of extensive (and exhausting) field work in the Cariboo-Chilcotin region by **Wayne** and **Eileen Campbell**, mainly searching wetlands by canoe and wading, resulted in **6,468** individual

breeding records for **121 species**. Many of the records were from loosely colonial-nesting species like **Eared Grebe**, **American Coot**, **Black Tern**, **Marsh Wren**, **and Red-winged** and **Yellow-headed blackbird**.

The **Creston valley** was well covered by the efforts of **Ed McMackin**, **Vic Cousineau**, **Marcia Long**, **Ralph** and **Elsie Gerein, Pat Huet**, **Carla Ahern**, **Cyril Colonel**, **Lorraine Scott, Sharon Laughlin, Ronda Karliukson, Brent Wellander, Colleen Erickson, Gary Breault,** and **Linda Van Damme**. In total, these 14 individuals documented **856 breeding records** for **95 species**.

Seventeen people submitted 100 or more nest records in 2009. These included **Wayne** and **Eileen Campbell** (6,468), **Don Myers** (866), **Tom Brighouse** (700), **Linda Van Damme** (665), **Glenn R. Ryder** (573), **Mark Nyhof** (355), **Canadian Coast Guard** (256), **Sandy Proulx** (196), **Lloyd** and **Vicky Atkins** (186), **Ted Hillary** (181), **Beverly H. Butcher** (135), **Mat Pearson** (126), **Ivar Nygaard-Petersen** (119), and **John** and **Vi Lambie** (112).

Barbara Begg and **David Stirling** went birding in the southern **Peace River** area and sent in cards individually that totaled more than 100 records.

Historical records with over 100 nests or broods transferred from notebooks and reports included the following 21 sources: **Ethel Kippen** (1,179), **James A. Munro** (1,045), **Tracee Geernaert** (675), **Steve Wilson** (581), **Ken Kennedy** (Figure 40) and **Wayne Campbell** (545), **Neil K. Dawe**, **John M. Cooper**, **Andrew C. Stewart**, and **James A. Young** (532), **Environment Canada** (524), **Ralph Peterson** (325), **Vancouver Natural History Society** (289), **Charles J. Guiguet** (261), **Phil Matty** (261), **Clyde Burton** (245), **Gordon Odlum** (179), **British Columbia Ministry of Environment** (146), **Canada Department of Transport** (133), **Michael Hansen** (133), and **Sid Roberts** (108).

Some contributors even kept a watchful eye for published breeding records in local newspapers (Figure 41) and magazines.

Figure 40. In the 1960s, Ken Kennedy assisted with censuses and banding activities at seabird colonies in the Strait of Georgia and submitted field notes from which breeding information was later transferred to nest cards. Mitlenatch Island, BC. August 1965 (R. Wayne Campbell).

Figure 41. Shortly after "*The Morning Star*" newspaper appeared in Vernon homes with a photograph of a female Mallard with ducklings, Vicky and Lloyd filled out a nest card and attached the clipping. 19 June 2009 (Cory Bialecki).

Quality of Information

Filling in the Blanks

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 42).

For convenience, many people use the **4-letter**

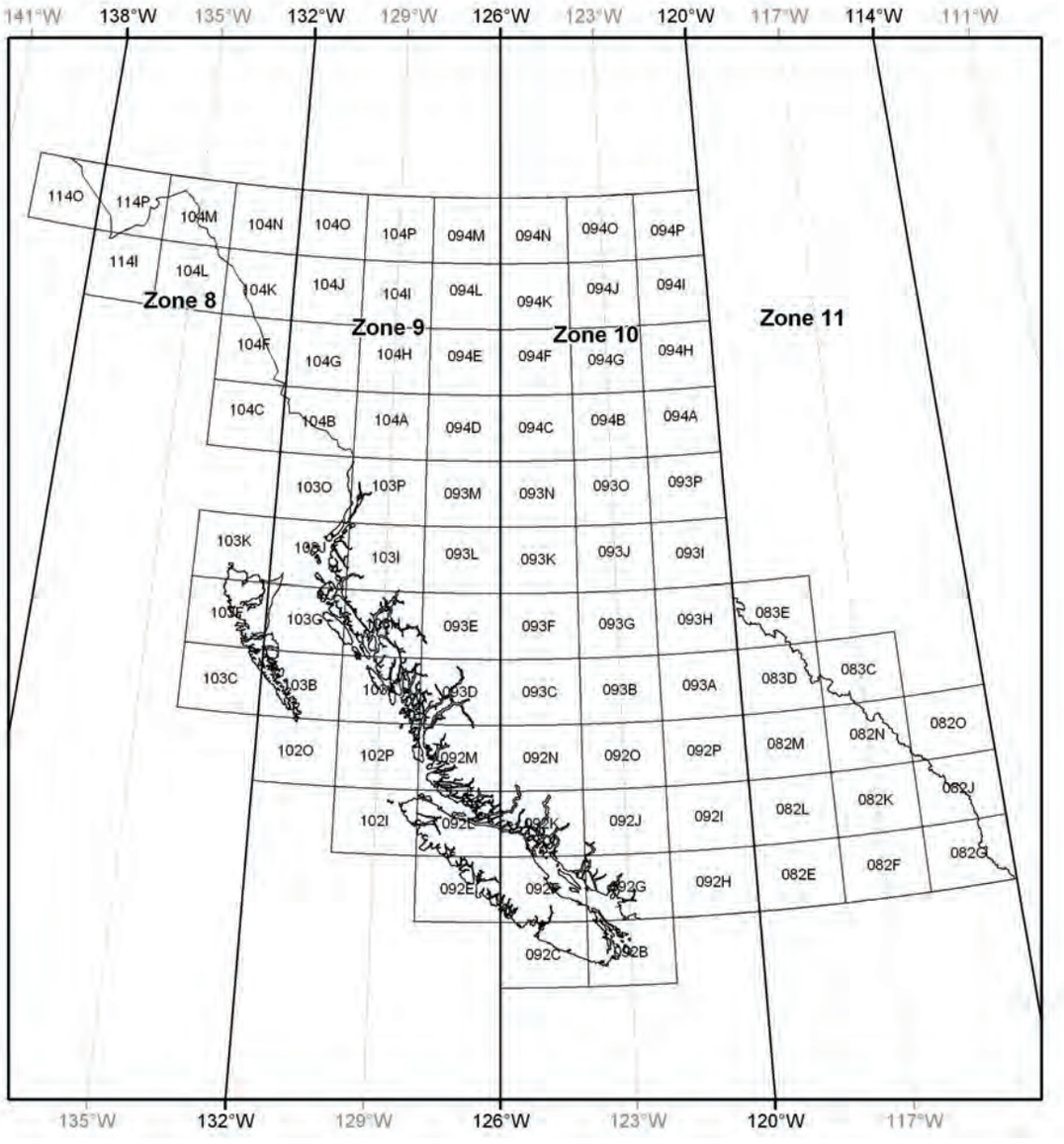


Figure 42. Overview of the Universal Transverse Mercator (UTM) Zones for British Columbia.

codes for birds on their nest cards. While this is fine, it is important that a standard reference for British Columbia is used to eliminate any possible sources of error.

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 or 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 43).

Figure 43. 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.

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).

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" (Figure 44), or, "dark". Most Red-tailed Hawks nesting in the Atlin area of north-western British Columbia are "dark" morphs.

Figure 44. Near Fort Nelson, BC., this adult rufous morph Red-tailed Hawk was paired with a normal-plumaged mate near a nest site. 10 June 2006 (Myrna Blake).

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).

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

Documentation with Photographs

The number of colour and black-and-white prints attached to nest cards and compact disks (CDs) with dated images is appreciated. In 2009, we received about 350 such documentations. 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.

A lot of time is spent by volunteers maintaining the BCNRS to locate the **precise location** for nest sites with local names as well as try to interpret **habitat descriptions** on cards. **Vicky Atkins** is aware of this problem and often attached prints to nest cards for which there are only local names (Figure 45). Once seen, the print may also help identify the site for historical cards that had questionable location information.

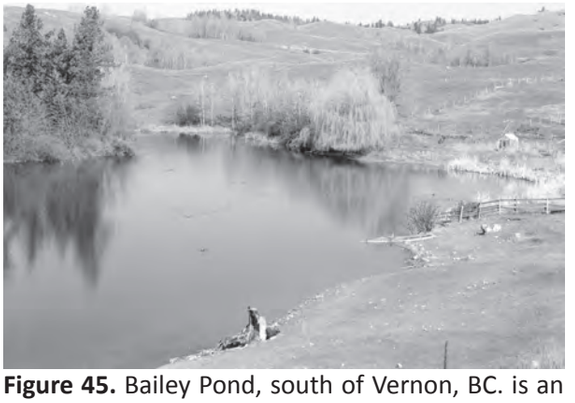


Figure 45. Bailey Pond, south of Vernon, BC. is an example of a popular birding site that is difficult to locate unless you are familiar with the local name. June 2009 (Vicky Atkins).

Fortunately most contributors submit their information in the form of digital prints, with full details on the back of each print. Others, like **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. Oftentimes, the print adds additional information on nest location that complements details on the card (Figure 46).

Figure 46. The print attached to the card for this Osprey nest gives a much clearer impression of the exact structure and placement of the nest. Vernon, BC. 8 July 2009 (Lloyd Atkins).

Since 2004, **Cyril Colonel** has supplied BCNRS with a comprehensive photo-catalogue of nesting **Ospreys**, **Red-tailed Hawks**, **Bald Eagles**, and **Great Horned Owls** in the Creston valley. Once again, he added to his photo-catalogue in 2009 (Figure 47).

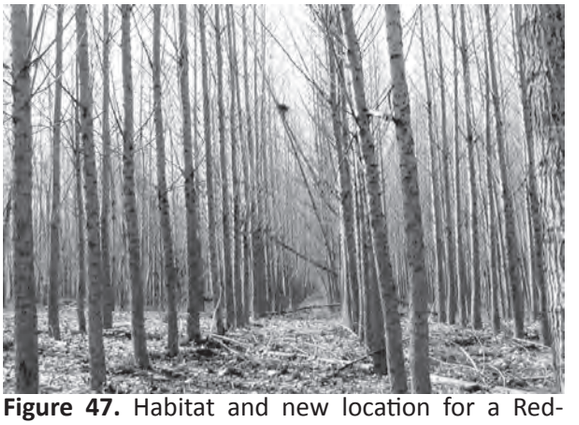


Figure 47. Habitat and new location for a Red-tailed Hawk nest in a poplar grove in the Creston valley taken from the photo-catalogue prepared each year by Cyril Colonel.

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

Diagrams

Simple diagrams, detailed maps, and hand sketches added directly on nest cards, or attached by staple and cut to size (4" x 6"), can be very helpful for future reference (Figure 48). This is especially useful in establishing the specific location of a nest site for an area not in the British Columbia gazetteer of place names. *Rose's Pond* near Vernon, *Matty's Point* on Passage Island, *Salt Lake* near Green Lake, *Dowitcher Pond* near Maple Ridge, "Grackle Marsh" near Rolla, and *Sora Meadows* near Swan Lake are a few examples.

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. Each year an increasing number of cards have repeat visits. A few people followed raptor nests, notably **Osprey**, from start to end and submitted a "notebook" of information for the nest.

Ben van Drimmelen was fortunate to have a pair of **Downy Woodpeckers** nest in his backyard in **Victoria** (Figure 49). He watched the pair daily, from tapping on trees and excavating to fledging. He submitted 187 observations between 19 April and 24 June to accompany his nest card! Here are some of the highlights.

April 19 *- Two adult tapping branch of apple tree, circling branch. Began to make nest cavity.*

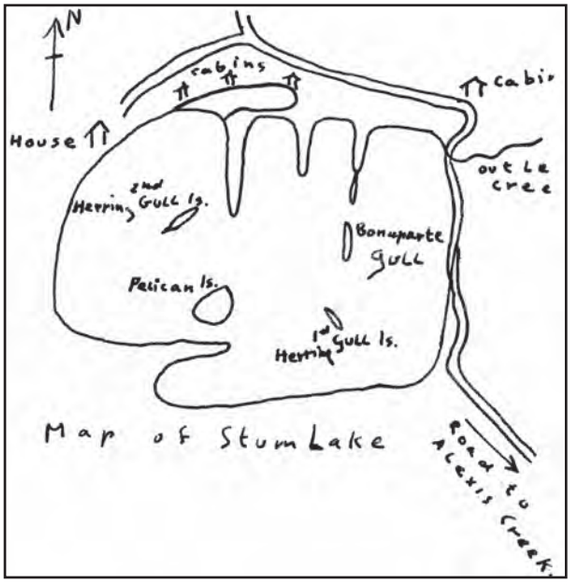
April 21 *- Male still working on cavity. Considerable progress; can now put his head inside the cavity.*

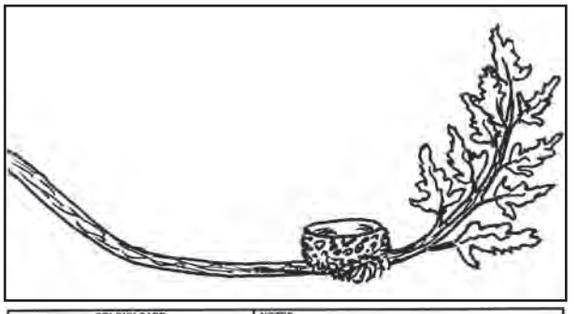
April 24 *- Male working on cavity. Cavity is now 7 cm deep.*

April 27 *- Female working on cavity. Cavity depth approximately 10 cm deep.*

May 2 *- Male working on cavity. Can go in so only base of tail and tail visible outside.*

May 16 *- Female inside, throwing out sawdust,*





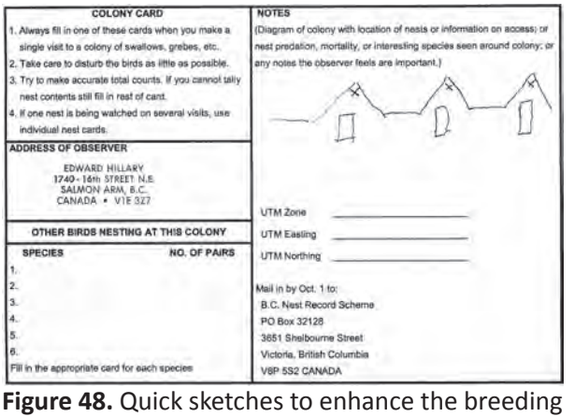


Figure 48. Quick sketches to enhance the breeding information on a nest card can be very helpful. **Gerry Van Tets** produced a sketch of the general layout of islands, structures, creeks, and species breeding sites during a visit to the American White Pelican colony at **Stum Lake** (top); **Glenn Ryder** added a sketch of the location of a Rufous Hummingbird nest on a Western Redcedar bough in **Langley** (middle); and **Ted Hillary** noted the location of three sub-colonies of Cliff Swallows nesting at **Salmon Arm** (bottom).

Figure 49. Ben van Drimmelen, a retired provincial biologist, provided new information on the breeding biology for a pair of Downy Woodpeckers that nested in his backyard in Victoria, BC. in 2009. The nest was excavated in the dead limb of an old apple tree.

chittering to herself, more tapping.

***May 19** - Male throwing out sawdust.*

***May 20** - One adult emerges, the other enters nest (shift change?).*

***June 1** - Male outside of cavity, chasing house sparrows.*

***June 13** - Two-hour stake-out begins. Young can be heard from 10 metres away. No adult activity.*

***June 17** - Female returns with food five times. Male not seen. Young in cavity are loudly squeaking, 5 calls per second. Estimate more than two young inside, but have no equipment to observe inside nest.*

***June 21** - Male returns with food. One young visible at cavity entrance - the head appears to be full adult size.*

***June 24** - Nest quiet; young fledged, presumably.*

Ben's Downy Woodpeckers took about 31 days to fully excavate their nest cavity in the dead branch of an apple tree, which is longer than the reported time of about two weeks. It took at least another two to three weeks to lay their eggs and incubate and by June 24 at least two young fledged.

Repeat visits, are especially useful when clutch and brood sizes have to be determined. Usually 3 to 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 breeding sites that are used in consecutive years, such as birds of prey, colonial-nesting herons (Figure 50), swallows, swifts, some waterbirds, colonial marine birds, American Dippers, and loons, may or may not be utilized. If these sites are visited, and the expected 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.

Figure 50. A nest card was completed for this Great Blue Heron colony near Cherry Creek, BC., even though it was not active in 2009. A close inspection of the nests, however, revealed a brood of Great Horned Owl nestlings (R. Wayne Campbell).

These "negative cards" are very helpful when interpreting changes in local breeding distribution, effects of weather and human disturbance on breeding activities, loss of habitat, and perhaps the impact of environmental contaminants such as oil spills and chemical contamination.

Vicky and **Lloyd Atkins** continue to submit their "**Negative Records**" each year. This year they provided four pages of such information with comments for 106 nest sites of 23 different species. For example, during their annual monitoring of **Western Kingbird** nests (Figure 51), they completed information for eight nests that were missing from sites recorded in 2008.

Figure 51. Although this known nest site of Western Kingbirds contained five well-grown nestlings, other expected nest sites were not used in 2009 but information was still recorded. The latter sites are not included in Vicky and Lloyd's annual tally. Vernon, BC. 30 June 2009 (Vicky Atkins).

Four other examples of people sending in useful negative information for 2009 follow. **Willie Haras**, refering to **Common Loon**, mentioned "*young just days old. Haven't seen a chick on Lac Du Bois since 2001*." At Salmon Arm, **Ted Hillary** watched a **Bald Eagle** nest all summer and reported "*This nest had no young and probably no eggs. The pair were near the nest all summmer, but it may be that they are getting too old to have young. Probably the same pair have been using the same nesting site for many years*." Some people, when finding a nest with broken eggs, do not complete a nest card because they consider the record of "little value." Not **Ronda Karliukson** who found a **Mallard** nest with six broken eggs and added the following notes "*Coyote scat located ajacent to broken eggs. Very recent flies on scat and eggs*." **Kevin Atkins** completed a card for an **American Robin** nest found in sucker growth on a tree trunk in Vancouver. He found the nest on 5 June and an adult was still incubating on 10 June. From 11 to 14 June the nest was inactive.

It would also be helpful to record **Canada Goose** activity at **Osprey** nests even though nest contents cannot be determined. Repeat visits, spaced days apart, may suggest occupancy of the site by geese.

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

There is no doubt that people are passionate about wildlife and become especially observant and caring when events happen close to home. Further afield, their experience continues but at a different level.

This season's stories include reports on love, birding fun, yard birds, sharing accomodations, nest failure, a roof over my head, recyling, junco work ethic, road USOs (Unidentified Sitting Objects), cowbirds, swallow troubles, mobile home, avian mysteries, flying food, and wet binoculars.

Read on - the events are sure diverse!

Looking for Love

Last season, **Patricia Huet** from **Canyon** wrote a story about her bachelor **House Wren**. He returned in 2009, but did he attract the love of his life? Read on!

"*House wrens are extremely uncommon in the Creston Valley, and very few nests have been observed here. I didn't realize this when in 2008 I saw a male singing on a shrub along our access road. He eventually built a nest in one of my nest boxes near his singing post. A female did not appear, and he finally gave up.*

This year [2009]*, early in the morning on May 27, I was very pleased to hear him singing on our balcony rail. He began building in one of the nest boxes there, but I suspect he didn't like all the human observation, and decided to try another box on our garden fence* [Figure 52]*. He worked many hours and built a lovely nest in this one (if a big wad of twigs is lovely). He sang very loudly and continuously, but still no mate appeared. He disappeared June 13, maybe to seek females elsewhere.*

I watched him carry twigs to the box, and wondered how he got the long ones in. Then I saw him turn his head, stick one end into the hole and in it went. I thought it would be interesting to see how many twigs he put in the box, so I took the nest out this winter and counted them all - 376 twigs! [Figure 53] *I suspect some had broken getting them into the box, so it is likely he didn't make this many trips, but I think most of them were carried one by one. The longest stick was 240 mm (9 ½ inches) and the shortest 9 mm (1/3 inch). The thinnest one was less than 1 mm (0.04 inch), and the thickest 4 mm (0.16 inch). I randomly picked up 20 twigs, and they had an average length of 73 mm (3 inches). Thus, they are very small twigs.*

I checked last year's box, and the twigs seemed to be of similar width and length, but there was less variety in the building materials. Although most of the twigs in this year's box were unrecognizable, there seemed to be a good variety. I did see twigs from my shrub roses and the big larch in our yard, and one pine needle cluster. That he had more to choose from in our yard isn't surprising, as it is designed for birds and is rather messy.

I really hope he appears next year, preferably with a female in tow! I would miss his beautiful song."

Figure 52. Pat Huet took this photograph of the nest box long after the departure of the House Wren.

Figure 53. Pat's biological curiosity clicked in and she just had to learn a little more about her nest-building House Wren. How many twigs did her bachelor use in an attempt to woo a mate? She counted all 376 of them!

A familiar song, unmistakable plumage, and suspicious nesting behaviour - could it be?

Gary Davidson of **Nakusp** writes: "*I would rate today (12 July 2009) as one of the highlights of my birding time in Nakusp, (34years). About 10 years ago, I discovered Magnolia Warblers at Summit Lake. This is considerably further south than their known breeding range. Each year I visit the area; I try to determine the territories and then return in early July looking for breeding evidence. Despite my efforts, I have not been able to confirm breeding. In fact, I have never even seen a female!! Today I was*

up there again, still trying. The area is largely open and covered with a thick layer of thimbleberry and bracken ferns adjacent to an open mixed forest. By all reports, preferred nests sites are in dense young conifers, (all of the nests found in the Golden area have been in dense young spruce). Despite much searching, I could find no "suitable" habitat. So I just kept following the singing male hoping he would show me something! At one point I was fighting my way through the thick thimbleberry/fern tangles when all of a sudden a female Magnolia appeared in front of me. She remained very low to the ground and skulked around me for 20 minutes. She was rarely out of sight, (although it was often just moving ferns that gave away her location), most of the time she was no more then 2 or 3 meters away. At one point I noticed that there was a second bird in the thickets. At first I thought it might be a fledged juv, but it was the adult male. He joined the female for 5 minutes and the pair moved around together in the bushes near the ground. He left and I remained with her. About 30 minutes after I arrived, the female was suddenly stationary in a thimbleberry bush about 5 metres in front of me. I then realized she was sitting, I had a nest!! [Figure 54] *After 10 years of looking, I had confirmed breeding. The nest was about 30cm above the ground in a thimbleberry bush. It contained 3 eggs. Wow, what else can I say!"*

Figure 54. This Magnolia Warbler nest with three eggs is a significant southward range extension for British Columbia. Summit Lake, BC. 12 July 2009 (Gary S. Davidson).

One in a Lifetime Chance

Gary Breault spends as much time as he can watching and photographing wildlife. On very rare occasions, as we all know, natural events, like predation, happen so quickly it is over before much can be seen. To have a camera in hand and capture the moment (Figure 55) is almost unique.

Figure 55. Some days it dosen't pay to leave the nest and with its fate sealed, this juvenile Northern Flicker was pinned to the ground by an adult Cooper's Hawk. Lister, BC. 9 July 2009 (Gary Breault)

Some Nesting Season Memories From the Sunshine Coast

We appreciated hearing from **Robert W. Allen** in **Sechelt** who had quite a summer of nesting experiences. He wrote: "*Our 2009 nesting season unfortunately wasn't the best.*

The pacific slope flycatcher did nest again on the property but in a different location on a different building. It was in a location quite vulnerable to predation by crows, etc. so I put a make shift wire screen in front of it [Figure 56] *and that didn't seem to cause any problems for the flycatcher. I first noticed the nest in early June and by 04 June there were four eggs in the nest and by 20 June two babies were born. On 24 June, there were still the two babies and two unhatched eggs in the nest. On 26 June I found the two babies dead on the ground below the nest and the two unhatched eggs still in the nest and unfortunately I did not see the flycatcher after that.*

Figure 56. Robert Allen hung this protective screening around a nesting Pacific-slope Flycatcher in his yard to discourage predators. Sechelt, BC.13 June 2009.

There was a robin's nest started on the nesting platform used by the flycatcher in 2008 but they soon abandoned it, maybe for our neighbour's carport where they have nested before and did nest again this year. Those robins raised two families in May and June. I was not able to get an accurate count of them.

On our Skylark Road property, we did have one family of mallards, a hen and seven babies, but they didn't show up on the pond until 13 June, quite late as by then the water in our pond had nearly dried up. They only lasted about a week and by 21 June they were all gone. On the same property, one family of five chestnut back chickadees was raised in one of my nest boxes but as I wasn't there enough I didn't see much of them but I am sure the all fledged. On 22 June, I also found a spotted towhee nest well hidden under some brambles on the ground in a small ditch and I observed it on occasion. There were four eggs and by 28 June there were two babies and two eggs. Unfortunately, by 01 July something had found the nest and it was destroyed and there was no evidence of the babies or the eggs. I also found a robin's nest on the same property on 10 June and it had four babies in it. When I next checked it on 21 June, they were all gone and I am sure they fledged okay.

On another property closer to home, I found a killdeer nest on 16 April that someone else had previously marked and in it were four eggs [Figure 57]. *By 29 April, there were two babies and two eggs. When I went back on 01 May to check again, the entire nest had been destroyed by some two-legged mental midgets. I sure wish I knew who they were."*

Figure 57. Someone had good intentions by staking out the location of this Killdeer nest but it also drew the attention of vandals. Killdeer are naturally skillful at luring predators away from their open nests. 16 April 2009 Sechelt (Robert W. Allen).

Communal Living Arrangement

Wayne and **Veronica Psotka** were amazed to find not one, but two **American Robin** nests built on a support beam under the deck of their cabin on the **Shuswap Lake** during the month of May. The nests (Figure 58) were spaced only four feet apart, and the wooden joists divided the space, providing some privacy for each family. The two couples exhibited tolerance of each other as they took on their parental duties, successfully rearing the young to fledging.

Figure 58. It is unusual to see two individual pairs of American Robins nesting this close to each other. Shuswap Lake, 18 August 2009 (Mark Nyhof).

Second Nest Failure for the Fraser Vista Eagles

Last year we heard from **Bonnie Hooge** who lives along the Fraser River across from the community of **Shelley** when she described the loss of a **Bald Eagle's** nest. Here's what she had to say on June 4th of this season:

"*I think it was the same week last year that I reported on the eagle's nest tree falling in the Fraser River in my neighbourhood. Well, we were pleased to see the eagles tending a new nest slightly upriver of the old one. While skiing on the river in March we had noticed lots of sticks on the ground/ river surface in the vicinity of this tree and hoped that this meant a new nest under construction. This new nest was great for spying on as it had no big branches in the way and was really nicely lit in the evenings. Yesterday Craig paddled over to inspect the new 'neighbours' and reported that this tree was also doomed. He thought it would last another couple weeks or so with the water really starting to move now. Sadly, he just phoned to say that the tree just fell in again, broke up and floated away and both eagles are now flying around upset again (so are we!) Bummer! We had just ordered a new spotting scope anticipating some great nursery views! Hope they try again but not sure if they are smart enough to inspect the rooting system and its proximity to the bank.*"

Winter for Feeding and Summer for Nesting

Patricia Huet from **Canyon** writes: "*Robins are very common in the Creston Valley, and they often pick unusual spots to place their nests. In mid-May, I noticed a robin building a nest in an old feeder on a fence post in our yard* [Figure 59]. *On May 27, she had three eggs in the nest, and on June 4 there were three young starting to get quills. By June 9, they were well feathered. The next time I checked the nest, on June 18, they had fledged.*

Last year, Creston Valley resident Ed McMackin had a robin build a nest in a feeder as well. As with his situation, my female usually flew off her nest any time we came near it, which was fairly often, as I had to go through the nearby gate to tend to our new trees. Although I was skeptical about whether the nest would be successful with dogs and Red Squirrels having easy access, the parents had put some thought into using the feeder for their home. It was protected from rain, and the partition down the center sheltered it from wind. Amazingly, neither dogs nor squirrels found the nest. It wouldn't surprise me to find them nesting there next year."

Figure 59. Male American Robin on "incubation" duty under the sheltered roof of a bird feeder. Canyon, BC. 6 June 2009 (Patricia Huet).

Birds Do It - Recycling That Is!

Quentin Brown writes from **North Vancouver** in early May: "*I contemplated cleaning fluff that had accumulated on the concrete under the exhaust vent from the dryer. As I thought about a task that I rate on par with counting starlings on a Christmas bird count, I noticed a female Rufous Hummingbird hopping along the concrete, collecting fluff and flying off, perhaps to a nest. After watching the hummingbird fly back and forth I decided my cleaning could once again be postponed*."

The Industrious Junco

Lee Foster writes: "*I located a Dark-eyed Junco nest in my yard near the start of June at* ***Cluculz Lake****. My yard is partially treed with conifers and I have left portions in their natural state due to the abundance of wild flowers. I spotted this nest when the female flushed and observed 3 eggs. I naturally assumed there would be a couple more eggs however the next day to my surprise they all hatched out. I did not record the exact number of days but within 10-11 days they were fluttering out of the nest before they could fly. I observed them around the yard encouraging their parents to bring*

them more food. Two days after leaving the nest I observed another Junco very close to the nest with nesting material in its mouth. I made a mental note to keep an eye out for another nest in this area. Wondering but not believing that this could be the same couple that had several youngsters just learning to fly. Last week I found the second Junco nest only 7 feet from the first one. The young had just hatched and there were 5 nestlings this time. They were just starting the downy phase and at that fragile stage when we had the heaviest rain of the year where it was cool and rained all night. I was expecting that we would see some mortality in the morning however they were all alive and well with the parents busily bringing them in their breakfast. I believe that there is a high probability that this is the same couple and with this type of work ethic it is easy to see why their population is healthy.

Perhaps we should change the title on this highly energetic bird to the BC Interiors sexiest bird. Just a little update here the 5 young in the nest fluttered out on Saturday ready to meet the world. Amidst feedings I heard the male singing around his territory which is our backyard. I thought surely the breeding season is finished for that productive pair and they would be satisfied with the 8 youngsters they had raised thus far. However today [13 July] we witnessed them breeding again within 10 feet of their last nest. I will advise if I find their third nest, if in fact they do follow through with another complete round. It appears that the summer vacation may have not yet started for this amorous couple.

I just found the 3rd nest of the year for a Dark Eyed Junco pair [7 August]. This nest was 4 feet from nest number two and about 6 feet from number 1. I thought the mid- July breeding antics were more wishful thinking than anything, however they proved me wrong. Unfortunately I did not find the nest until 3 days ago and at that time it only had one fully fledged youngster in the nest and one infertile egg which had been rolled a few inches away from the nest. The youngster left the nest today. I am wondering now if it is possible that this could be nest number 4 for the year as what I thought was nest #1 had incubation start around May 22. At the rate that this couple is churning out youngsters they could have easily started another nest around April 20th of this year making this 4 nests in a year. I will pay more attention to this favoured site of theirs which I would presume they will use again next year. Any thoughts from the experts out there on 4 nests for the year possibility? I personally did not think it would be possible however they appear very efficient in the use of their time with one of the adults incubating the eggs, while the other escorts and feeds the previous batch."

USOs (Unidentified Sitting Objects) on the Road?

Linda Van Damme from **Creston** writes: "*While driving along a dirt road en route to Duck Lake in the Creston valley, I saw a dark lump in the centre of the roadway. Thinking it might be a big toad, I slowed down. When I came to a stop and looked out my driver's window, I saw it was a feathered lump. I moved the vehicle away and approached on foot. The young bird started to peep, it was a Black-headed Grosbeak fledgling* [Figure 60]*. I picked it up and could see it was unharmed. Another vehicle was quickly travelling down the road, so I wanted to get the fledgling to a safer place among the roadside shrubs. The parents would find it when it got hungry and started calling for food."*

Figure 60. At least a week out of the nest and not ready to be on its own, this fledgling Black-headed Grosbeak was found in the middle of a roadway. Creston, BC. 20 July 2009 (Linda M. Van Damme).

Only Nature Knows

Gary Clarke-Marlow of **Quesnel** discovered that not all birds are successful in raising their young. On June 29th, he observed a Pacific-slope Flycatcher with nesting material. The birds built a nest above the entrance to his house. By July 27th they were

busy feeding three young. Pictures were taken through a window and as the young flycatchers got larger, Gary stopped using the front door access. On August 3rd the three feathered young looked close to fledging as seen in Figure 61. However, soon after this photo was taken the adults abandoned their young and all perished.

In some cases adults abandon seemingly healthy nestlings but research has shown they frequently carry a heavy load of internal parasites that the parents seem to be aware of. But only Nature knows for sure.

Figure 61. Three large Pacific-slope Flycatcher nestlings were close to fledging when they were abandoned by the adults. Quesnel, 3 August 2009 (Gary Clarke-Marlow).

No Need to Crane Your Neck to See These Birds

Doug Leighton writes from **Golden**: "*In the wonderful world of "habituation" (intelligent learning), the cranes* [Sandhill Crane] *have now discovered our front yard* [Figure 62]. *They have been using our neighbour's grazed pasture out front increasingly for the past three years - feeding on grasshoppers and flipping cow pies for insects - and they finally ignored our house and crossed the fence. After first investigating it - the far edge - they came back for four days in a row - sometimes twice in one day - to eat Saskatoon berries and dig up something (???), for up to two hours. Since our field is an ungrazed, uncompressed (by cows) habitat, and unique around here, I expect they will now seasonally use it every year.*

They have two young but its hard to get them all in the same photo at once since the usual pattern is for one young to be with one adult, and they are usually separated a little (did get photos of them all but only 'record' shots, and didn't try too hard as didn't want to disturb them). And this photo could be sharper but it was taken through the front window. We had to curtail our outside activities while they were here to let them use the yard but by the last two days they didn't seem to mind us as long as we stayed by the house. They came to within 20 meters of the front lawn, and to within about 50 meters of the house at some points! Was very interesting to get to watch them for so long! Very intelligent and aware birds.

They kept coming back... on nine days total, from July 30 to Aug 17, twice per day on at least two days, and probably more. So got to watch the young grow. The last day here was the first time I saw the young fly, after which they left the area almost immediately and sooner than usual. It was, all in all, a fantastic year for crane viewing! (Including watching one get a Sora at ridiculously close range.) I am 95% sure they nested in our wetland this year but never go looking for their actual nests.

As for this habituation theme... The first year these birds were here - and I assume that one has been coming back since the beginning - they were super shy and would fly when they saw you 500 meters away. Every year they get more tolerant as they learned the layout. First saw one in the neighbour's field out front (but not in view of the house) three summers ago, the pair fed frequently in late summer two summers ago (no young last year), and this past summer they were feeding there frequently for about a week (with young) before they crossed the fence to our side.

The net effect is that this learning allows them to use more habitat - and everybody around here is very aware of them and loves them so that works.

And there is a little more to this story which makes me happy. Starting last year started clearing a line of trees along our fenceline between our neighbour's field and our meadow, in order to make it effectively an extension of that much larger open area (an ongoing project). So far that has presumably helped the cranes visit plus had a harrier and a short-eared owl too. The harrier was hovering over the lawn at one point!"

Figure 62. It's a rare opportunity to watch Sandhill Cranes from the comfort of one's own home. Blaeberry River valley, BC. 31 July 2009 (Douglas Leighton).

Forget The Birds - A Snort Was Suddenly More Important

Bob Steventon writes from **Prince George**: "*Would a Warbling Vireo abandon a nest in response to a Cowbird laying an egg in the nest?*

On Saturday, July 4th I looked up and noticed what I think is a Warbling Vireo nest close to our greenhouse. It looks a lot like the nest that was located over our driveway a couple of years ago as well as a photo in The Birds of BC. It is 8 - 9' up in a crotch in an offshoot growing from the base of a larger birch. I was able to use a step ladder to peer into the nest. There were three eggs on Saturday-- one of which looks like a cowbird egg -- larger and much more heavily marked than the other two. I have been watching the nest on and off and have seen no activity at all. I got the step ladder out again this morning [July 6th] and there are still three eggs in the nest. We do have Warbling Vireos around since I can hear them calling now and then. I watched the eggs for a while and they did disappear -- first one, then all were gone.

When I spotted the nest, I decided to put a chair some distance from the nest so I could watch for the bird (which never came) without disturbing it. I got a chair and began walking backwards towards a path we keep clear in the deep grass. I thought I'd sit beside a patch of willows at a corner in the path. As I advanced backwards I heard a loud snort. I turned to find a young bull moose lounging at the end of the path about twenty feet behind me [Figure 63]. *It was a bright hot sunny day and he was enjoying the shade. I retreated but was able to watch him continue to lounge and nibble at the surrounding shrubs and weeds. He remained for quite a while and let me take his photo. (... and I have another story about this same moose a few weeks later when he browsed his way right into a Bald-faced Hornet nest. Who knew moose could move so fast?)."*

Figure 63. Young bull Moose lounging in Bob Steventon's yard in Prince George, BC. 4 July 2009.

Life, Drama, and a Biologist

Biologist **Patricia Huet** writes about her swallow dilemma: *"The Tree Swallows arrived at our place toward the end of April. I first noticed a male on a nest box on our balcony rail that had been occupied last year. He waited for a few days, sitting near the box and defending it from other swallows. Finally his mate showed up, and she didn't take long to start nest building. The nest was nearly complete May 15. She had five eggs by May 24, and five young were in the box at the beginning of June. The young were doing really well, with open eyes and feathers growing by June 18.*

A few days later, I happened to be checking other nest boxes fairly far from the house, when I heard all of the swallows in the neighborhood calling. I looked toward the house, and saw an American Kestrel flying away with something in its talons and being chased by 8 or 10 swallows. Most of them gave up, but one kept following until I lost sight of them.

I kept an eye on all my boxes, and soon realized only the male was left of the pair on the balcony.

He sat on the balcony rail singing for a day or two, obviously moping and in distress. He seemed uninterested in his offspring, and they started dying one by one. I removed dead ones until there was only one left. Finally he seemed to rouse himself and took up parental duties.

He eventually fledged his one remaining offspring. But for the two weeks until the youngster left the nest, it seemed like he blamed me for his loss. Every time I went outside, he started dive-bombing me, clicking and chittering. Even on the other side of the house or a hundred metres away he did this. I tried changing hats, no luck. He was totally uninterested in my husband or the dogs, just me. This got to be pretty annoying, so I was very happy when he left the area. Although I am trained as a biologist, no one can tell me birds don't experience grief or anger."

Mobile Boathouse for a Land Breeder

"*On August 21* ***Mark Nyhof,*** *while crossing the* ***Upper Arrow Lake*** *on the DEV GALENA ferry from Shelter Bay to Galena, noticed an active Barn Swallow nest placed on a pipe above the car deck of the ferry* [Figure 64]. *This ferry is active from 5:00 AM to midnight. The adults were flying with the ferry as it travelled back and forth across the lake. The nest contained two young. There was another nest nearby that was probably an earlier 2009 nest. There is a second ferry that shares the same route. From a distance it appeared that there was an active nest on that ferry as well."*

Footnote: We first reported on this unusual choice of nesting sites in our 48th annual report in 2002, so it's encouraging to know the swallows are still successfully raising their families aboard their "mobile home."

Unsolved Mystery

Marlene Johnston *from* ***Lardeau*** *writes on 28 July: "A couple weeks ago we came across a Spotted Sandpiper nest on a rock bluff above Kootenay Lake. There were 4 eggs in the nest* [Figure 65] *and the adult had flown away. Yesterday morning we went to see how things were and found only one egg in the nest and it is cracked. There were no young or adults nearby but closer to the sandy beach area there were 3 sandpipers, all of whom were flying*

Figure 64. Barn Swallow parents must travel back and forth several times a day to feed their young aboard this British Columbia ferry. Upper Arrow Lake, 21 August 2009 (Mark Nyhof).

(so I doubted that it was the same family).

I've attached 3 photos since I thought it was odd that the nest would be located on a rock bluff. In Lardeau, we've always seen the nests in sandy/ grassy areas. In "nest on rock bank" image, with Joe as reference, the nest is located at the bottom of an approximate 15 inch vertical stick. Nest with stick shows that the nest is located at the bottom of the stick. Third image shows the single egg in the nest.

I was wondering how common it is for Spotted Sandpipers to build nests in this type of location. This year it seemed to me that the spotties are adapting to the increased human, dog, and ATV presence along the Lardeau shoreline. I've a photo

Figure 65. Joe Johnston looking down at Spotted Sandpiper nest on rock bluff. Lardeau, BC. 27 July 2009 (Marlene Johnston).

of one perched on the power wire, perched on some yard debris on our picnic table, and of a recently fledged one in our yard (no adult came near).”

Maternal Instinct? Not With These Swallows

Phyllis Masson from **Nanaimo** writes on 20 June: “*I contacted you last year [2008] regarding the second year of Barn Swallows to nest in our back porch here in Nanaimo and that they had two successful nestings that year. We are concerned this year as a pair of Barn Swallows returned mid April & appeared to have taken over the nest. The reason we are concerned is that they haven’t been ‘consistently’ on the nest. They have been showing up in the evenings/overnight; they haven’t been ‘chattering’ as they have in the past. A few days ago we were so concerned my husband checked the nest with a mirror whilst I kept a look out, just in case! There are 5 eggs in the nest. Since then we have not had a bird nest-sitting and only the odd swallow ‘fly-by’ the house. Actually, we have seen very few (if any) Barn Swallows in our valley and at our golf course in Chemainus I’ve really only seen Tree Swallows. There also seems to be less “bugs” around.*

By this time in 2007 and 2008 the first nesting would have hatched and have taken flight. Last year the second nesting would be starting in July. Finally, after a couple of weeks we removed the “old” eggs and a pair came visiting but nothing resulted. It was so stressful this time that we have actually removed the nest and are making a ‘ledge’ in a more private area we hope they will use. If they insist on rebuilding in the same place [in 2010] we won’t deter them.”

Rainy Days and Mondays Never Get Me Down

Linda Van Damme writes from **Creston**: “*It was a stormy day in June with rain, thunder, and lightning but since I have good rain gear I was “out there” knowing few others would be crazy enough, and I was right, I had the whole wet world to myself. As I was walking, my eye caught movement in the cottonwood understory and when I turned for a better look, I saw a wren feeding a young bird which was begging and wing-flicking. Immediately I thought ‘great -- I got a winter wren breeding record’ but then my mind focused and noted that the tail was too long. The birds disappeared into the underbrush. I knew I had seen something different so I walked back to my truck to get my camera which I normally don’t like to have out in the rain. Due to the gloomy day I had to re-adjust all the settings then tucked the camera inside my raincoat and headed back. I did the ‘ol birder’s trick of “pishing”and out popped an adult Bewick’s Wren* [Figure 66] *giving me time for a few quick clicks. I returned the next day and saw nothing, so moved to a nearby area where I caught a fleeting glimpse of a wren scurrying along a fallen tree. I sat on a rotted, rain-soaked log close to the ground hoping for another glimpse of the perky little wren. Out of my peripheral vision I saw movement and ever so slowly turned my head in time to see a young fledgling hopping along the log I was sitting on. The yellow gape was apparent and the bird still had downy tufts on its head. Over the summer months on rare occasions, I would encounter the wren family but only fleeting glimpses. This experience was the highlight of my summer!”*

Figure 66. A Bewick’s Wren poses briefly before continuing with its parental duties. Creston, BC. 22 June 2009 (Linda M. Van Damme).

Pioneering Rough-wings

Anna Rose writes from **Grey Creek** along Kootenay Lake where a pair of Northern Rough-winged Swallows chose an unusual location to build their nest (Figure 67): “*I’ll describe the surroundings of the nest site. My house is about 150 m east of the lake (and the highway which is very close to the shoreline here), with a small creek in the forested area about 100 m north. The “yard” is made up of three houses on about 15 acres of*

gentle hillside, with a large vegetable garden, a couple open "meadows", six large walnut trees, an old apple orchard, a few smaller fruit trees, and miscellaneous shrubs and flowers. Around the edges is mixed forest including fir, cedar, larch, birch and cottonwood. The "porch" (open on two sides) is a sheltered, shady spot. The ledge the swallows nested on is a wooden shelf about 18" deep, up against the house and under the porch rafters. The particular section they used is about 18" wide and 5" high. There are no cats or even dogs on the property. Squirrel activity on, in and around my house is low in summer. (It's another story in fall). Resident birds, frequently seen around the porch feeders at the same time as the swallows nested were black-capped chickadees, rufous hummingbirds and a family of song sparrows. The swallow's nesting material seemed to include a high proportion of last year's stems from the black walnut leaves. They are about 8" long, curved, and fairly soft, certainly plentiful. I didn't see what they were eating. We don't have many mosquitoes here.

A few more details about the behaviour of the swallows: the pair would often sit for a long time (in the order of 20 minutes, which seemed long to me compared to my other birds) on that wire about 6' out from the corner of the house. Human activity didn't bother them while in the nest-building period. When they were bringing food (both parents did), they were a little nervous if I was sitting at the picnic table under the nest. They'd come in close to the nest then leave right away without landing. (So I'd move off the porch). On the couple of occasions on and after July 19th, the nestlings would grow quiet if I stood on a stepstool to try to see them. The flying practice, on the 28th was something to watch. It seemed all the birds would fly a circuit of the front yard then rest on either the wire at the porch corner of the house or another wire towards the back of the house. It was like musical chairs, so I wasn't sure if there were 4 or 5 young, plus the two parents. I think it was in the evening of that same day that I was sitting on the porch and watching the young trying to fly back into the nest section of the ledge. They didn't all fit, as they were nearly the same size as the parents by then, and pretty active.

I'd like to see the swallows again. Maybe the young will build nests in other sections of the same ledge, in a little colony. That would be fun to watch. I'd thought once about removing that ledge (it doesn't seem to have a structural purpose), but I won't now. In winter, the chickadees love to fly there to peck open the sunflower seeds they take from the feeder."

Figure 67. Wooden shelf under Anna Rose's porch where a pair of Northern Rough-winged Swallows raised their family. Grey Creek, BC.

Perfect Timing

Cathy Keller from **Quesnel** wrote: " Guess who George found [Figure 68]?? He was in a rain bucket, probably fell out of his nest, and his mom was squawking like crazy. George put him on the shed roof and mama was right there for him.... happy ending for both."

Figure 68. Fledged American Robin rescued from a rain bucket and handed over to its mom who was waiting nearby. Quesnel, BC. 1 July 2009 (Cathy Keller).

List of Species with Total Breeding Records by Family

Family Anatidae - Geese, Swans, and Ducks (3,006): Canada Goose - 815 (Figure 69), Mute Swan - 8, Trumpeter Swan - 8, Wood Duck - 143, Gadwall - 32, American Wigeon - 145, Mallard - 456, Blue-winged Teal - 55, Cinnamon Teal - 9, Northern Shoveler - 37, Northern Pintail - 42, Green-winged Teal - 66, Canvasback - 93, Redhead - 54, Ring-necked Duck - 70, Lesser Scaup - 86, Harlequin Duck - 7, White-winged Scoter - 2, Bufflehead - 207, Common Goldeneye - 60, Barrow's Goldeneye - 284, Hooded Merganser - 39, Common Merganser - 109, Red-breasted Merganser - 2, and Ruddy Duck - 177.

Figure 69. Despite their size, Canada Geese breeding in sedge marshes in British Columbia can be overlooked when they hunker down on their nests and become almost invisible. Near Mackenzie, BC. 16 May 2009 (Vi and John Lambie).

Family Phasianidae - Partridges, Pheasant, Grouse, Ptarmigan, and Turkey (240): Chukar - 6, Gray Partridge - 1, Ring-necked Pheasant - 19, Ruffed Grouse - 90, Spruce Grouse - 29 (Figure 70), Willow Ptarmigan - 3, Rock Ptarmigan - 4, White-tailed Ptarmigan - 40, Dusky Grouse - 11, Sooty Grouse - 27, Sharp-tailed Grouse - 3, and Wild Turkey - 7.

Family Odontophoridae - American Quail (57): California Quail - 57.

Family Gaviidae - Loons (115): Common Loon - 115.

Figure 70. This Spruce Grouse chick, less than a week old, was photographed between Sukunka River and Bullmoose Mountain in northeastern British Columbia. 17 July 2009 (Mark Phinney).

Family Podicipedidae - Grebes (1,942): Pied-billed Grebe - 103, Horned Grebe - 35, Red-necked Grebe - 309 (Figure 71), Eared Grebe - 1,415, Western Grebe - 66, and Clark's Grebe - 14.

Figure 71. In some parts of British Columbia, the Red-necked Grebe takes advantage of fallen and submerged branches on which to build its nest. Near Mackenzie, BC. 14 June 2009 (Vi and John Lambie).

Family Hydrobatidae - Storm-Petrels (84): Fork-tailed Storm-Petrel - 52 and Leach's Storm-Petrel - 32.

Family Pelecanidae - Pelicans (1): American White Pelican - 1.

Family Phalacrocoracidae - Cormorants (717): Brandt's Cormorant - 1, Double-crested Cormorant - 137, and Pelagic Cormorant - 579.

Family Ardeidae - Bitterns, Herons, Egrets, and Night-Herons (247): American Bittern - 12, Great Blue Heron - 233, and Green Heron - 2.

Family Cathartidae - Vultures (6): Turkey Vulture - 6.

Family Accipitridae - Osprey, Kites, Eagles, Hawks, and Allies (381): Osprey - 193, Bald Eagle - 97, Northern Harrier - 7, Cooper's Hawk - 14, Northern Goshawk - 2, Swainson's Hawk - 3, Red-tailed Hawk - 60 (Figure 72), and Golden Eagle - 5.

Figure 72. It isn't often a Red-tailed Hawk nest can be found where an adjacent path will allow a good view of its contents. Recording such nests with photographs also helps with estimating the ages of the nestlings. Coldstream, BC, 22 March 2009 (Gary Beals).

Family Falconidae - Falcons (52): American Kestrel - 21, Merlin - 7, Gyrfalcon - 1, Peregrine Falcon - 22, and Prairie Falcon - 1.

Family Rallidae - Rails, Gallinules, and Coots (909): Virginia Rail - 9, Sora - 39, and American Coot - 861.

Family Gruidae - Cranes (26): Sandhill Crane - 26.

Family Charadriidae - Plovers (134): Semipalmated Plover - 2 and Killdeer - 132 (Figure 73).

Figure 73. Nest cards with accompanying prints or photographs are helpful in determining the precise first half of the breeding period for this family of Killdeers. Vancouver, BC. 26 June 2009 (Kevin Atkins).

Family Haematopodidae - Oystercatchers (258): Black Oystercatcher - 258.

Family Recurvirostridae - Stilts and Avocets (6): American Avocet - 6.

Family Scolopacidae - Sandpipers, Phalaropes, and Allies (127): Spotted Sandpiper - 84, Solitary Sandpiper - 2, Greater Yellowlegs - 5, Long-billed Curlew - 15, Wilson's Snipe - 3, and Wilson's Phalarope - 18.

Family Laridae - Gulls, Terns, and Allies (6,586): Bonaparte's Gull - 11, Mew Gull - 12, Ring-billed Gull - 872, Herring Gull - 174, Glaucous-winged Gull - 4,579 (Figure 74), Black Tern - 783, Arctic Tern - 1, and Forster's Tern - 154.

Family Alcidae - Auks, Murres, and Puffins (22): Common Murre - 2, Pigeon Guillemot - 11, Marbled Murrelet - 1, Ancient Murrelet - 1, Rhinoceros Auklet - 1, and Tufted Puffin - 6.

Family Columbidae - Pigeons and Doves (26): Rock Pigeon - 18, Band-tailed Pigeon - 3, Eurasian Collared-Dove - 1, and Mourning Dove - 4.

Family Tytonidae - Barn Owls (34): Barn Owl - 34.

Figure 74. Most of the Glaucous-winged Gull nests included for this annual report were transferred from historical notes and reports. Merry Island, BC. 6 July 1974 (R. Wayne Campbell).

Figure 75. The pale crest and malar stripe help identify this Pileated Woodpecker as a fully-grown fledgling that was raised in Pacific Spirit Park in Vancouver, BC. 16 July 2009 (Kevin Atkins).

Family Strigidae - Typical Owls (110): Western Screech-Owl - 10, Great Horned Owl - 54, Northern Pygmy-Owl - 1, Burrowing Owl - 5, Barred Owl - 20, Great Gray Owl - 7, Long-eared Owl - 8, Short-eared Owl - 3, and Northern Saw-whet Owl - 2.

Family Caprimulgidae - Goatsuckers (24): Common Nighthawk - 24.

Family Apodidae - Swifts (6): Black Swift - 5 and White-throated Swift - 1.

Family Trochilidae - Hummingbirds (73): Black-chinned Hummingbird - 1, Anna's Hummingbird - 26, Calliope Hummingbird - 2, and Rufous Hummingbird - 44.

Family Alcedinidae - Kingfishers (12): Belted Kingfisher - 12.

Family Picidae - Woodpeckers (208): Lewis's Woodpecker - 8, Yellow-bellied Sapsucker - 8, Red-naped Sapsucker - 27, Red-breasted Sapsucker - 22, Downy Woodpecker - 20, Hairy Woodpecker - 29, American Three-toed Woodpecker - 8, Northern Flicker - 70, and Pileated Woodpecker - 16 (Figure 75).

Family Tyrannidae - Tyrant Flycatchers (221): Olive-sided Flycatcher - 5, Western Wood-Pewee - 12, Alder Flycatcher - 12, Willow Flycatcher - 21, Least Flycatcher - 8 (Figure 76), Hammond's Flycatcher - 3, Gray Flycatcher - 3, Dusky Flycatcher - 5, Pacific-slope Flycatcher - 27, Eastern Phoebe - 2, Say's Phoebe - 18, Western Kingbird - 59 (Figure 77), and Eastern Kingbird - 46.

Figure 76. Nest and eggs of Least Flycatcher. Fellers Heights, BC. 27 June 2008 (Mark Phinney).

Family Vireonidae -Vireos (49): Cassin's Vireo - 5, Hutton's Vireo - 3, Warbling Vireo - 26, and Red-eyed Vireo - 15.

Family Corvidae - Jays, Magpies, and Crows (168): Gray Jay - 14, Steller's Jay - 5, Blue Jay - 1, Black-billed Magpie - 25, Clark's Nutcracker - 2, American Crow - 33, Northwestern Crow - 33, and Common Raven - 55.

Figure 77. Adult Western Kingbird feeding recently fledged young on top of a nest box. Vernon, BC. 9 July 2009 (Vicky Atkins).

Family Alaudidae - Larks (4): Horned Lark - 4.

Family Hirundinidae - Swallows (1,856): Purple Martin - 51, Tree Swallow - 901 (Figure 78), Violet-green Swallow - 46, Northern Rough-winged Swallow - 43, Bank Swallow - 119, Cliff Swallow - 429, and Barn Swallow - 267 (Figure 79).

Figure 78. Almost half of all swallow breeding records were of Tree Swallow, and most of these were of nests with eggs or nestlings found in nest boxes. Lister, BC. June 2009 (Vic Cousineau).

Family Paridae - Chickadees (101): Black-capped Chickadee - 26, Mountain Chickadee - 15, Chestnut-backed Chickadee - 56, and Boreal Chickadee - 4.

Family Aegithalidae - Bushtit (20): Bushtit - 20 (Figure 80).

Figure 79. These newly fledged Barn Swallows certainly are letting an arriving parent with food know that they are hungry. Vancouver, BC. 30 June 2009 (Kevin Atkins).

Figure 80. Fledgling Bushtits are very pale overall compared to their parents and often show a characteristic yellow gape. Vancouver, BC. 28 June 2009 (Kevin Atkins).

Family Sittidae - Nuthatches (20): Red-breasted Nuthatch - 10, White-breasted Nuthatch - 4, and Pygmy Nuthatch - 6.

Family Certhiidae - Creepers (16): Brown Creeper - 16 (Figure 81).

Family Troglodytidae - Wrens (207): Rock Wren - 1, Bewick's Wren - 6, House Wren - 27, Winter Wren - 34, and Marsh Wren - 139.

Figure 81. Many Brown Creeper nests can be located by searching for strips of bark and twigs visible from under loose bark on old trees. Elk Lake, Victoria, BC. 24 May 2009 (Mark Nyhof).

Family Cinclidae - Dipper (12): American Dipper - 12.

Family Regulidae - Kinglets (14): Golden-crowned Kinglet - 6 and Ruby-crowned Kinglet - 8.

Family Turdidae - Bluebirds, Thrushes, and Allies (817): Western Bluebird - 24, Mountain Bluebird - 536, Townsend's Solitaire - 9, Veery - 1, Swainson's Thrush - 15, Hermit Thrush - 9, American Robin - 218 (Figure 82), and Varied Thrush - 5 (Figure 83).

Family Mimidae - Mockingbird, Thrashers, and Allies (13): Gray Catbird - 13.

Family Sturnidae - Starlings and Allies (166): Crested Myna - 1 and European Starling - 165.

Family Motacillidae - Wagtails and Pipits (7): American Pipit - 7.

Figure 82. Along the coast of British Columbia, the American Robin often nests in sucker growths on the sides of tree trunks like this Red Alder. Vancouver, BC. 24 July 2009 (Kevin Atkins).

Figure 83. Only five breeding records of Varied Thrush were received in 2009. This newly fledged young, still showing downy head tufts, was photographed near Smithers, BC. on 11 June 2009 (Marcus Womersley).

Family Bombycillidae - Waxwings (55): Cedar Waxwing - 55.

Family Parulidae - Wood-Warblers (173): Tennessee Warbler - 1, Orange-crowned Warbler - 15 (see Figure 15), Nashville Warbler - 1, Yellow Warbler - 66, Magnolia Warbler - 1, Cape May Warbler - 1, Yellow-rumped Warbler - 19, Black-throated Gray Warbler - 3, Townsend's Warbler - 3, Palm Warbler - 8, American Redstart - 6, Ovenbird - 5, Northern Waterthrush - 2, Connecticut Warbler - 1 (see Figure 34), MacGillivray's Warbler - 8, Common Yellowthroat - 26, Wilson's Warbler - 5, and Canada Warbler - 2.

Family Thraupidae - Tanagers (7): Western Tanager - 7.

Family Emberizidae - Towhees, Sparrows, Longspurs, and Allies (329): Spotted Towhee - 23, Chipping Sparrow - 56, Clay-colored Sparrow - 11, Vesper Sparrow - 54 (Figure 84), Lark Sparrow - 1, Savannah Sparrow - 39, Grasshopper Sparrow - 1, Fox Sparrow - 2, Song Sparrow - 41, Lincoln's Sparrow - 12, White-throated Sparrow - 7, White-crowned Sparrow - 16, Golden-crowned Sparrow - 1, and Dark-eyed Junco - 65.

Figure 84. The large number of Vesper Sparrow nests reported was the direct result of intensified nest searches carried out in the Cariboo-Chilcotin region in 2009. Near Riske Creek, BC. 26 May 2009 (R. Wayne Campbell).

Family Cardinalidae - Grosbeaks, Buntings, and Allies (29): Rose-breasted Grosbeak - 2, Black-headed Grosbeak - 23 (Figure 85), and Lazuli Bunting - 4.

Family Icteridae - Blackbirds, Orioles, and Allies (2,087): Bobolink - 1, Red-winged Blackbird - 571, Western Meadowlark - 8, Yellow-headed Blackbird - 1,237, Rusty Blackbird - 4, Brewer's Blackbird - 135, Common Grackle - 11, Brown-headed Cowbird - 83, and Bullock's Oriole - 37.

Family Fringillidae - Cardueline Finches and Allies (62): Gray-crowned Rosy-Finch - 2, Pine Grosbeak - 2, Purple Finch - 7, Cassin's Finch - 1, House Finch - 22, Red Crossbill - 2, White-winged Crossbill - 1, Pine Siskin - 9, American Goldfinch - 12, and Evening Grosbeak - 4.

Figure 85. Male Black-headed Grosbeak feeding a recently fledged young on a wooden railing in a rural garden. Arrow Creek, BC. 17 July 2009 (Marcia Long).

Family Passeridae- Old World Sparrows (46): House Sparrow - 46.

Total nests/broods - 21,888; 246 species

(2009 season - 11,634; historical - 10,254)

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

A **Andy Ackerman - 1**, **Ken Albright - 3**, **Robert W. Allen - 4, Bill Anderson - 2**, E. M. Anderson - 8, **Errol Anderson - 62**, **Morgan Anderson - 2**, **Anonymous - 43**, Steve Ansell - 1, **Cathy Antoniazzi - 2**, Peter Arcese - 1, **Ted Ardley - 2**, **Janice Arndt - 11**, Dennis Ashby - 1, J. Ashton - 1, **Alfred Atkins - 1**, **Kevin Atkins - 45**, **Lloyd** (Figure 86) and **Vicky Atkins - 186**, **Vicky Atkins - 2**, **Vicky Atkins** and **Alice Beals - 4**, and R. N. Atkinson - 5.

B Margaret Baker - 1, R. Baker - 3, Peter Balagus - 1, **Geoff Barnard - 1**, **Avery Bartels - 3**, **British Columbia Fish and Wildlife Branch - 30**, British Columbia Game Branch - 9, British Columbia Ministry of Environment - 146, **British Columbia Parks Branch - 8**, Brent Beach - 2, **Alice Beals - 14**, **Marc-André Beaucher - 3**, Frank L. Beebe and G. Clifford Carl - 2, **Barbara Begg - 65**, Winifred M. Bennie - 2, **Jennifer L. Bergen** and **F. Don Young - 5**, Alan Best - 1, **Ed Beynon - 64**, James Biggar and

Figure 86. Lloyd Atkins using an old bicycle mirror to check the contents of a Tree Swallow nest. Vernon, BC. 15 June 2009 (Vicky Atkins).

David F. Hatler - 5, **Peter Blokker - 2**, Jack Bowling - 8, **Malcolm Boyd - 1**, Dorothy M. Bradley - 2, James Bradley - 2, **Gary Breault - 3**, Ron Brewster - 1, Tom and Gwen Briggs - 1, **Tom Brighouse - 700**, Allan Brooks - 24, **George Brown - 2**, Murray Brown - 1, E. R. Buckell - 1, **Fred L. Bunnell - 5**, **Burnaby Lake Parks Department - 2**, Clyde H. Burton - 245, Ken Burton and Laurie Ness - 1, **Beverly H. Butcher - 135**, and Robert W. Butler - 1.

CJ. and M. Caldwell - 1, **Cliff Calvert - 2**, **Eileen Campbell - 7**, **R. Wayne** and **Eileen C. Campbell - 6,454**, **R. Wayne Campbell** and **Glen MacGregor - 1**, **Canadian Coast Guard - 256**, **Canadian Department of Transportation - 2**, **Canadian Wildlife Service - 9**, Richard J. Cannings - 15, Steve Cannings - 1, Sydney G. Cannings - 1, Clifford G. Carl - 10, **Michael A. Carson - 3**, **Central Okanagan Naturalists - 1**, John Chandler - 1, Dan and Connie Chapman - 1, **Chris Charlesworth - 8**, **Chilliwack Naturalists - 1**, Colin Clasen - 1, Joanne and Bruce Clayton - 1, Joanne Clayton - 1, George Clulow - 3, **Robert W. Collins - 9**, **Cyril Colonel - 40** (Figure 87), John Comer - 63, **Comox Strathcona Natural History Society - 3**, W. M. Congreve - 1, G. Cook - 1, Wendy Coomber - 1, Aziza Cooper - 1, Douglas Cooper - 2, Jack K. Cooper - 1, Louise, V. Cooper - 1, **Evi** and **Mel Coulson - 3**, **Evi Coulson - 4**, **Mel** and **Evi Coulson - 1**, **Vic Cousineau - 31**, Ian Cruickshank - 7, R. A. Cumming - 1, J. A. Cunningham - 1, Leona Curry - 1, **Chris Czaijkowski - 12**, and **Chris Czaijkowski** and **Kristina Leidums** - 1.

Figure 87. Cyril Colonel continues to search for nests and submits an annual photo-catalogue of raptor nest sites in the Creston valley, BC. 5 May 2007 (Linda M. Van Damme).

D**Ed** and **Monica Dahl - 6**, S. J. Darcus - 81, **Gary Davidson - 80**, **Gary Davidson** and **Steve McBride - 1**, **Jim H. Davis - 3**, Clint Davy - 1, Neil K. Dawe, John M. Cooper, Andrew C. Stewart, and James A. Young - 532, **Clifford Day - 20**, Milo De Angeles - 3 (Figure 88), Charles de Blois Green - 16, Gwen de Camp - 1, **Dennis A. Demarchi - 1**, **Raymond A. Demarchi - 2**, **Canada Department of Transportation - 133**, W. Dester - 1, **Alex** and **Luanne Coffey**, **Marv** and **Lorna Schley**, **Orie** and **Gloria Kolenchuk**, **Adrian Leather**, **Marian Walker**, **Gerda Wittman**, **Mary Gradnitzer**, **Kathie Davis**, **Sally Hofmeier** and **Marg Dinsdale - 29**, Robert W. Dooley - 1, **Adrian Dorst - 1**, **Ducks Unlimited Canada - 30**, **Walter Dunnett - 1**, Len Dunsford - 2, and **Linda Durrell - 24**.

E**Joe Eastwood - 2**, R. Y. Edwards - 3, **Peter Elliott - 10**, **Environment Canada - 507**, Colleen Erickson - 4, and **David Evans -1**.

Figure 88. Norm Griffin (Canadian Broadcasting Corporation) is interviewing Milo De Angeles about his large nest box program for Wood Ducks and swallows on his lakeshore property at Burnaby Lake, BC. 19 March 1970 (R. Wayne Campbell).

Figure 89. Holly and Peter Goodacre, with their father Brian, checking the contents of a Vesper Sparrow nest near Riske Creek, BC. 13 June 2009. (R. Wayne Campbell).

F **Sheila Falle - 3**, **Don Falones - 2**, John Fanin - 1, Joyce Fitz-Gibbon - 1, Robert G. Footit - 1, Scott Forbes - 2, **Michael A. Force - 9**, **Henry Ford - 23**, **Diana Forrester - 1**, Evelyn Forsyth - 1, J. Bristol Foster - 7, Lee Foster - 2, **Alistair Fraser - 2**, David F. Fraser - 1, T. A. Fraser - 13, Bruce Frederick - 1, A. S. Frisby - 11, D. Lorne Frost - 20, and **Michael Fung - 1**.

G C. B. Garrett - 3, Heather M. Garrioch - 1, A. J. Gaston - 10, Bryan R. Gates - 11, Tracee Geernaert - 675, Jim George - 1, **Ralph** and **Elsie Gerein - 5**, Janet Gifford - 5, Scott Gilmore - 1, **Brian**, **Holly**, and **Peter Goodacre** (Figure 89) **- 66**, J. E. Victor and Margaret E. Goodwill - 6, J. E. Victor Goodwill - 10, J.E. Victor Goodwill and Ron Satterfield - 1, J. Paul Goossen and Robert W. Butler - 4, **Hilary Gordon - 17**, **Hilary Gordon** and **Dan Golnick - 1**, **Hilary Gordon, John Durkan**, and **Laura Nelson - 1**, **Orville Gordon - 35**, **Orville Gordon** and **Arne Chaddock - 2**, **Ted Goshulak - 4**, Rob Gowan - 1, Trevor Goward - 2, Douglas J. Graham - 4, James Grant - 6, **Al Grass - 3**, **Tony Greenfield - 1**, Keith Griffin - 1, Charles J. Guiguet - 262, Susan M. Guiguet - 1, and **Les Gyug - 1**.

H **Penny Haering - 1**, **Larry Halverson - 2** (Figure 90), M. Hanes - 1, Michael A. Hansen - 133, **Willie Haras - 14**, George A. Hardy - 3, L. Harmswart - 1, **Bill Harrison - 2**, Joe Harrison - 8, Rhys Harrison - 1, **Tammy Harrison - 1**, David F. Hatler - 16, Myrnal and Dave Hawes and R. Wayne Campbell - 34, Robert B. Hay - 6, Sue Hayer - 1, Grant Hazelwood - 1, **Joe** and **Kathleen Hejjas - 38**, **Joe Hejjas - 1**, **Ruth E. Hellevang - 5**, Ed Hennan - 31, Sandra Hepburn - 2, Werner and Hilde Hesse - 6, **Ted Hillary - 181**, **Mark Hobson - 6**, John Hodges - 4, Keith Hodson - 1, D. Lorne Holland - 1, Madge Hollington - 2, **Brian**, **Holly**, and **Peter Goodacre** and **R. Wayne** and **Eileen Campbell - 1**, Beryl Holt - 1, John Howard - 4, **Steve Howard - 22**, **Rick Howie - 6**, **Pat Huet - 17**, and **Pat Huet** and **Carla Ahern - 72**.

I Doug Innes - 1, **Marian Innes - 2**, and **John Ireland - 2**.

J J. Bristol Jacobs - 30, Tom Jacobson - 3, Richard S. Jerema - 1, Leo Jobin - 6, **Betty Johnson - 1**, **Debbie Johnson - 5**, Aleda Johnston - 1, **Marlene Johnston - 25**, **Ryan Johnston - 1**, W. B. Johnstone - 6, Edgar T. Jones - 1, and **Simon Jorgensen - 2**.

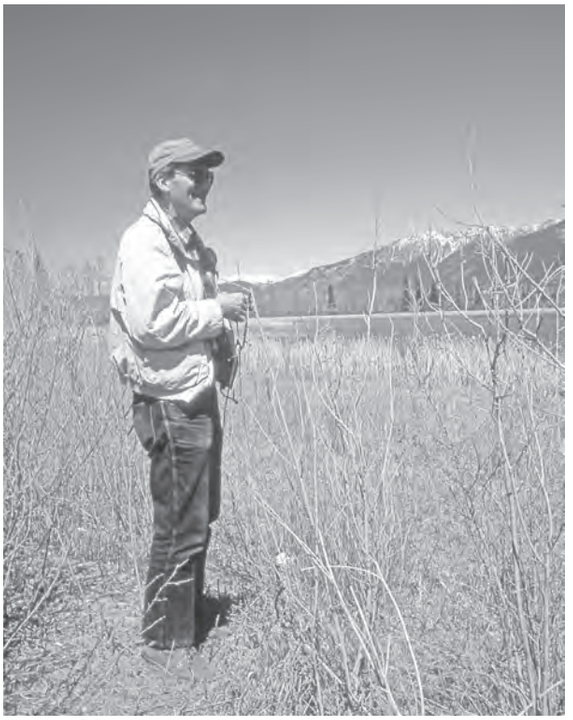


Figure 90. Although retired from his long career with Parks Canada, Larry Halverson enjoys naturalizing outdoors and still submits nesting records to the British Columbia Nest Record Scheme. Radium, BC. 9 May 1997 (R. Wayne Campbell).

Kamloops Naturalists Club - 3, **Ronda Karliukson - 32**, Brian M. Kautesk - 2, J. H. Keen - 2, K. E. Kelleher - 2, R. M. Keller - 2, J. E. H. Kelso - 2, Ken Kennedy and R. Wayne Campbell - 545, Jeremy Kim - 3, **Frank Kime - 7**, **Sandra Kinsey** and **Laird Law - 2**, Ethel Kippin - 1,179, **Kevin Knight - 19**, **Denis Knopp - 4**, Douglas W. Kragh - 6, **Nancy Krueger - 66**, **Nancy Krueger** and **Cathy Antoniazzi - 11**, **Nancy Krueger** and **Dan Dunlop - 1**, **Nancy Krueger** and **Jack Bowling - 1**, **Nancy Krueger** and **Joel** and **Lynda Hawkes - 2**, and **Nancy Krueger** and **Karen Krushelnick - 3**.

Elsie Lafreniere - 7, Hamilton M. Laing - 2, **Pam Laing - 2**, **David Lambie - 1**, **John** and **Vi Lambie - 112** (see *Participant Profile* on inside front cover), **John**, **Vi** and **Dave Lambie - 2**, **John**, **Vi**, and **David Lambie** and **Jukka Jantunen- 1**, **John**, **Vi**, and John A. Lambie - 14, **John A. Lambie - 1**, **Vi Lambie** and **Kirk Smith - 1**, **Barry Lancaster - 1**, Michael A. Lancaster - 1, George A. Langley - 1, **Langley Field Naturalists - 6**, Lisa Larsen - 1, **Laird Law - 1**, **Laird Law** and **Sandra Kinsey - 40**, Jim Lawrence - 3, **Adrian Leather - 2**, Les Lee - 1, Martin C. Lee - 1, **Douglas Leighton - 2**, **Gary Lelliott - 1**, Enid K. Lemon - 4, Janna Leslie - 5, **Pat Levitt - 1**, Molly Lines - 1, **Marcia Long - 38, Marcia Long** and **Linda Van Damme - 1**, David J. Low - 1, **Betty** and **Jim Lunam - 1**, Robert E. Luscher - 4, Agnes Lynn - 1, Pete Lypkie - 1, and Rob Lyske - 3.

Bruce A. MacDonald - 12, Bruce A. MacDonald and Michael Force - 1, J. MacFarlane - 7, R. M. MacFarlane - 6, F. Mack - 1, **Tom E. Mackenzie - 31**, A.C. Mackie - 8, **Alan M. MacLeod - 1**, Walter S. Maguire - 74, **M. Malone - 1**, **Gary Clarke-Marlow - 1**, Patrick W. Martin - 2, Phyllis Masson - 1, Phil Matty - 261, R. M. Maynard - 1, **Ron Mayo - 1**, J. McEwan - 1, Jerry McFetridge - 1, Mike and Barb McGrenere - 2, Mike McGrenere - 1, Duncan McIntosh - 1, Lorne D. McIntosh - 1, **Bob McKay - 1**, **Ed McMackin - 18**, **Michael McMann - 1**, W. McNeil - 1, **Martin K. McNicholl - 1**, Ian McTaggart-Cowan - 2 (Figure 91), Anita McWilliams - 1, Arthur L. Meugens - 11, Harry Middleton - 21, Margaret Middleton - 8, M. Milburn - 1, Jim Mitchell - 6, **Mitlenatch Island Field Naturalists - 1**, Dennis Morgan - 74, Marilyn Morgan - 2, David A. Munro - 18, James A. Munro - 1045, O. J. Murie - 25, Brian Murland - 1, **Brian Murland** and **Adrian Leather - 1**, Anne Murray - 3, and **Don Myers - 866**.

Figure 91. The publications of the late Dr. Ian McTaggart-Cowan are still being searched for nest records. Creston, BC. 26 September 1993 (R. Wayne Campbell).

N**Ed** and **Shirley Napier - 1**, F. Neave - 1, F. Neave and W.E. Ricker - 1, **Laure W. Neish - 3**, C. Nelson - 1, C. F. Newcombe - 1, George Newell and Doug Innes - 1, **Valerie Nicholson - 1**, **North Okanagan Naturalists - 35**, **Elsie Nyfork - 1**, **Ivar Nygaard-Petersen - 119**, **and Mark Nyhof - 355**.

OGordon C. Odlum - 179, **Penny Ohanjanian - 2**, and **Stan Olson - 6**.

P**Parks Canada - 16**, David Parnell - 3, Betty Pascuzzo - 1, Mary Pastrick - 7, **Fern and Robb Paterson - 1**, Henry Patol - 1, W. Adrian B. Paul - 18, Dennis Paulson and W. Douglas Kragh - 1, Theed Pearse - 5, **Mat Pearson - 126**, Betty Lou Peers - 3, **Ed Pellizzon - 2**, **Janne Perrin - 51**, **B. Ralph Peterson - 325**, **Mark Phinney - 18** (see *Participant Profile* on inside back cover), J. A. Pick - 1, **Dirk Pidcock - 27**, Pitt Waterfowl Society - 6, J. Plowden-Wardlow - 1, Douglas Powell - 30, **G. Allen Poynter - 37**, W. J. Pratt - 6, B. Ralph Preston - 1, Michael Price - 1, **Sandy Proulx - 196**, and **Provincial Museum of Alberta - 1**.

RKenneth Racey - 9, Marilyn Rack - 3, Sarri Raffan - 1, **Phil Ranson - 2**, **Phil Ranson** and **Sandy Proulx - 4**, **George C. Reifel Migratory Bird Sanctuary - 2**, Tom E. Reimchen - 8, **Sheila Reynolds - 18**, S. N. Rhoads - 6, W. E. Ricker - 9, **Dave Riedel - 1**, J. P. Rissling - 10, Ralph W. Ritcey - 3, **Anna Roberts - 48**, Leila G. Roberts - 5, Sid Roberts - 208, Sid Roberts and Betty Chapman - 9, **Neil Robins - 2**, Robin Robinson - 13, Steve H. Robinson - 3, Laurie Rockwell - 43, Michael S. Rodway - 32, Anna Rose - 1, Greg Ross - 2, David Routledge - 1, Vicky Roy - 2, Royal Ontario Museum - 6, **Rand Rudland - 1**, Craig Runyan - 1, Joachim Rushstein - 1, **Gerry Russell - 1**, **Glenn R. Ryder - 573**, and Glenn R. Ryder and Ervio Sian - 1.

S**Diana**, **Sarah**, and **Rod Sargent - 1**, **Rod** and **Sarah Sargent - 1**, **Rod Sargent - 4**, Ron and Joy Satterfield - 1, **Ron Satterfield - 6, Lorraine Scott - 8**, **Lorraine Scott** and **Sharon Laughlin - 32**, Barbara M. and Don W. Sedgwick - 1, **Barbara M. Sedgwick - 1**, **Robert Shaw - 24**, Michael G. Shepard - 5, Rick Schortinghuis - 1, **Dave Schutz - 3** (Figure 92), **Dave Shutz** and **Brian Stech - 1**, Ervio Sian - 1, **Chris Siddle - 1**, Chris Siddle and W. Douglas Kragh - 1, Fred Simpson - 6, Ed Sing and Al Grass - 1, **Paul Singh - 24**, **George Sirk - 4**, Arnold Skei - 2, Ryan Sleik - 3, Ian D. and Glen W. Smith - 3, Ian D. Smith - 1, Kay Smith - 2, **Steve Smith - 2**, W. S. Smith - 5, G. A. Smyth - 4, Rich Sobel - 2, Gladys Soulsby and Enid K. Lemon - 1, **South Okanagan Naturalists - 5**, **Jim Spencer - 54**, **Gail Spitler - 1**, **Gail Spitler** and **Dirk Pidcock - 11**, Prue Spitman - 1, William Spreadborough - 6, Pam Stacey and Robin Baird - 3, Christopher Stephens - 1, David Stevenson - 1, **Bob Steventon - 2**, **Don Stewart - 1**, John Stewart - 1, Ronald M. Stewart - 3, **David Stirling - 59**, B. Stockman - 1, Brian Stushnoff - 22, Geoff Styles - 2, B. Sullivan - 1, S. Sullivan - 2, Kenneth R. Summers - 5, J. Sunstrom - 1, Surrey and White Rock Naturalists - 2, J. Swanson - 8, **Richard Swanston - 2**, Harry S. Swarth - 6, Bert Sweeting - 1, and **Lorraine Symmes - 22**.

Figure 92. During bird-watching trips in the Greater Vancouver area, Dave Schutz is always watchful for evidence of breeding birds. Coquitlam, BC. (R. Wayne Campbell).

T**John Tabak - 2**, E. M. Tait - 8, Lila Tauzer - 1, P. A. Taverner - 1, G.W. Taylor - 2, Howard A. Telosky - 3, T. Thacker - 2, Sue Thompson - 1, **Robert Thomson - 1**, **Scott Thomson - 4**, Deb Tobin - 1, Colin S. Trefry - 1, Neil S. Trenholme - 4, Margaret Turner - 3, Terry Turner - 1, and **Danny Tyson - 3**.

UUniversity of British Columbia (Department of Zoology) - 56.

V **Linda Van Damme - 665**, **Ben van Drimmelen - 1**, Kevin J. Van Tighem - 2, Cornelia Vanberkelkerman - 1, **Vancouver Natural History Society - 289**, and **Victoria Natural History Society - 78**.

W **Ron Walker - 1**, Nicole Warner - 1, Ross G. Waters - 29, Robin R. Weber - 2, **Rita Wege - 24**, **Rita Wege** and **Gwen Nicol - 1**, **Rita Wege** and **Val Dingwall - 1**, **Brent Wellander - 9**, Ray M. Wershler - 1, West Kootenay Naturalists - 4, Edward G. White - 47, **Mary Whitley - 4**, Anita Williams - 1, Bob Williams - 1, D. Williams - 2, M. Y. Williams - 6, Murray Williams - 4, **P. Ray Williams - 8**, **Williams Lake Field Naturalists - 5**, **Steve Wilson - 581**, **Marcus Womersley - 17**, C. E. Wood - 2, Michael Woolfe - 1, David Woolgar - 1, Trudie Wooten - 3, Trudy Wooten - 1, Michael Word - 1, **Mark Wynja - 1**, and J. Wynne - 5.

Y Mike Yip - 7, and C. J. Young - 5.

LONG-TERM MONITORING AND INVENTORY PROJECTS

A major effort was once again put into gathering consistent long-term information on four widely diverse groups of birds. These included **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, 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 (Figure 93), Mountain Bluebird, Western Bluebird, Tree Swallow, and Violet-green Swallow).

Each is discussed separately below.

Figure 93. Most of what we know about the breeding biology of Mountain Chickadee in British Columbia has been gathered from nest box programs. Mount Thompson, BC. 11 July 2009 (Gary Breault).

Colonial-nesting Fresh-water Birds

This group includes species that nest on the surface of the water, either exposed or hidden in emergent vegetation, and species that nest above water in cattails, bulrushes, sedges, and shrubs. The latter habitats usually require searching by boat or wading.

Field notes were received for four species, **Western Grebe, Clark's Grebe**, **Ring-billed Gull**, and **Black Tern**.

Western and Clark's Grebe

Salmon Arm (including Christmas Island)

Ted Hillary, who kept notes from 18 May to 13 September on the species' activities, reported a very successful breeding season in the vicinity of Salmon Arm Bay. His 2009 notes were included in the species summary published recently in *Wildlife Afield* (Volume 6 (1):40-105, 2009). Relevant notes are as follows:

"*On May 18, 2009, the Salmon Arm Bay is quite full of grebes, my high count being over 250. Most are still widely scattered but as the water comes up many are coming closer to shore. There were about 20 pairs courting right along side of the wharf the other morning. There are some Clark's grebes and*

hybrids, though they are hard to see, so it is difficult to know exactly how many there might be.

While I was in Creston later in May there were courtship activities all over the place in the Bay. The tourists and photographers were in their glory since multiple pairs could be seen dancing right beside the wharf. When I got back from Creston grebes were scattered all over the Bay, not up to much. By the beginning of June, I was seeing 30-40 a day, with no signs of nesting, though I assumed that they were in the reed canary grass. In about mid June there seemed to be about 50 new arrivals in the Bay by Raven subdivision (north of Christmas Island). When I saw them they were displaying a lot of courtship activities; the next day they were gone, presumably scattered all over the Bay as there were many scattered about. High water this year was on June 21, and it was right on the average mark.

On July 1 young started appearing, 5 were seen that day. Most days I go out I see more and it is starting to get easier to get a more accurate count since more are swimming with their parents. Today I got an estimated 52 young: 7 pairs with 1; 14 pairs with 2; 5 pairs with 3; and 1 pair with 4.

On July 5 there were another 14 -15 pairs courting just north of Christmas Island. These were gone yesterday, but may have been back since late this afternoon I saw about 45 sleeping in the same area. Mixed in with them were pairs with young so it was difficult to tell what.

There are several Clark's grebes. On May 15, I saw 1 courting with a western grebe. On May 28 and 29 I saw a pair together. On June 2 I saw 2 Clark's grebes with 2 western grebes seemingly looking for nesting sites. I have seen a picture of 2 hybrid Clark's together. And on June 9 I saw another hybrid, which I call 3/4 Clark's. During June I saw various courtship activities amongst the Clark's.

There are several Clark's grebe families, though these are scattered all over the Bay and difficult to find. There is at least one "pure" Clark's grebe families with 3 young, and probably 2 families. There are 2 families of a Clark's grebe and western grebe adults, with 2 and 3 young respectively. There is also at least 1 family of "hybrid" Clark's grebes, with 3 young.

Because of the reed canary grass all along the shore line I saw no western grebe nests this year. However, they have also been quite successful in nesting. I estimate that there are now over a 100 young scattered over the Bay, including at least 3 families with 4 young and 1 family with 5 young. There may be some predation from the ring billed gulls. A couple of weeks ago Ed And Monica Dahl watched a gull grab a young western grebe right out of the water; I guess it was too big and heavy for the gull since it dropped it before it got too far off, and the young scampered back to the adults who were completely non plus with the whole event.

On August 19, Ed and Monica Dahl counted 185 adults and 131 young. I believe this is the third highest count for the Bay, with 1996 and 1997 being a bit higher.

By September 13, there were still about 10-12 late hatchlings still being fed by adults. Right now there are about 350 western grebes scattered all over the Bay."

Ted also sent 2009 summary observations of **Monica** and **Ed Dahl** for the period 20 May to 19 August: *"… began counting* [Figure 94] *the Western Grebes May 20, 2009, a calm day with light rain and 12 degrees Celsius. Shuswap Lake water level was 346.60 meters compared to 2008 on the same date at 346.80 meters. That was a difference of only 20 centimeters, or 8 inches. We counted 204 Western Grebes.*

May 27th there were 28 Western Grebes near the CPR bridge west of Peter Jannink Park and 117 counted from Raven, with a total for the day of 159 grebes. Water level was 346.96 m., and 347.95 the year earlier. That was almost a whole meter difference, which is a great deal of water.

June 10 we saw only 73 Western Grebes and the water level was at the high for 2009, at 347.97 meters on June 21st. High for 2008 was 348.74 m. June 10 & 11, a difference of 77 centimeters (30 in. +). June 17 we counted only 32 Western Grebes and wondered where they were hiding.

July 1st. 107 adults were counted, 37 near Sandy Point., 22 east of the wharf, 41 by Peter Jannink Park, plus 5 young. Lake water levels were on decline at 347.67 meters. We were smiling again.

July 8 174 adults counted and 24 young. We observed a young grebe being picked up by a gull, from a family of four little ones but it was dropped and swam back to the parents.

The numbers kept climbing, 178 adults and 62 young on July 15. July 22 there were 191 adults and 114 young. And on July 29, 186 adults were counted and 130 young. We did count again, Aug. 19 which

was clear, calm and sunny. We counted 185 adults and 131 young, which related very well with the previous count. I was amazed."

Figure 94. Pair of Western Grebes performing their courtship dance in Salmon Arm Bay, BC. Spring 2009. (Ed Dahl).

Duck Lake

Linda Van Damme completed her 15th season monitoring breeding **Western Grebes** in the Creston valley. The first sign of breeding activity was noted on June 17th when a single pair of grebes was observed nest building. However, this nest did not progress beyond a loose collection of nesting materials and there was no further sign of nest building during the remainder of June. In fact adult birds were not located on the lake during follow-up visits that month. On July 8th, eight adults were counted in the southeast corner of the lake with one pair actively nest building. This nest was gone the following day. The weather was turbulent with major windstorms and waves and by early August the season was declared a failure.

On September 4th, I heard the distinct begging calls of a young grebe but couldn't locate the individual. Then on September 13th I again heard the begging calls. I methodically scoped the lake from the southwest corner out to the centre where I observed a young grebe actively begging and being fed fishes by two adults. In fact the young grebe was fed eight times over my 40 minutes of observation. The young grebe appeared to be well developed.

I was surprised on October 30th to once again hear the begging calls of a young grebe. Scanning the lake, I located the young bird, with its neck stretched forward following an adult which was continually diving. One fish was caught by the adult and "mashed" in the bill and dropped in the water near the young grebe which quickly grabbed the fish and swallowed it. A second, larger fish was caught by the adult and the young grebe had some difficulty handling the fish, but eventually consumed it. The two adults did a brief courtship display.

No further begging calls were heard after October 30th, but a lone grebe patrolled the north end of the lake in the company of American Coots until the end of November.

Ring-billed Gull

Ted Hillary wrote: *"The Ring-billed Gulls* [Figure 95] *have been highly successful this year at Salmon Arm Bay. On 25 May, 700 nests were counted. Very few of these were washed out by high water. I estimate that they are over 500 young. I have never seen so many young."*

Figure 95. The numbers of Ring-billed Gulls nesting on Christmas Island in Shuswap Lake, BC., varies greatly from year to year. 29 May 1995 (R. Wayne Campbell).

Black Tern

Twenty-three Black Tern colonies were surveyed by **Wayne** and **Eileen Campbell**, four of which were new breeding sites. Nearly 100 nest platforms were also checked, scattered in wetlands from south-central to northeastern regions of the province. About 68 percent were in use. In one case, a pair of terns did not like the "high-end accommodation" set out for them and instead stole the nesting materials placed on the platform

and built their own nest six inches away!

Some of the nesting platforms were again used as moulting sites for male **puddle ducks**, feeding platforms for **Muskrats**, and nest sites for **Eared Grebes**.

Colonial-nesting Terrestrial Birds

More land sites for colonial-nesting species were visited in 2009 than ever before and in the future may require a special section in the annual report. Because of this year's content, and size of the annual report, only a couple of items are included that were submitted in writing outside the regular nest cards or picked up from other sources.

Great Blue Heron

Sheila Reynolds reported that the solitary pair of Great Blue Herons successfully raised two young again at the **Bull River** corner in the East Kootenay.

As mentioned in the 2008 report, the large colony at **Leach Lake** within the Creston Valley Wildlife Management Area, can no longer be monitored due to the re-location of nests deeper within the Black Cottonwood stand. However, the small heron colony of approximately 20 pairs at the south end of the Creston valley had a successful season. So far, there has been no intrusion by **Double-crested Cormorants**, although they have been observed along the **Kootenay River** in the general vicinity of the heron colony.

On 19 June, Global News aired a brief documentary on the Vancouver Stanley Park heronry to bring attention to the plight of heron chick predation by a burgeoning resident population of raccoons within the park. The following link provides an overview of the 2009 nesting season: http://www.stanleyparkecology.ca/programs/conservation/urbanWildlife/herons/monitoringReports/SPHeronryReport2009.pdf

Swallows

Linda Van Damme monitored **Barn Swallow** nests at a couple farmsteads that had not previously been checked in the **Creston valley**. Twenty-four nests in total were monitored. Northern Rough-winged, Bank, and Cliff Swallows were checked at various locations around the Creston valley and elswhere around the province (Figure 96).

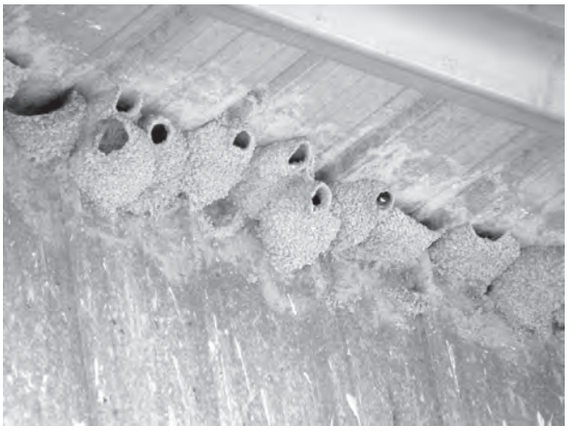


Figure 96. Keeping track of small nesting colonies of Cliff Swallows each year is essential as they often are the first source to indicate something is happening to the species. Near Mackenzie, BC. 30 May 2009 (Vi and John Lambie).

Osprey

Again, we are pleased that a few 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 for a variety of study areas throughout the entire province it is also important for long-term trend analysis that data is recorded as much as possible by the same individual and in the same standard format.

We also received many cards from other contributors who recorded breeding activity as they travelled around the province or monitored nest sites close to their home (Figure 97). Many of these locations are well known and have a long history of use.

The following five areas were well surveyed.

<u>West Kootenay (Nakusp to Fauquier)</u>

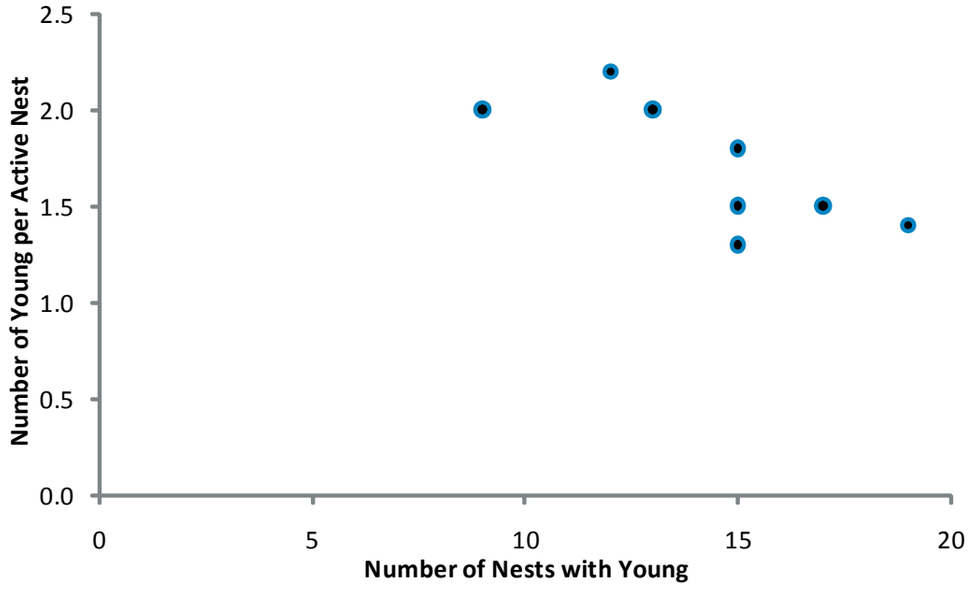
Gary Davidson continued to monitor **Osprey** in the **Arrow Lake** region and writes: "*It is sometimes difficult to determine exactly how many nests are actually started since I can never see into the nests. An adult sitting low on the nest is a good indication*

Figure 97. Monitoring Osprey nesting activity locally, usually for only a couple of nests, contributes to the general knowledge for the species throughout British Columbia. Near Mackenzie, BC. 11 July 2009 (Vi and John Lambie).

of incubation, but some of the nests are so directly above the viewing location that even determining incubation is difficult sometimes. However, it appears that fewer nests were attempted this year than usual. Not withstanding the above constraints, I estimate that the average number of nests that reached the incubation stage in the 7 previous years of complete data to be 23.2. This year only 19 or 20 nests reached this stage. Similarly the number of nests that actually produced young was down slightly, 13 compared to an average of 14.6. The total number of young raised in those nests was 26. This average of 2 young per nest is considerably higher than the average of 1.67.

This prompted me to take a closer look at the data. I discovered that there is a fairly strong negative correlation between the number of nests that produce young and the average productivity of those nests. That is, the fewer nests that actually produce young, the higher the productivity. As a result, the total number of young remains reasonably constant from year to year. As with most data, one or two years don't quite fit the trend exactly, but the trend is definitely there."

	1994	1995	1998	2002	2003	2005	2007	2009
Total Young	27	18	26	25	20	27	22	26
Active Nests	25	26	24	30	29	32	26	20
Nests with Young	15	9	12	17	15	19	15	13
Avg. Young Per Nest	1.8	2.0	2.2	1.5	1.3	1.4	1.5	2.0



West Kootenay (Balfour to Waneta)

Monitoring of nesting Ospreys in the West Kootenay, between Balfour and Waneta, was continued in 2009 by **Elaine Moore**, **Rita Wege**, **Emilee Fanjoy**, and **Janice Arndt**. Thirty active nest sites were followed through the summer with monthly visits. Of these, 22 (73%) were successful. Total number of chicks raised to near fledging age was 43, the highest recorded in 5 years. Average number of young for active nests was 1.4 and for successful nests was 2.0. Early in the Osprey breeding season, 25 Osprey nests were occupied by incubating Canada Geese; eight of these sites were later successfully used by Ospreys.

Creston Valley (United States border to south Kootenay Lake)

Linda Van Damme and **Cyril Colonel** completed their 12th consecutive season of monitoring Ospreys. The season, like most others started off well with 32 active nests but over the course of the spring and summer nine nests were abandoned. Out of the 23 productive nests, we observed 39 nestlings, however we know four of these did not survive. We were disappointed to discover the disappearance of two young from a nest site which we reported on last year that has now had four consecutive years of failure.

At one high profile nest site along Wildlife Road, the Creston Valley Wildlife Management Area partnered with the Fish and Wildlife Compensation Program, Kootenay Wireless, and Creston Tree Service to install two cameras which would allow the public the opportunity to track the nesting season for a pair of Osprey that call this site home (Figure 98). The installation took place on 21 April and when the man wearing a hard hat ascended the nest tree, one Osprey perched on a nearby snag called continuously for 15-20 minutes, while its mate circled overhead. It was obvious the pair had "important" business to take of. After 45 minutes and the installation still in progress, the male Osprey descended from the sky and copulated with the female as she remained on her perch. The female was well settled in the nest through the month of May. However, the webcam project was cancelled when in early June, the Creston Valley Wildlife Management Area noted that one of the eggs was missing and a few days later the second egg as well.

Figure 98. While cameras were being installed a pair of Osprey remained close to their nest tree. Creston, BC. 21 April 2009. (Linda M. Van Damme).

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

Sheila Reynolds completed her fourth season of monitoring local Osprey (Figure 99). Thirteen nest sites were checked of which 12 were active. The Canada Geese were in the one at Wild Horse Creek again this year. Seven nests remained active and had a total of 12 young, including one with 3 young, giving these seven nests an average of 1.7 young per site.

Woodbury area

Lorraine Symmes writes for the summer of 2009: "*The Ospreys at Cedar Creek (who had the very late chicks last year) did not return this Spring to that particular nest, sadly. But I'm hoping that they have settled across the lake as I am seeing two pairs fishing around here and one of them heads across to the eastern shore--something I have not seen before.*

The Ospreys of Florence (close to the Cody caves road) are back again this year and after having failed nests for two years have chosen a post about 100 meters to the south. This choice has been not without its difficulties. As I mentioned last year, they did some courting and new nest building on this post in the late summer of '08, but had trouble, as the three poles that came together were quite uneven at the top. The poles also move back and forth with high winds and waves (at least 4 inches either way). I was amazed they tolerate that much sway. The couple was not to be discouraged as they kept piling sticks on and fashioned a built up version that even lasted through the high winds of the previous winter. This location makes it pretty hard to see the nestlings until they are much bigger. The adults seem to be pretty proactive at challenging the eagles that fly by regularly and nest nearby at Twin Bays about 1 km to the North.

Figure 99. This large nest is the only one built in a tree; all others are on elevated wooden platforms. West of Wardner, BC. 12 July 2008 (Sheila Reynolds).

From Lorraine's Osprey Diary:

***May 20th** - Ospreys at Florence have begun incubating.*
Throughout May and June - continue incubating.

***June 26th** - adult female appeared to be feeding something in the nest and scared off an eagle flying too close.*

***June 28th** - Adult osprey "shading" young in nest by "hunching" on nest edge and holding wings oddly while casting a shadow.*

***July 3rd** - spot weaving a flopping head of chick as being fed.*

***July 25th** - chick getting brown pin feathers and can lift head for a minute, now. Huge growth spurt.*

***August 8th** - Chick is now eye-locating fish over the edge of the nest. Now starting to stand for short periods and about ¾ grown. There are 2 pairs of adults in the area. I see the Florence pair daily and another pair about once every week at the same time as the Florence pair. Usually soaring up high and calling.*

***August 10th** - When strong steady winds come up from the South the chick starts practicing wing strokes. She bounces a half dozen times up and down on the wind with the nest below her acting like a trampoline. She's lifting off at least 3-4 feet off the nest! Luckily she got tired before falling and stopped; then began moving sticks around the edge of the nest. (pictures included). Then preening behaviour for at least 20 minutes.*

***August 14th** - Osprey fledged today! Sits on post nearby and almost gets knocked off perch by eagle flying by. Osprey adults drive it off.*
For the next week: Chick continues to be fed at the nest for about a week. She is adjusting nicely and learning more graceful take-offs and landings. Often disappears for a few hours. Sometimes gone fishing all day with adults and returns to roost at dusk. Adults roost nearby.

***September 2nd** - first evidence of chick bringing fish to nest and eating it with no adults in sight.*

***September 9th** - adults have left. No sightings for 2 days. Juvenile continues to come back to pole to roost for the next week. She is seen fishing and playing on the wind around Woodbury Point, most days.*

***September 25th** - Juvenile looks strong and steady--has left for wintering grounds. Success!!"*

Bald Eagle

Between Balfour and Castlegar in the West Kootenay, twelve known eagle territories were checked by **Janice Arndt.** Pairs were observed at ten of these and young were successfully raised in three nests.

Gary and **Sharon Lelliott** have been monitoring an eagle's nest between Castlegar, Ootischenia, and Blueberry since 1999. In the last two years they have been checking on a nesting pair of Bald Eagles at Blueberry Creek (Figure 100) which they

assume are the same pair. The initial nest built in 2008 blew down while chicks were still in the nest. A new nest in 2009 was built close to the original one. What's different about this site is that they have a bird's eye view into the nest, so can count the number of eggs and watch the chicks as they develop.

Figure 100. Adult standing watch over three downy young eaglets in a nest at Blueberry Creek, BC. 3 May 2009 (Gary Lelliott).

Cyril Colonel and **Linda Van Damme** monitored 12 known territories in the Creston valley, along with a newly discovered one. The new site was a refurbished Red-tailed Hawk nest which was built in 2004, but was last occupied in 2006. Bill Piper, a local pilot who builds and flies his own single engine planes took an interest in reporting on the status of the Bald Eagle nests whenever he was cruising over the valley. His reports helped fill in the gaps for nests not easily accessible by land.

Thanks to the Hancock Wildlife Foundation, people from around the province were able to observe a pair of Bald Eagles at the Victoria/ Sidney nest successfully raise triplets for the second year in a row. Here's the link: http://www.hancockwildlifechannel.org/index.php?topic=cam-sites

Red-tailed Hawk

In the Creston valley, **Linda Van Damme** and **Cyril Colonel** checked 51 nests, of which 28 were occupied by Red-tailed Hawks. The other nests were either empty or occupied by pairs of Canada Geese and Great Horned Owls. One nest was refurbished by a pair of Bald Eagles.

Nest Box Trails and The People Who Monitor Them

A variety of species such as waterfowl, owls, swallows, bluebirds, chickadees, nuthatches, wrens, woodpeckers, mice, and squirrels have benefited from the many thousands of nest boxes that have been installed in a variety of habitats throughout our province.

In 2009, the following **26** species utilized nesting boxes: **Wood Duck**, **Bufflehead**, **Common Goldeneye**, **Barrow's Goldeneye**, **Hooded Merganser**, **American Kestrel**, **Northern Flicker**, **Barn Owl**, **Western Screech-Owl**, **Northern Saw-whet Owl**, **Purple Martin**, **Tree Swallow**, **Violet-green Swallow**, **Black-capped Chickadee**, **Mountain Chickadee**, **Chestnut-backed Chickadee**, **Red-breasted Nuthatch**, **Pygmy Nuthatch**, **Bewick's Wren**, **House Wren**, **Western Bluebird**, **Mountain Bluebird**, **European Starling**, **House Sparrow**, **Deer Mouse**, **and Northern Flying Squirrel**.

Figure 101. A plea to submit details of the occurrence of the European Paper Wasp in nest boxes, and their potential effect on birds nesting in boxes, was published in the 2008 annual BCNRS report. Many people complied. Vernon, BC. 15 June 2009 (Vicky Atkins).

It seems the **European Paper Wasp** Figure 101; (see BCNRS annual report for 2008) is more of a problem in southern British Columbia then in regions further north. **Sandy Proulx** of **Williams Lake** did not notice the presence of wasps in the Cariboo, but did encounter them at a nest box in Barrier. He felt that a Violet-green Swallow had abandoned a nest due to a wasp nest inside the

box. In the northern Okanagan valley, **Vicky Atkins** found wasps in many of the nest boxes put up on fence posts along the road to *The Allan Brooks Nature Centre* in **Vernon**. In the **Creston valley**, **Lorraine Scott** and **Sharon Laughlin** found 13 out of their 31 boxes had wasp nests and some of these boxes were not used by swallows.

Although the presence of wasps was a problem for some nest box monitors we didn't receive enough information to indicate that it was a major concern.

On an annual basis, many passionate and dedicated individuals monitor the contents of nesting boxes and transfer this information to individual nest record cards or summary sheets. Once the nesting season is over a final trip is made to complete maintenance of boxes which will continue to provide a safe, clean home the following year (Figure 102).

Figure 102. Many species of cavity-nesting species in British Columbia have benefited directly from the placement of nest boxes in rural and human disturbed landscapes in southern British Columbia. This recently-fledged Western Bluebird is the product of the nest box program. Lister, BC. 10 July 2009 (Brent Wellander).

This season we wanted to hi-light some of these committed people, all BCNRS contributors, and acknowledge them for their efforts in gathering scientific information that can then be used towards the conservation of cavity-nesting species.

Together these naturalists have monitored **2,509** boxes with a combined **50** years of effort.

After the nesting season in 2009, **Linda Van Damme** thought about contacting regular nest box monitors to ask if they would be willing to participate in a brief summary of their activities over the years and have them included in the 2009 annual report. Most were surprised that they would be asked but a record of their volunteer effort to the BCNRS is important to have on record.

Linda wanted to blend the task of checking and cleaning the boxes as well as personal memories of the people setting aside time to help the birds. She specifically asked for information on:

- area covered and number of boxes monitored;
- total number of years spent monitoring;
- wildlife use of the boxes;
- anecdotal information and memorable stories; and
- a personal photograph, preferably from the field.

The accounts below are listed from north to south and are in no particular order. Everyone has contributed at a level that is special for the seven general areas listed.

Cariboo

Anna Roberts [Figure 103]

"1n 1978 members of the Williams Lake Field Naturalists put out 1,000 bluebird boxes in the Bechers Prairie area, west of the Fraser River. The motivation was to increase the number of bluebirds to help control a grasshopper problem in the Chilcotin grasslands. At that time local ranchers agreed to stop using chemicals for grasshopper control.

Over the years around 16 naturalists have replaced, maintained, and monitored these nest boxes. Now there are approximately 780 boxes in this area being used by Mountain Bluebirds and Tree Swallows. Mountain Chickadees occasionally use boxes that have been placed near groves of trees.

Blowfly larvae feed on nestlings in many of these boxes. We have found that one of the control agents of this blowfly is a small parasitic wasp, Nasonia, that lays its eggs on the blowfly larvae at the time these larvae are sucking blood from

nestlings. These tiny wasps develop inside the red blowfly pupa, over wintering in the nest box and emerging in spring. However any unparasitized blowfly pupa do not overwinter in a nest box, but leave the box as adults in mid-summer."

Figure 103. Anna Roberts, who initiated the interest in birds, and other wildlife, in the Cariboo-Chilcotin in the 1950s and 1960s, when it was not in vogue, continues to participate in monitoring and natural history activities while starting her eightieth year. Chilcotin River, BC. 25 April 1990 (R. Wayne Campbell).

Sandy Proulx [Figures 104 to 106]

"*In 1992 I found a nest box with 6 young Bluebirds that had the top knocked off with cattle rubbing on it. I repaired it and all the young fledged in about 10 days. I contacted the Quesnel Naturalists who had put up the boxes a few years earlier, they said if I was willing to look after the boxes please do, so that's how I got started.*

In 1993 I had a small trail of about 20 boxes and had 5 Bluebird nests. That winter I build another 100 boxes and put up more trails in the Quesnel area. Every winter I would build more boxes for more trails and to replace the old or damaged ones, until I had over 400 boxes in the Quesnel area. With more boxes the numbers increased from 15 Bluebirds fledged in 1993 to 622 fledged in 1998, and about the same number of Tree Swallows.

In 2002 we moved to Williams Lake and started some new trails and I started monitoring the trail of Kate Moffat & Eugene Johnson south of Alkali Lake. In 2004 I monitored 520 boxes, and had 1060 Bluebirds fledge from Alkali Lake to Quesnel as I still had some boxes there that I looked after. The

Figure 104. For the past 18 years, Sandy Proulx has dedicated many hundreds of hours to monitoring and establishing bluebird trails and has been amply rewarded with the abundance of young bluebirds fledging each year. 30 May 2009 (Rita Proulx).

Quesnel Naturalists and several other people have taken over monitoring the Quesnel trails and are doing a great job. Also here some people looking for a route have taken over some of my trails. The Alkali Lake trail has grown to 180 nest boxes and a Ph.D Student, Erin O'Brien, from UNBC has been doing research and monitoring the trail the past four years.

I used to use Red Cedar that I got from a small mill in the Wells area but later switched to plywood. I became a member of the Southern Interior Bluebird Trails Society in 1995 and started using the Vern Johnson slot box which I found the Bluebirds preferred and was easy to make and also easier to repair out in the field. In 1997 I received a grant of $175. from Friends of the Environment for materials, and SIBTS has been helpful with material and boxes but most of the boxes I make on my own. Scout Island Nature Center and Fred McMechan have been a big help the last few years in cutting the plywood.

The boxes are used mostly by Mountain Bluebirds & Tree Swallows but I do get a few Mountain & Blackcap Chickadees and occasionally get House Wrens and Violet- green Swallows. My biggest problem with predators is Black Bear as they can do a lot of damage if they get started; I usually have to move the boxes from that area. I also have had several boxes stolen, some with young birds in them. In the West Fraser area where I have a trail, a pair of Bluebirds built a nest in a cowboy boot up

Figure 105. The cowboy boot beside the nest box was the original nesting site which would have been too crowded for a family of six. West Fraser in Quesnel, BC. 1996 (Sandi Latin).

on a shelf in a front porch. Six young hatched and with very little room in the bottom of the boot, I took the top off a slot box and put a new nest in it and placed it beside the boot and then put the two day old birds in the box. Within minutes the adults were feeding the young and all six fledged. I also had Tree Swallows make a nest over a Bluebirds nest that had eggs under the Swallow nest and one of the Bluebird eggs hatched and fledged along with the young Swallows.

I still monitor over 200 boxes mostly west of Williams Lake and go up the West Fraser Rd. about 70 km. north and will be back up to monitoring around 400 boxes when Erin is finished with her research.

I find very few dead young in the slot box and I think one reason is they all have a more equal opportunity at being fed, and also ventilation is better. I do find a lot more dead young Tree Swallows than Mountain Bluebirds. I usually have more Swallow nests & eggs but always fledge more Bluebirds. One reason maybe, when the weather turns cold or raining for a few days I think the Swallows have more trouble finding feed.

When I first started using the slot box I paired them with the standard box and over a three period the Mountain Bluebird chose the slot 75% over the standard. But also the Tree Swallows, if they have a choice where there is one of each type of nestbox they will nearly always take the round hole. Most of my trails are now mostly all paired slot boxes and Tree Swallows have no problem with them, but if have a choice they use the standard box."

Figure 106. The Johnson slot nestbox design which Sandy Proulx has found to be very successful with bluebirds.

Note: Nest box designs are available through the Southern Interior Bluebird Trails Society at: www.bcbluebirds.org/

Beverly Butcher [Figure 107]

"*I began monitoring in 1992 when a now dear friend suggested she and I do a route together. Our route was Hwy 20 west of Williams Lake on and around the Stafford's Ranch. We did it together for one season then I did it on my own until 1997 when I began my present route on Dog Creek Rd. from Frost Creek until the top of Alkali Lake hill.*

I have bluebirds, tree swallows, chickadees (both kinds), and sometimes starlings though not any since I began to use more Johnson slot boxes. I've received the box pieces from the Southern Interior Bluebird Trails Society in Penticton. The pieces were cut out by high school students and I assembled them. Sandy Proulx from Williams Lake, a director of SIBTS brought the pieces and boxes to me and I assembled them. I have 119 boxes along 22 miles.

For the past few years I've been putting squares

of white cardboard on the floor of the box so I can tell if there are Blowflies present. I just pull the cardboard out without disturbing the nest.

You never know what you'll find in a box!!. One must always be careful when opening a box as one time I was checking a box and a red squirrel bolted out and slammed me in the chest then ran up on top of my head, up one arm and down the other. My arms were flailing around and I was jumping up and down screaming my head off. I don't think the squirrel knew what to do but after it left me, my heart was pounding, my mouth was dry and I looked around to see if anyone had seen this whole shocking event, thankfully I was too far away from people!! It was a heart stopping moment for me.

I thank the day my dear friend Peggy Aiken introduced me to nest box monitoring as I've spent many pleasant summers doing what I consider a service to conservation and helping in a small way."

Figure 107. Beverly Butcher checking one of her many nest boxes along her route in the Williams Lake area.

Kris Andrews [Figure 108]

"I took over Steve Howard's bluebird routes in 2004. One along the west side of the Toosey Indian Reserve at Riske Creek and one on Essler Road near Williams Lake. I have about 30 boxes. It is a great route through the grasslands. Lots of vesper sparrows and meadowlarks. Usually find a nest or two while checking the boxes. But this summer I was very disappointed. What looked like a great crop of eggs and birds turned into a disaster as a bear demolished about 10 boxes with bluebirds in them. It's a lot of work to replace them as my route is away from a driveable road. Hopefully I can recruit some help to carry new ones down to the fence and take the old ones out. I am thinking of buying some hardware cloth and wrapping my new boxes in it to see if the bears will leave the birds alone. Worth a try, unless you have had some experience with this problem and have some ideas of how to discourage bears from tearing the boxes off their posts or apart.

My only other exciting find on the bluebird route this summer was at my Essler road route. Just a short route near town with 6 boxes. Usually only 2 or 3 have birds in them, but often they double

Figure 108. Kris Andrews numbering one of her many boxes along the Toosey route at Riske Creek. Summer 2009 (Sharon Henry).

clutch. This year I had a new species a chickadee family in one of the nest boxes. I guess because there is a lot of young aspen springing up along my fence line and the grassland is disappearing or is farther away."

Lorna Schley

"*The Dragon Lake Bluebird Trail (Quesnel area) was established a good many years ago by Sandy Proulx. A group of Quesnel Naturalists took over the monitoring of this trail in 2007. We set up a schedule in May and take turns inspecting the nest boxes every ten days. The results are circulated by email so that we can refer to them when it is our turn to go out. With ten to twelve people in the group, we usually partner up and each pair visits the boxes twice during the season. In the fall, some of us go out and clean out the boxes and in spring check them again before the nesting season begins.*

Our route has 14 pairs of nest boxes, with the first set located near Dragon Lake at the KY Ranch and the others bordering farmers' fields along roads south of the Dragon Lake area. We begin at Dragon Lake Road, then travel along Johnson Road, Dale Lake Road, Durrell Road, and finally observe two sets of nest boxes on Zschiedrich Road in the Kersley area.

In 2009, there were eight boxes with mountain bluebirds nesting and nine with tree swallows. Out of a total of 33 mountain bluebird eggs, 24 hatched and 23 fledged. Of the 50 tree swallow eggs, 43 hatched and 39 fledged. Overall, the numbers of mountain bluebirds were down from the 2007 and 2008 results, perhaps as a result of the cool, wet spring. There was only one second brood of mountain bluebirds with only two eggs which didn't hatch. This compares with seven second broods in 2008 and eight in 2007. A squirrel nested in one of the boxes last year and we couldn't get rid of it.

The Quesnel Naturalists enjoy this project and more of our members are becoming interested in being involved. Our volunteers for 2009 were: Alex and Luanne Coffey, Marv and Lorna Schley, Orie and Gloria Kolenchuk, Adrian Leather, Marian Walker, Gerda Wittman (Figure 109)*, Mary Gradnitzer, Kathie Davis, Sally Hofmeier and Marg Dinsdale."*

Figure 109. Gerda Wittman looking into the nestbox captures the concentration and interest shown by those observing the nests and birds. 14 June 2009. (Anna Marshall).

Mackenzie

Vi and John Lambie [Figures 110 to 112]

"*We started keeping records in 1995, but we may have had some up before then. John* [Figure 110] *made all our boxes - some were hollow aspen boxes, others were made from plywood. Our nest boxes are not on the standard type of nest box route. We have ~ 200 boxes. Some are scattered around marshes and wetlands - Tree Swallows are willing to nest close to one another in an area where the boxes are on dead trees/snags surrounded by water* (Figure 111)*. Other nest boxes are located in cutblocks* (Figure 112)*. Putting the box on a pole in the centre of an area where a debris pile was burned works well as the vegetation tends not to come back as quickly in these areas. The boxes need to be removed once the new plantation gets about 8 feet high. Other boxes are located on the mill sites and at the horse corrals. Boxes are mainly used by Tree Swallows, with a smaller number of Mountain Bluebirds. On occasion we have had a Violet-green Swallow and our only records of House Wrens in the area have been in our nest boxes. We had Western Bluebirds check out one of our boxes for about two weeks - they stayed around the one box for about two weeks then left."*

Figure 110. Keeping a nest box trail active requires annual maintenance. Near Mackenzie, this period often occurs when working conditions outside are challenging for John Lambie (Vi Lambie).

Figure 111. Tree Swallow nest box over open water near Mackenzie, BC. (John D. Lambie).

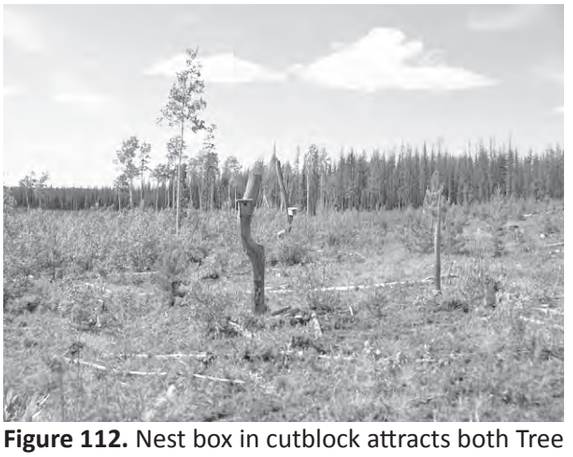


Figure 112. Nest box in cutblock attracts both Tree Swallows and Mountain Bluebirds. Near Mackenzie, BC. (Vi Lambie).

Okanagan

Willie Haras [Figure 113]

"*In 1995 Willie, wife Moreen and mother-in-law arrived in Kamloops and he immediately joined the Kamloops Naturalist Club where over the years he has been involved in the nocturnal owl counts, Long-billed Curlew surveys, duck breeding surveys, swan-eagle counts, Kamloops May Birdfests, Christmas bird counts and in 1998 he took on the challenge of monitoring and maintaining 40 to 45 nest boxes, supplied by Ducks Unlimited, for cavity-nesting ducks.*

In 2004 he assisted a fellow club member with the bluebird trail at Dew Drop Flats, north of Kamloops Lake then inherited the area for his own in 2006.At last count the route consists of 40 nest boxes, 24 monitored by vehicle and the remainder on foot. The majority of boxes house Mountain Bluebirds and one or two pairs of Tree Swallows. First hatch occupancy may be as high 50% while the second as low as 4%. Failure to fledge are as a result of predation by Black Bears, Gopher Snakes

Figure 113. Willie Haras birding along Tranquille Road with members of the Kamloops Naturalists Club.

and European Starlings, nestling dying of heat or unknown causes, abandoned nests and sterile eggs.

Unusual events range from finding a Gopher Snake coiled in a nest box sleeping off a night feeding on Bluebird nestlings, one box used as a dumping site for 10 surplus eggs and one pair of Mountain Bluebird's persistence in producing three batches of eggs that kept disappearing before a successful fledging.

Willie is a strong believer in the principle that even a poor day of birding is far better than a good day of work."

Laurie Rockwell [Figure 114]

"I began my trail of 7 boxes 10 years ago. It is located along the outside of the fence line of Field #20 at the Pacific Agricultural Research Centre in Summerland .As I was walking along the fence line to get to the area where I have been studying the Gray Flycatcher for 20 years, and seeing Western Bluebirds in and around this field, it occurred to me that I should set up a bluebird trail that I could readily monitor on my weekly hikes.

I contacted the Southern Interior Bluebird Trail Society (SIBTS) and was put in touch with Terry Tellier, President, and her husband Greg. This couple were founding members and have since been given a special award for their contributions to the SIBTS and bluebird rehabilitation by the North American Bluebird Society (NABS). At this time Greg made all the Johnson slot Boxes for the SIBTS. The late Vern Johnson of Oliver designed this box. The unique feature is a 1 3/16 slot under the roof for entry, not the usual hole. This box, which to me is the best bluebird box design I have used, has been officially adopted by the NABS. The slot seems to deter Northern Flickers that always want to make the standard hole larger, but not a slot!

Unlike many bluebird trails this one has no vehicle access; the closest I can get by driving is about 1 km. Since I monitor the trail on the way to my Gray Flycatcher site, I check on the trail only once a week, unless I make a special trip.

The Western Bluebird is the only bird species that has used the boxes on this trail. A pair of Violet-green Swallows abandoned their nesting attempt a few years ago for some unknown reason, after laying down a few grasses. Bears are not a problem. About 5 years ago I had an infestation of the invasive European paper wasp, Polistes dominuls, building nests in the boxes, but last year I removed very few from my boxes as it is apparently on the decline in the Okanagan. I have not ever been stung in the process as I usually remove them early in the morning when they are sluggish. The biggest threat to this trail is the increasing traffic from hikers, mountain bikes and motorized vehicles as the only path past the fenced area abuts the fence. I have had one "looky loo" opening all the boxes during nesting season for the past 2 years. While only 3-4 of the boxes used every year, with a couple of re-nests, I feel that all this disruption discourages more nesting. Dick and Julia Cannings banded bluebirds in this area in 2005, but I have not seen and banded birds in or near my boxes."

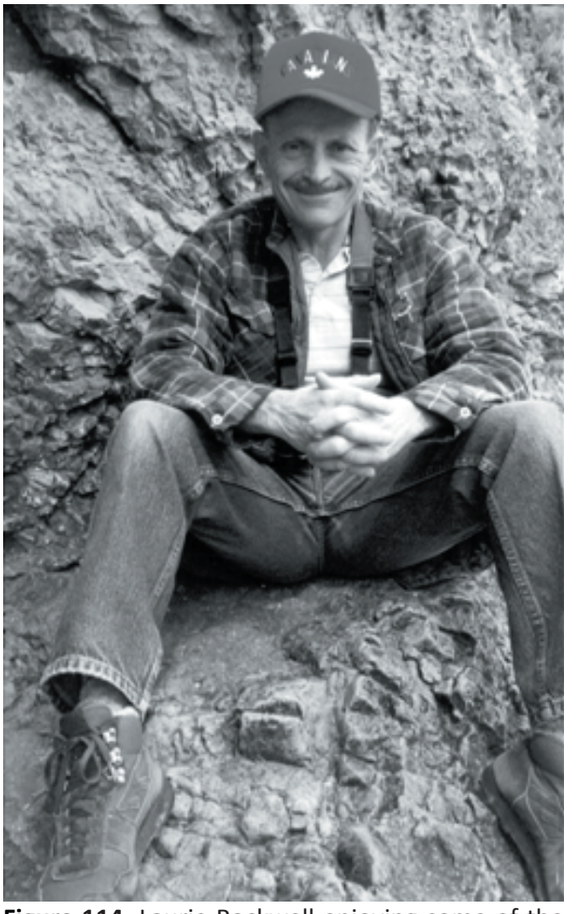


Figure 114. Laurie Rockwell enjoying some of the natural landscape in the Okanagan Valley.

Lloyd and Vicky Atkins [Figures 115 and 116]

"*We started monitoring the 20 nest boxes around the Allan Brooks Nature Centre in 2005. That year there were 5 tree swallow nests and 1 house sparrow nest. Subsequent years are as follows: 2006, 10 tree swallows nests and 1 western bluebird nest; 2007, 8 tree swallow nests, 1 mountain bluebird nest and a pair of western bluebirds raised two broods; 2008, 13 tree swallow nests; and in 2009, 13 tree swallow nests, 1 house wren nest and 1 western bluebird nest. This year we have added 13 boxes - pairing up some of the existing boxes and putting the rest along additional sections of the fencing around the Centre.*

We did look after another route of 12 boxes for several years but it has been abandoned. There were never any bluebirds; fewer tree swallows were nesting each year (none last year) and more often the nestlings were dead; and the house sparrows were claiming more of the boxes. The route was next to an orchard but we don't know if that had any relationship to the dead nestlings. Alice Beals assisted in monitoring this route.

This year at Rose's Pond on The Commonage we put up 44 boxes that Lloyd made from an old cedar fence a neighbour replaced. Many years ago the water level rose and killed the aspens growing around the edge of the pond. These snags were a haven for tree swallows. Now a large number of the trees have fallen down and the starlings are taking over many of the remaining holes. One slot-entrance box was attached to each fence post for a high-density experimental purpose, with Tree and Violet-green swallows in mind."

Figure 115. Good birding friends, Alice Beals (left) and Vicky Atkins, at Swan Lake, Vernon, BC.

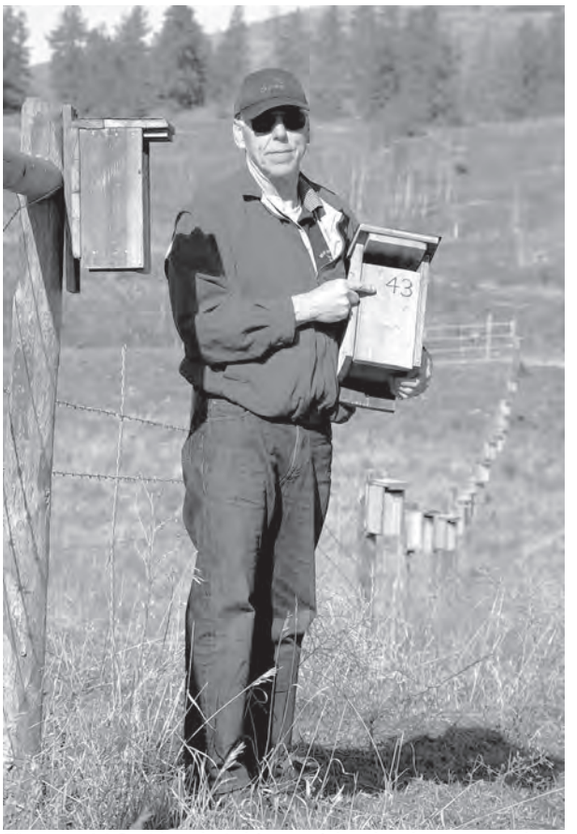


Figure 116. Lloyd Atkins with slot-box nest box design on new route along the Commonage, near Vernon, BC. (Vicky Atkins).

Clifford Day [Figure 117]

"*My bluebird box route is about 12 km SSW of Vernon on what I call the Brian Griffin Farm in an area known as the Commonage. I monitor 18 boxes. Brian supplied the material and made 16 and I have added a couple more. I don't know when I started the route, probably about 15 years ago. Brian doesn't remember either.*

I see a few dopey wasps in the spring when I check the boxes but they are not a problem. I clean the boxes in the fall and find a lot of earwigs. I have had a squirrel enlarge the hole and occupy a box. I have seen chipmunks and I think they have been guilty of raiding a nest once in a while. I think snakes are a major predator but they don't take many. The boxes are occupied by tree swallows, western bluebirds and house wrens. The bluebirds nest the earliest and usually hatch two broods of four or five."

Figure 117. Clifford Day in Vernon, BC.

Betty Walker [Figure 118]

"My nest box route is at Gallagher Lake, 7 miles north of Oliver under the McIntyre Bluff, running north and south between Okanagan River and Highway 97. I monitor 10 boxes mounted on steel posts and includes a metal guard. These are slot boxes first made by Vern Johnson of Oliver who started the Southern Interior Bluebird Society in about 1985. There are several bluebird trails in the Oliver area and in the interior stretching as far north as Fort St. John.

The boxes I monitor provide nests for bluebirds and Tree Swallows. Vern Johnson and my brother Alf installed many of the boxes including the 10 I monitor. We have very few predators though one year a bear attacked 2 boxes in the fall and one had to be replaced. Most of the boxes in this area are located at higher altitudes where severe heat is not an item.

I have two partners on the monitoring job. We have in the past had much fun crawling through the gates. The farmer in the area took pity on the three elderlies and built a lovely gate for us. Sorry I can't provide a photo of us crawling through fences.

You ask about wasps, they have on occasion made their presence known but I don't really think we lost any nestlings to the wasps.

This year we had only one box used by bluebirds, but there were about 6 boxes used by the Tree Swallows., they enjoy the location by the river. I think the guard we use on steel poles and the slot in the box account for our success (about 20 bluebirds and 25 tree swallows)."

Figure 118. Betty Walker enjoying time-out with granddaughter Charlotte. December 2008.

West Kootenay

Dirk Pidcock [Figure 119]

"*Over the past 18 years I travelled to the Argenta/Duncan River valley where I monitor nesting boxes. Besides the 60 plus boxes at the north end of Kootenay Lake, I also established and monitor some 20 more in and around Kaslo where I live.*

I organized a nestbox building bee in about 1992. Lumber was donated by Meadow Creek Cedar and volunteers did the work. Roy Lake of Meadow Creek created several dozen boxes single-handedly. Many of these original boxes are still in use. In more recent years we have purchased kits from the Southern Interior Bluebird Society. Roy Lake was my partner-in-crime for the first years in establishing and monitoring.

Most years there would be two or three Mountain Bluebird nests...and our great hope was to encourage that population. That has not happened, so I have accepted that we mostly benefit Tree Swallows. Gail Spitler arranged for nestboxes

to be placed at the Duncan Dam site and the two of us monitor some 16 boxes there. It has become the most likely site for Mountain Bluebirds. Other species using nestboxes have included Violet-green Swallows, Black-capped Chickadees, Chestnut-backed Chickadees, Northern Flying Squirrels and field mice. In earlier years when I had more energy I would monitor boxes two or three times a season. Now I check them in the early spring and clean them in the early fall. Yellowjackets have become a big challenge and some years blowflies cause many casualties. But by far the biggest factor is weather. Cold, wet Junes are deadly for nesting swallows... and we have had more than our share over the years.

Figure 119. Dirk examining and removing the season's nest from a nestbox at Duncan Dam, BC. 2 October 2009 (Gail Spitler).

In early October of '09, I have committed several hours to nest box monitoring and cleaning. As they say "better late than never!" For the north end of Kootenay Lake it was a stellar year for Tree Swallows. The vast majority of the 50 boxes checked so far provided safe and productive homes for as many as 200 chicks. That's the good news, due probably to weather. The disappointing news is that not a single pair of bluebirds used one of the boxes. Some were seen in early spring but were just passing through. Over the years, I've come to realize that providing nesting sites for both Tree and Violet-green Swallows is a very good thing. I was not able to gain access to 12 boxes due to a very large bull...even though I spoke nicely to him."

Patricia Huet and Carla Ahern [Figures 120 and 121]

Carla Ahern, Director of Communications, Stewardship and Special Projects with the Creston Wildlife Management Area prepared the following brief history of Tree Swallow nest box monitoring.

"*Tree swallows seem to prefer nesting in boxes constructed by people, and they get very used to having their boxes opened so their eggs and young can be checked. Nest boxes at the Creston Valley Wildlife Management Area (CVWMA) have been monitored off and on for several years.*

A PhD student from the University of British Columbia conducted research on the tree swallow at the CVWMA in 1996-97. At this time, approximately 180 nest boxes were erected 15-20 meters apart along dykes in the Corn Creek Marsh unit and monitored regularly. The data collected from this study resulted in a doctoral thesis that examined how food supplies for the tree swallow affected metabolism and the number and success of young (Gary P. Burness, University of British Columbia, 2000).

Many of the boxes were monitored over the years since the study took place. Some boxes were maintained, other taken down and new ones put up. Between 1998 and 2005, approximately 70 boxes were monitored and maintained by CVWMA staff, volunteers and various youth participating in programs at the CVWMA.

Currently, there are 75 boxes that are being regularly monitored. Pat Huet (volunteer) and I (Carla Ahern, CVWMA staff) have been monitoring the boxes since 2008, from April to August approximately every 2 weeks. We submitted the data collected to the BC Nest Record Scheme.

High school students also participate in various ways. A woodworking class from JL Crowe Secondary School in Trail, BC constructed 44 swallow boxes for the CVWMA in 2008, which were used to replace some of the old and deteriorating boxes.

Monitoring the boxes is something that I always look forward to doing. Even the barrage of wasps and mosquitoes, although annoying, does not take away from the enjoyment. We get exercise and fresh air and see the development of the chicks unfold from egg to a well feathered, flying chick. It takes Pat and I approximately 3-4 hours to do the route. This year, we recorded just under 300 chicks that successfully fledged from the boxes. Mortality was low this year - the spring weather was mild and insects were plentiful when the chicks hatched which surely helped. Last year saw a high level of mortality in the first spring clutch - it was a cold spring, which can impact the available food source. Many did nest again and were successful with just under 150 chicks that fledged from the boxes that season.

I look forward to continuing to monitor the boxes over the years. In 2010 we will take down many of the old boxes, some of which are definitely past their "best before" date. We hope to be able to replace them, as visitors to CVWMA love seeing the birds busy at their boxes."

Figure 120. Patricia Huet examining contents of Tree Swallow nest box along Corn Creek Marsh, BC. 27 June 2008 (Carla Ahern).

Vic Cousineau [Figure 122]

"*Vic from Creston started his bluebird line a couple years after moving there in 1997. He started building his nesting boxes out of his garage with reject lumber from the saw mill. In spring 1999, he had approximately 40 boxes along Mallory Road near the golf course in Lister. Every year red squirrels also use the boxes. One year a flying squirrel had a family of two. His biggest delight is having a chickadee nest and looking forward to seeing more bluebirds nesting each year. Not uncommon to see Mountain Bluebird, House Sparrow, Tree Swallow, Violet-green Swallow, and Black-capped Chickadee nesting each year as well as Western Kingbird on power line hardware. Recently, in July 2009, he showed the 54th annual report of a nesting killdeer in which the neighbours observed daily while construction continued in the newly developed neighbourhood. The response was so positive that Vic was asked to give personal tours of his bird line."*

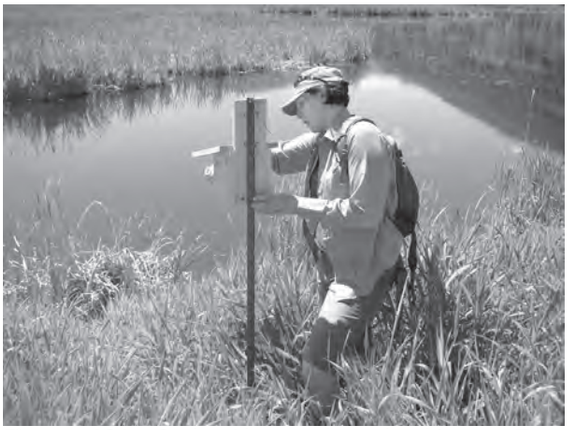


Figure 121. Carla Ahern also checking a Tree Swallow nesting box along Corn Creek Marsh, BC. 27 June 2008 (Patricia Huet).

Figure 122. Vic Cousineau checking one of his many nest boxes in Lister, BC. July 2009 (Cecile Counsineau).

Lorraine Scott and Sharon Laughlin [Figures 123 and 124]

"*In the Creston Valley, the Yaqan Nuki Wetlands Friendship society since 2003, has had the mandate for reclaiming and maintaining the Lower Kootenay Band wetlands infrastructure and wildlife habitat. As one of the founding members and field/ maintenance workers, we have had the wonderful opportunity to place and monitor bird nest boxes. In one area just north of a marsh and at the south end of LKB farmlands, we placed 31 boxes on fence posts. Fledgling success has increased yearly during this time. Nesting box species in this area includes Tree and Violet-green swallows, and in 2009 two broods of Western Bluebirds fledged. We also have 5 duck boxes around Tanal marsh. At least 2 have been used yearly by Wood Ducks. The nests are monitored about every 2 weeks. As the health of the marsh system and wildlife environment of the LKB wetlands have improved with the return of its water management, the bird numbers have escalated yearly - such a reward for our efforts.*

Three years ago the check point workers at the refuse site became almost instantly interested in the birds after I gave them an old bird book and binoculars. I would point out the nearby birds each time I visited the compound - what they ate - and some nesting habits. Soon I noted bird feeders erected from discarded feeders and assorted poles. One day we received a phone call stating that two of the most brilliant blue colored birds were flying around the site as if they were looking for some where to nest. We verified Mountain Bluebirds, quickly gained permission from Regional District of Central Kootenay, and erected 6 bluebird boxes along the western fence line of the entrance road. In 2009 we had Tree Swallows and 2 broods of Western Bluebirds that fledged. (12 fledglings in all). We even witnessed the young bluebirds of the first brood assisting the parent birds feeding the young of the second brood. In addition to the boxes, one Mountain Bluebird with young in a dead aspen tree hole at the same site was observed.

Above the LKB south marsh, where our house is situated, we have another 10 bluebird boxes. Over the years they have been occupied with Violet-green and Tree swallows, Black-capped Chickadees, a Mountain Bluebird as well as mice, red squirrels and flying squirrels. One day, upon investigating

Figure 123. Lorraine Scott attending to nest box maintenance along Lower Kootenay Band lands in the Creston valley.

a strange humming sound coming from one box, I disturbed a very large bumblebee under a 2 1/2 inch deep nest of grass and moss. Needless to say I withdrew swiftly - a reminder to look before putting one's hand in the box. I monitored the nest frequently and soon noted a dramatic population increase, with the hatchlings being about one quarter the size of the Queen. One day they just disappeared from the nesting site but we noticed a large increase of smaller bees in the general area feasting in flowers. Bumblebees used this same nest box for two consecutive years."

Figure 124. Sharon Laughlin repairing a duck nesting box on Lower Kootenay Band lands in the Creston valley.

Rita Wege [Figure 125]

"I have two areas where I monitor nest boxes. The first area is Glade (east side of Kootenay River north of Castlegar) and it is only accessible by ferry. At first there were six boxes at his location but as they fell off their posts I took them home and put them up in Shoreacres. All these nest boxes were built by the former Nelson Naturalists club. I've been monitoring the boxes in Glade for over 10 years. Typically, the boxes hold Tree Swallow nests but one year Black-capped Chickadees raised a family.The boxes in Shoreacres (west side of Kootenay River midway between Castlegar & Nelson) are located near the Kootenay River on open, flat fields of grass. I put them up 4 years ago when we bought the property and I monitor 12 boxes. The first year a pair of Mountain Bluebirds used a box but since then only Tree Swallows nest in them. Wasps are a problem in all the boxes!

Since moving to Shoreacres it appears to me that this area is a gathering spot for swallows during inclement weather. Last spring, on March 31st, I noticed the usual daily mob of swallows on the telephone wires at our home. But there seemed more than usual. So I did a quick estimate. At least 1,000 swallows (Trees and Violet Greens) were sitting there! Then I looked to the river and saw hundreds flying there. The weather that day was cold and snowy. Do the swallows like to congregate here when the weather is bad? The wires they sit on are in an open area where they have quick and easy access to the river and where they can spot an oncoming predator."

Figure 125. Rita Wege checking nest boxes at her Shoreacres property near Castlegar, BC. (Larry Prosser).

Campbell River

Ed and Thelma Silkens [Figure 126]

"*Campbell River has historically been the northern limit of Purple Martin nesting on the coast. Thelma, Vicki Hansen and I have been involved with helping in their return since 1997 when Vicki found a pair nesting in a nest box someone had installed several years previously on a piling at the Campbell River Estuary. Our efforts are part of the BC Purple Martin Stewardship and Recovery Programme started in 2000 and which is now coordinated by Bruce Cousins and Charlene Lee in Nanaimo. It's through that programme that nest boxes were built and installed at many of the known historical nesting sites. We monitor some 75 boxes at 6 sites in this area and have had good results. About 50 of these are at 2 locations, the Campbell River Estuary (20) and Oyster Bay (28) that in total fledged 61 young last season. Nearly all the nestlings are banded and, because most of the BC population is banded, we are able to identify the breeding birds in the colonies and also many of the non-breeders that visit or "hang out" for varying periods of time looking for breeding opportunities. The many hours spent band reading (by spotting scope) is one of the most enjoyable activities of the programme. Not only does it give one lots of time to observe the birds' behaviour and their interactions but also the satisfaction of identifying the individual bird allows you to trace its movement and in many cases find out some of its history.*

On the negative side, it makes one realize how problematical life is for the nestlings. A few days of cool windy weather or

rain with no insects and the population of young birds is decimated - like last year at the estuary. It has to be one of the most awful feelings to open up a nest box and find many if not all the young birds dead.

There's a few other interesting challenges too... like trying to read bands with a spotting scope in a canoe and a brisk wind blowing into Oyster Bay.

To date, all of our birds nest in boxes at marine sites. We have boxes at 2 areas on freshwater which were known historical nesting sites but to date there have been no Purple Martin nesting attempts there. The Violet-green Swallows and Tree Swallows like them though.Wasps have not been a problem. The boxes are checked pretty regularly and in the few cases where it happened they were removed. Predators have also not been a chronic problem here although this is not the case everywhere. We have Merlins that regularly visit the colonies especially during the time the young are fledging. When the Purple Martin numbers were still small it was a concern but now with a substantial population the Merlins are less successful and the martin losses do not appear to have much effect on the population as a whole. Certainly nothing like starvation."

Figure 126. Ed Silkens inspecting a Purple Martin nestbox at Oyster Bay, BC. (Thelma Silkens).

Powell River

Ivar Nygaard-Petersen [Figure 127]

"The story and the credit for getting the little Purple Martin colony going behind Myrtle Rocks has to go to Clyde Burton. Clyde told me that originally there were 2 or 3 old nest boxes around the pilings that a couple pairs of Purple Martins were using. Finally the boxes disappeared, so in 1998 he built, and put up 10 new nest boxes to see what would happen - well it happened!

In 2006, Clyde built and put up another 29 boxes for a total of 39 boxes. He did all of the banding on the hatchlings up until last year for the BC. Purple Martin Stewardship and Recovery Program from Nanaimo. Last year they sent two ladies over to do it, and they have Clyde along with the Powell River Naturalists Club to look after and maintain the colony.

I helped Clyde a couple of times, but mostly I just sort of kept to myself and went about keeping my own tabs on this colony since 2004. There was a couple of not so good years, but in 2009 there were

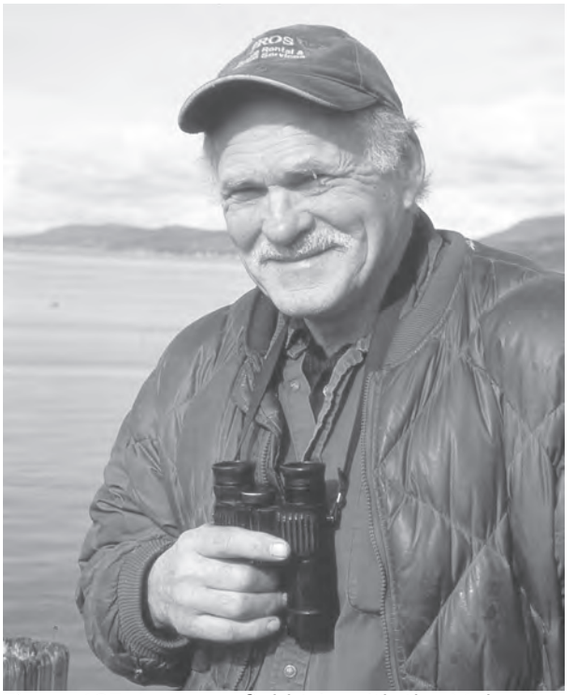


Figure 127. Ivar on a field trip with the Malaspina Naturalists Club. Powell River, BC. 23 February 2007 (R. Wayne Campbell).

32 boxes left after the winter storms. Ten boxes were used with 32 hatchlings from 3 to 11 days old and two more boxes with eggs in them, that was on July 20, 2009.

Despite being sheltered behind Myrtle Rocks, the little colony is very much exposed to the southeast gales and can take a real beating on high tides of 16+ feet."

Central Fraser Valley

Glenn Ryder [Figure 128]

"I have been monitoring nest boxes since 1955 to present day in various places on the mountain tops to the Fraser Valley lowlands. The start of my small owl nest box project started up by me back in 1955 in woodlands near to 15453 - 92nd Ave. North Surrey and in Green Timbers Forest Reserve. At its peak I had over 600 boxes scattered about Surrey to Langley. These nest boxes were old T.N.T. boxes plus oak barrels donated by the C.N. Railway and C.P. Railway. Barrels that the spikes came in and there were many good ones picked up had holes made in them for screech owl sized birds, etc. and some changes made to place them in trees. Back in the early years there was lots of smaller owls to be found such as screech owls and saw-whet owls. In the early years I had wild honey bees in my boxes all winter, in various places wasp nests to flying squirrels, Douglas squirrels, deer mice, spotted skunks, owls, bats to the modern day Eastern Gray Squirrels (dam pests). I had so many nest boxes to look after that I had to make a large map to show where they were. It was a massive job each spring cleaning them, checking for bird bands (and I found a few), placing new dry shavings or just replacing boxes. Not to forget some boxes had wood ducks nesting in them to the hooded mergansers.

But as the years passed the small owl habitat kept shrinking and today it is getting hard for me to find a screech owl and saw-whet owls seem scarce now also. Plus all the disturbance from people to invasive mammals etc. On Sumas Mountain I have had black bears rip my owl boxes off the sides of trees and damage them in recent years. My last screech owl nesting was in the Forslund Refuge land in Langley. A check of all three nest boxes in woodlands on April 15/2008 showed a female in box likely laying. But a check on May 15/2008 showed all nest boxes empty of owls. Nest box #1 that had the female western screech owl now was full of nesting materials of the Eastern Gray Squirrel. Also Box#2. But Box #3 had a female Douglas Squirrel with her young, she could stay.

In 2009 there was a male Northern saw-whet owl in cedar trees near nest box #1 at the Forslund Refuge land. No screech owls used any of the (3) nest boxes this spring, all were empty. On April 1/2009, I am back in the refuge land checking nest box #1. The saw-whet has hung about the area but no screech owl came back into area to nest.

I checked my small owl nest box in Hogan Family Nature Park in Abbotsford. It is full of twigs with dead green leaves etc. and the remains of a dead western spotted skunk. No owls or signs here on March 16/2009. Aldergrove Lake Park on same day had no owls but one box full of deer mice that come out in single file and drop to the ground. Barred Owls (2) in area."

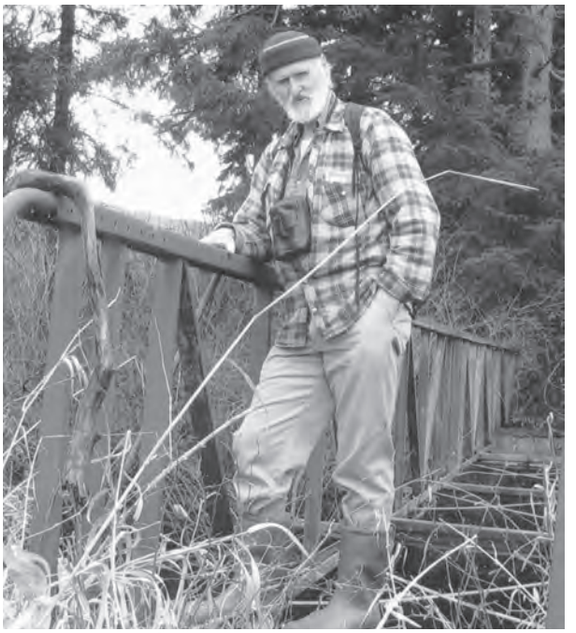


Figure 128. Glenn Ryder naturalizing at the south Alouette River, BC. in 2006 (Phil Henderson).

We have appreciated receiving the brief personal summaries presented above for a few of the more enthusiastic nest box monitors in the province. Their stories and experiences fortunately have been preserved in the files of the British Columbia Nest Record Scheme.

FROM THE SCIENTIFIC LITERATURE

Each year thousands of articles on birds are published in scientific journals that most of us do not see. Many of the papers are helpful to nest-finders to assist in their search for nests and broods, to understand the ecological associations of nesting birds, to learn about adaptations of body structures, and to better appreciate some of the problems facing ornithologists in their research.

We have listed below a few articles that should be of interest to participants.

The Influence of Feathers in Tree Swallow Nests: Insulation or Ectoparasite Barrier?

Hundreds of nest box monitors in British Columbia certainly know about the quantity of feathers used by some cavity-nesting species, especially **Tree Swallows** (Figure 129). Most people believe the feathers keep the mother and babies warm. Others suggest that they may conceal the incubating adult from predators while others think that white feathers are reflective and may help the parents locate their offspring in an otherwise dark home.

This has intrigued ornithologists for decades many of whom felt that feathers were important in thermoregulation. Recently, it has been suggested that feathers may serve as barriers to the number of ectoparasites (**lice, mites, and ticks**) that could potentially live on the body surface of nestlings and consequently impact their development.

Professor Susan Hannon, and students Sarah Stephenson and Herater Proctor, tested the possible roles of nest feathers and their effects on nest parasites on the growth and survival of Tree Swallows in Alberta. Using control and experimental nests, the researchers concluded that feathers did not serve as an ectoparasite barrier. Chick size and growth, however, was positively related to the number of feathers in a nest. The number of feathers, then, means better fledging success.

Condor 111:479-487, 2009.

Figure 129. The number of feathers a pair of Tree Swallows adds to their nest can positively impact the size and growth of nestlings. Near Mackenzie, BC. 11 June 2009 (John and Vi Lambie).

Estimating Detection Probabilities of Waterfowl Broods from Ground-based Surveys

Researchers Anthony Pagano and Todd Arnold of the University of Minnesota conducted ground-based waterfowl brood counts on 8 93-km^2 study sites in the Devils Lake Wetland Management District of northeastern North Dakota to determine waterfowl brood detection probabilities under a range of scenarios. What they found was rather interesting. By using a closed-population (wetlands ≤ 5 ha and no departure from natal wetland) mark-recapture technique with replication, the probability of detection for waterfowl broods varied with a number of factors. Waterfowl species accounted for a large percentage of the detection probability, with Blue-winged Teal (*Anas discors*) having the lowest average detection probability, and diving-ducks having the highest average detection probability. When all species were combined in the analysis, brood detection probability was highest in the morning or evening, and lowest in the afternoon (*e.g.,* Blue-winged Teal and Northern Shoveler (*Anas clypeata*) had a > 10% reduction in detection probability in the afternoon), but temporal variation among species meant that no particular survey window (*e.g.*, morning) was best for all species. Detection probabilities were on average about 10% better for experienced versus inexperienced (2 weeks of training provided) observers, and 4% better for

roadside (*i.e.,* from a vehicle) versus walk-up. On average, detection probability also increased with increasing brood size, total brood abundance, survey date, wind speed, temperature, cloud cover, and amount of time spent surveying each wetland, after correcting for natural bias inherent in the methods. The probability of detection decreased with increasing wetland size and amount of tall peripheral vegetation.

The authors concluded that, given the use of traditional, single-visit (non-replicated) wetland surveys, an estimated 67.5% of total brood abundance may be missed.

Journal of Wildlife Management 73:686-694, 2009.

A Third Incubation Tactic: Delayed Incubation by American Robins (Turdus migratorius)

Prior to this publication, birds were known to use one of two incubation tactics. They either (1) initiated incubation when the last egg was laid or (2) before the last egg was laid and the clutch was not completed.

The most common practice among birds, including the American Robin (Figure 130) is to start incubation before the clutch is complete. This strategy is most typical among species with young hatched naked and helpless (*e.g.*, altricial young). Waiting for the last egg to be laid before settling down to incubate is most common among species who chicks are born with downy feathers and who can feed on their own shortly after hatching (*e.g.*, precocial young). As expected, however, there is overlap in both categories especially in waterfowl, woodpeckers, and some passerines.

A third incubation strategy has been reported by researchers Karen Rowe and Patrick Weatherhead for a small population of robins in Illinois - delaying the start of incubation well after the full complement of eggs has been layed. This may be delayed for up to four days. This new tactic may be a means of delaying hatching to timing of available food resources or allowing the female to add to food reserves for the long incubation period.

Auk 126: 141-146, 2009

Figure 130. It has recently been learned that the American Robin may "abandon" its eggs after attaining the complete clutch and come back to start incubation up to four days later. Yohetta Creek, BC. 19 June 1993 (R. Wayne Campbell).

Nest Movement by Piping Plovers in Response to Changing Habitat Conditions

Shorebirds that breed on lakeshores in British Columbia, like **Killdeer** and **Spotted Sandpiper**, often have to face fluctuating water levels that may threaten their nests. There is anecdotal evidence in BCNRS files that nests have been found close to rising waters and a few days later found higher up with the same number of eggs. The clutches, usually four eggs, could not have been re-laid in the interval. This led to assumptions that the birds must have moved their nest and eggs to avoid flooding.

Ornithologists in North Dakota, led by Mark Wiltermuth, while studying the federally-listed **Piping Plover**, documented nest movement in response to changing habitat conditions. Eggs in seven of eight nests under observation and threatened by rising water levels, were successfully were moved to higher ground in newly established nests. In another event, a nest with eggs was moved when the area was disturbed by domestic cattle.

C*ondor 111:550-555, 2009*.

A Supplemental Function of the Avian Egg Tooth

The egg tooth, a small, horny, white knob noticeable on the tip of the upper bill of a hatching bird, is used to help weaken and break the eggshell so it can escape its calcium womb. It develops early in the chick's embryonic stage and grows rapidly reaching its maximum size just prior to hatching.

Dr. Karen Wiebe, a professor at the University of Saskatchewan, while studying Northern Flickers and other cavity-nesting birds in the Cariboo region of British Columbia, discovered another use of the egg tooth in birds. She suggests that it increases a nestling's visibility while growing up in its poorly-lit home. Karen noticed that in woodpeckers there are two egg teeth, one on each side of the tip of the bill (Figure 131). Through experimentation she was able to determine, using a spectrometer, that reflectance from the lightly-coloured "teeth" made the chicks more visible to parents and may be used as a signal between family members.

One cannot help wonder if egg teeth may have similar functions in other cavity and burrow-nesting species.

Condor 112:1-7, 2010.

Figure 131. A large nestling Northern Flicker ready to leave its nest but still showing the prominent egg tooth on its upper bill. Juniper Beach Park, BC. 25 June 1990 (Mark Nyhof).

Nest desertion by a cowbird host: an antiparasite behavior or a response to egg loss?

As concern grows over the biological and human management relationship between **Brown-headed Cowbird** and threatened passerine species, a lot of research is now focusing on the high costs of parasitism to the host species.

K. Kosciuch and colleagues, studied the potential of nest desertion in the Bell's Vireo which may be similar to other passerine species. They found that neither "*the presence of a single cowbird egg, which leads to nest failure for this host, nor the number of cowbird eggs received in a vireo nest influenced nest desertion*." In experimental nests, Bell's Vireo did not desert nests when vireo eggs were immediately replaced with cowbird eggs, but abandoned nests when vireo eggs were replaced with cowbird eggs the following morning.

Behavioral Ecology 17:917-924, 2006.

Demography of an Alpine Population of Savannah Sparrows

Although a familiar and common migrant and breeding species at low elevations, little is known about this ground-nesting bird in alpine habitats (Figure 132). Michael Martin, Alaine and Kathy Martin, researchers from the University of British Columbia, studied the ecology of populations breeding on Hudson Bay Mountain (elevation 1500 - 1850 m) near Smithers, BC. over a 6-year period.

Their results showed that the average length of the breeding season was 45.5 days and pairs were single-brooded. Higher breeding populations also had shorter breeding seasons, fewer broods per year, and larger clutches and higher adult and juvenile return rates that populations at lower elevations.

Journal of Field Ornithology 80:253-264, 2009.

Influence of Trees in the Landscape on Parasitism Rates of Grassland Passerine Nests in Southeastern North Dakota

There is widespread concern in North America that populations of grassland passerine species have declined significantly over the past 40 years or so. Some have suggested this may be due in part

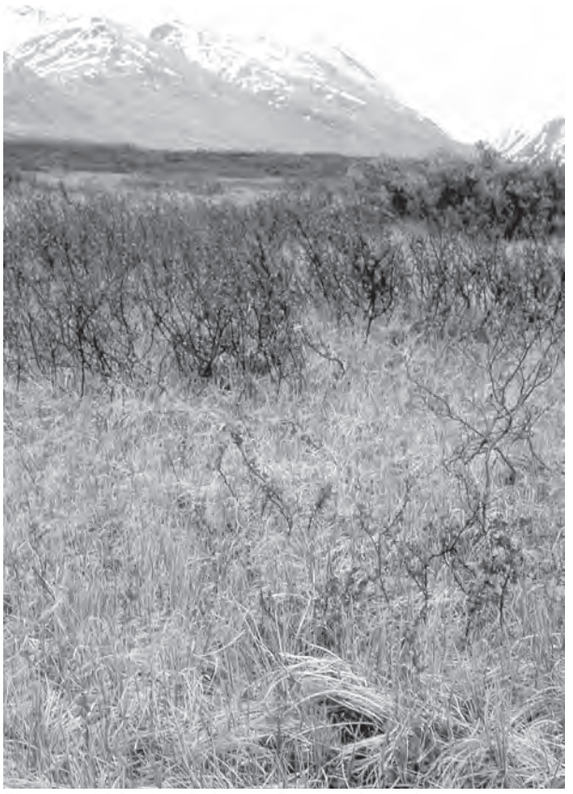


Figure 132. In British Columbia, high elevation nesting Savannah Sparrows laid more eggs, raised only one brood per year, and had a full breeding season that lasted nearly 46 days that differs markedly from populations nesting at lower elevations. Nest is located in clump of grass in fore ground. Shini Lakes, BC. 1 July 1983 (R. Wayne Campbell).

to parasitism by the Brown-headed Cowbird.

Anecdotal information suggested that tree cover in grasslands (Figure 133) may impact the rate of cowbird parasitism. Pamela Pietz and four other biologists from North Dakota studied this relationship and found where tree cover in the landscape was greater, Brown-headed Cowbird parasitism was reduced. It may be that cowbirds are switching their parasitic ways to other passerine hosts in nearby woodlands.

In British Columbia, prescribed fires in woodland habitats on grasslands, such as Bechers Prairie in the Cariboo-Chilcotin region, should be re-evaluated considering the composition of grassland-nesting species.

Condor 111:36-42, 2009.

Figure 133. Trembling Aspen and mixed conifer woodlands interspersed in grasslands in British Columbia may attract Brown-headed Cowbirds from parasitizing threatened grassland-nesting species. (R. Wayne Campbell).

USE OF THE BRITISH COLUMBIA NEST RECORD SCHEME IN 2009

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.

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*.

For safety and personal reasons some contributors retain a copy of their nest cards for reference before mailing them at the end of the breeding season.

Please check the **BCFWS** website www.wildlifebc.org for regular updates of nesting activities during the 2010 season as well as other pertinent information regarding the Society’s activities.

REQUESTING AND SUBMITTING CARDS

Please Note Our New Mailing Address

B. C. NEST RECORD SCHEME
P.O. Box 55053,
3825 Cadboro Bay Road,
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 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. Compiling all of the 2009 nest cards into species, grid, and contributor categories, and entering the information electronically, took over six 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** 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.

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** (Figure 134), a task that started in September 2009 and was completed when the last cards were received in February 2010. 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.

Figure 134. Jim McCammon and Eileen Campbell looking for Wood Frogs at Purden Lake, BC. 3 September 2003 (R. Wayne Campbell). Each year the father-daughter team sets aside many weeks to sort, compile, and enter breeding information from nest cards so annual reports can be written.

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. Phil Ranson helped with information in the main body of the report.

All photographers are acknowledged with their images in each figure caption.

Since the authors volunteer their time to write and compile the annual report, we sincerely appreciate the following individuals who contributed text and sent in photos to help us complete three major sections of the report. By category they include:

Notes from the Field: Patricia Huet, Robert W. Allen, Mark Nyhof, Bonnie Hooge, Quentin Brown, Lee Foster, Doug Leighton, Gary Davidson, Marlene Johnston, Phyllis Masson, Anna Rose, and Bob Steventon.

Long-term Monitoring: Ted Hillary, Monica and Ed Dahl, Sheila Reynolds, Janice Arndt, Gary Davidson, Lorraine Symmes, and Gary and Sharon Lelliott.

Nest Box Monitoring: Anna Roberts, Sandy Proulx, Kris Andrews, Beverly Butcher, Vi and John Lambie, Lorna Schley, Willie Haras, Laurie Rockwell, Lloyd and Vicky Atkins, Clifford Day, Betty Walker, Dirk Pidcock, Carla Ahern, Vic Cousineau, Lorraine Scott and Sharon Laughlin, Rita Wege, Ed and Thelma Silkens, Ivar Nygaard-Petersen, and Glenn Ryder.

Mark Nyhof provided the cover drawing of the American Robin fledgling and **Alistair Fraser** the delightful back cover photo of a Spotted Sandpiper brooding its chicks.

We greatly appreciate the time and effort of all our contributors which made 2009 an exceptional year. Thank you! Have a great 2010 season of nest box monitoring, nest finding, and brood counting.

… the young have chipped,
Have burst the brittle cage, and gaping bills
Claim all the labour of the parent bird.
Grahame, Birds of Scotland
(The Poets' Birds, 1883)

This report can be cited as: Campbell, R.W., L.M.Van Damme, M. Nyhof. and M.I. Preston. 2010. British Columbia Nest Record Scheme 55th Annual Report – 2009 Nesting Season. Biodiversity Centre for Wildlife Studies Report No. **12,** Victoria, BC. **92** pp.

APPENDICES

Appendix 1. Plumage Development of Young Waterfowl

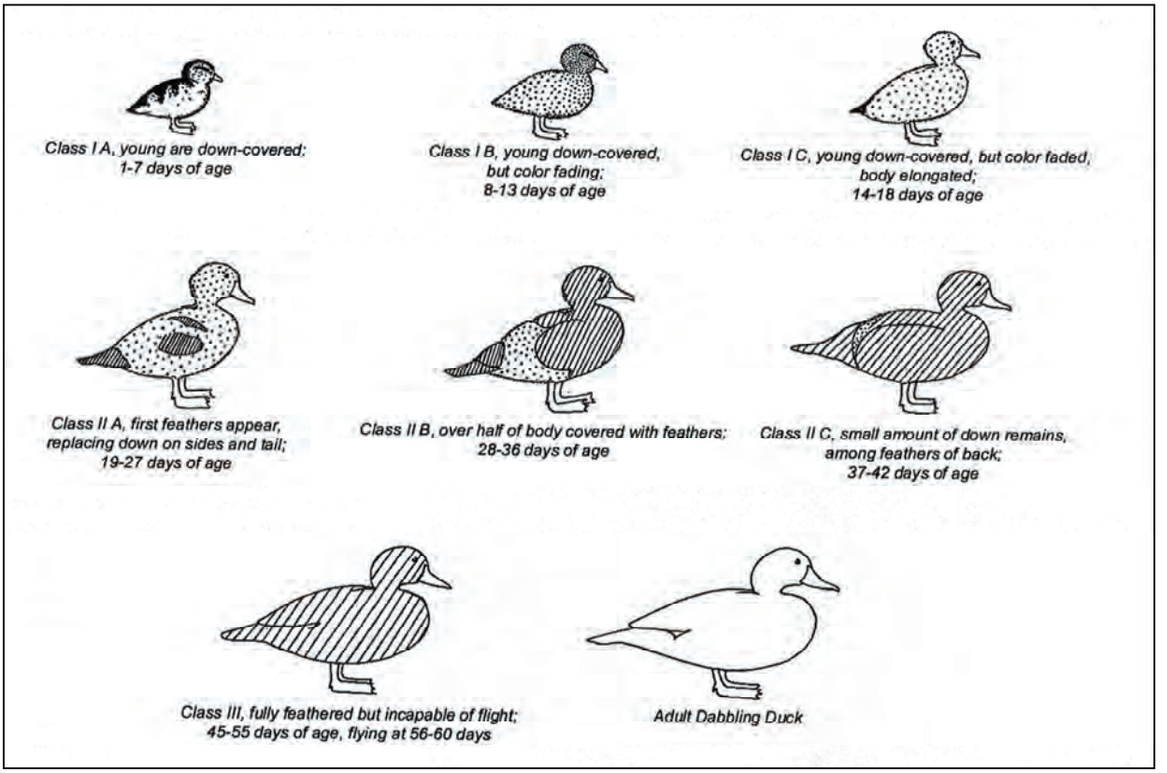
In the spring of 1997, the first B. C. Nest Record Scheme manual was issued by the WBT Wild Bird Trust of British Columbia, along with participating partners, as WBT Wildlife Report No. 1. An important omission in that manual was the inclusion of plumage changes of waterfowl developed by J. B. Gollop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

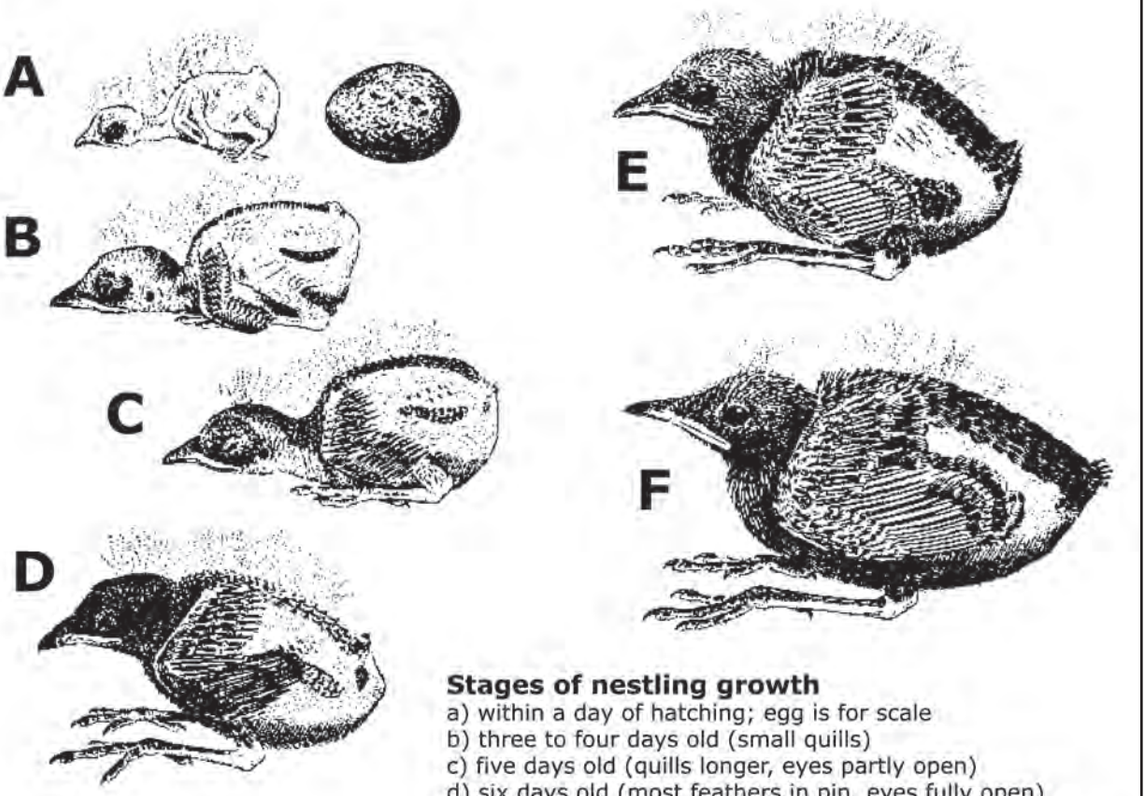
Contents of nest when found or last visited	Next visit should be	Notes needed at next visit
Nest under construction	2 - 4 days later, to determine laying schedule	No. of eggs, warm or cold; parent at nest or not
1 - 3 eggs	3 - 5 days later, to confirm completion of clutch	No. of eggs, warm or cold; parent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

NOTE: Most passerines have a clutch of 4 - 7 eggs, laid at daily intervals; incubation periods of up to 12 - 15 days;

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.

Figure 1. 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).

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 1). 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 2) 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 3).

Fledgling – *the short period when a young first leaves its nest until it is independent of all parenting care, especially being fed* (Figure 4).

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.

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 5)*, 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

Figure 2. 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 3. 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 4. 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 5. 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).

and gulls; Figure 6) 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 birds, including albatrosses, shearwaters, eagles (Figure 7), and gulls, may require up to four or five years to get their adult plumage.

Adult – a *bird's final, and breeding, plumage* (Figure 8). 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 while 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.

Figure 6. 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 7. 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).

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.

Figure 8. The pure white body of this Trumpeter Swan identifies it as a full adult. Cranberry Lake, BC. 22 January 2001 (R. Wayne Campbell).

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 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.

Appendix 5. 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 1) 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 2), 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.

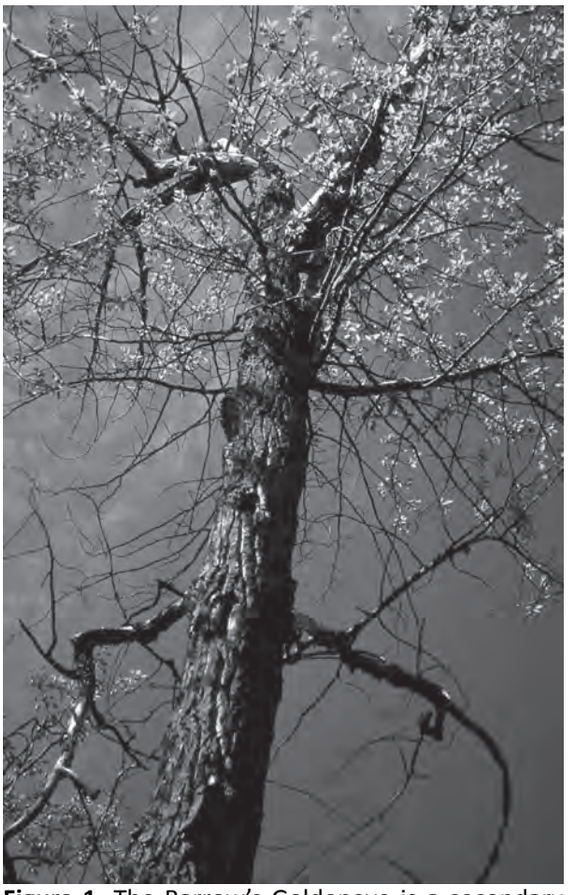


Figure 1. The Barrow's Goldeneye is a secondary cavity-nesting species that relies on primary excavators, like woodpeckers, to provide a nest site. The species also uses nest boxes. Tunkwa Lake, BC. 30 June 2008 (R. Wayne Campbell).

Figure 2. 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).

Ducks

Cavity-nesting duck species such as **Wood Duck** (Figure 3), **Common Goldeneye**, **Barrow's Goldeneye**, **Common Merganser**, **Hooded**

Figure 3. 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).

Figure 4. 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).

Merganser, and **Bufflehead** are the most difficult to monitor. Not many nest-finders observe the 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 4). 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 5), **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 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 6), an owl may appear at the cavity entrance (Figure 7). 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 8). 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

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 5. 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).

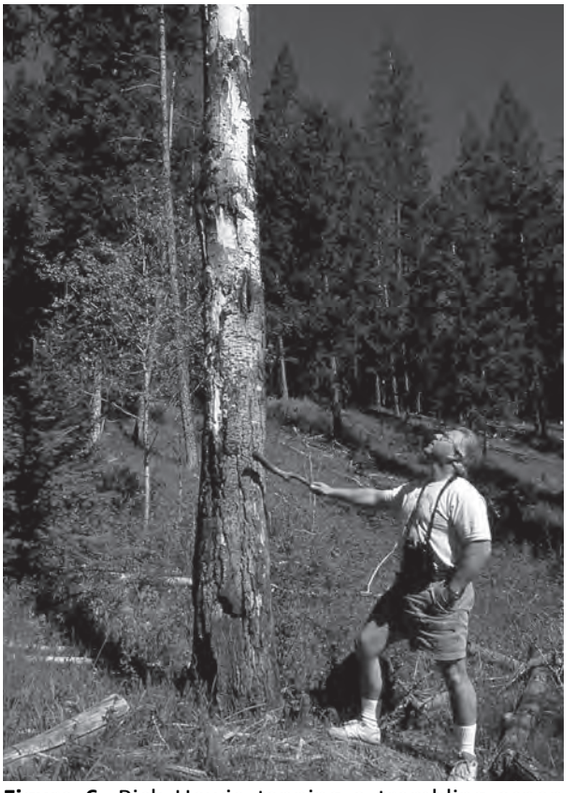


Figure 6. Rick Howie tapping a trembling aspen tree with several cavities hoping a small owl might appear at one of them. Near Kamloops, BC. 27 May 1995 (R. Wayne Campbell).

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*).

A sample of a completed nest card for the Northern Saw-whet Owl with pertinent information useful for data analysis is shown in Figure 9.

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 10) 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 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 11). Nestlings fledge approximately 30 days after hatching.

Figure 7. 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).

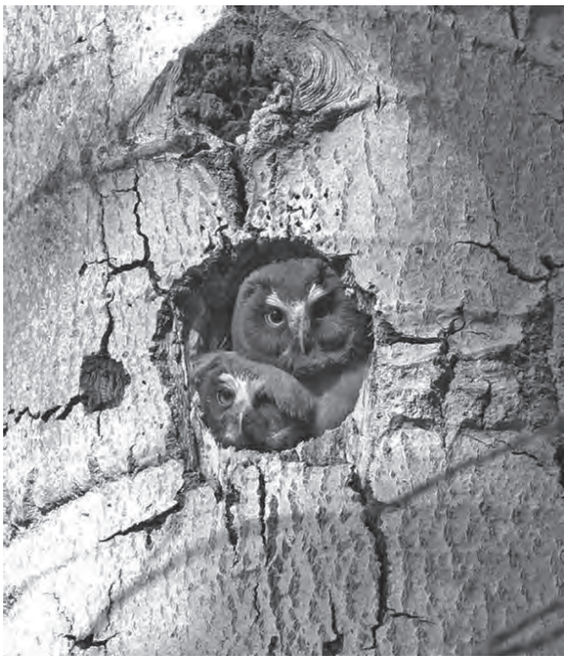


Figure 8. Two Northern saw-whet Owl nestlings peering out of cavity on 13 May 2006, almost a month after the occupied cavity was discovered. Note size difference between the two nestlings. Creston, BC. 13 May 2006 (Marcia Long).

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	feathered appeared at opening
					1 larger than other

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:

(did not tap on tree was there 3 hr.

Height above ground/cliff-base/water 7 m

UTM Zone 11 UTM Easting: 538835 UTM Northing: 5427586

Figure 9. Sample nest card completed for a Northern Saw-whet Owl nest found with nestlings in the Creston valley by Marcia Long in 2006.

Figure 10. 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 11. 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 12). Sometimes the species of woodpecker can be identified by its nest hole (Figure 13).

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 14) 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 12. 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 13. 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 14. 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 woodpeckers combined is 12-18 days, with fledging at 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 15). 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

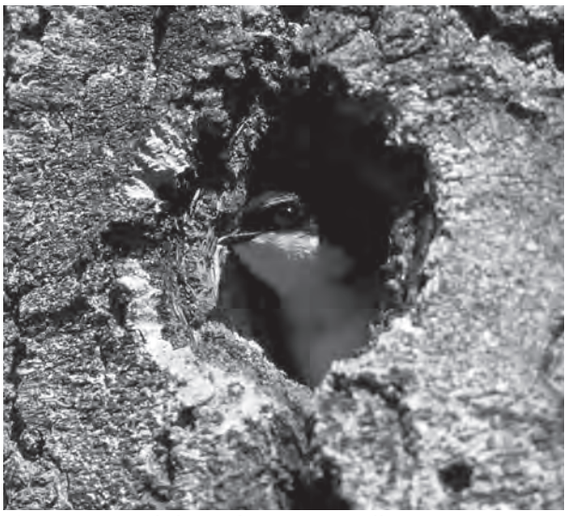


Figure 15. Adult male Tree Swallow peering out of cavity entrance in a live, but dying, trembling aspen. Sunset Lake, BC. 22 June 1997 (R. Wayne Campbell).

at the 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 16) 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

Figure 16. 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).

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 17.

Wrens

House Wrens and Bewick's Wrens (Figure 18) 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 19), 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

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

Figure 18. In British Columbia, the Bewick's Wren prefers to nest in natural cavities and crevices. Victoria, BC. 23 April 1980 (Mark Nyhof).

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 nesting species takes place once the young have hatched. One sign to look for is "*whitewash"* (Figure 20) 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

Figure 19. 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 20. 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).

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.

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 6) 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 21). Obviously a ladder is best, or a climbable tree, but sometimes the "prop" technique may be the only way to examine the contents.

Figure 21. 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).

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).

Appendix 6. 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.

PARTICIPANT PROFILES

Mark Phinney

Mark was born in Saint John, New Brunswick and spent his early childhood in the nearby rural suburbs. He recalls being interested in all animals from a very young age, but focused on frogs and toads since these were the only creatures he could catch and examine more closely! His interest in birds was sparked by yellow and black birds in the apple tree beside his window. A look through the Peterson field guide that his grandmother had given him a couple years earlier revealed that two species were present: Evening Grosbeaks and American Goldfinches. The feeders went up shortly thereafter and he never looked back. Mark's family moved around quite a lot in the 1970s and wherever he landed, Mark took a keen interest in the natural history of the area. His obliging parents put up with an assortment of boyhood 'pets' that included a raven, kestrel, Opossum, doves, turtles, owls, fox, Red-tailed Hawk, and an assortment of other wild critters.

While enrolled in the forestry/wildlife program at the University of New Brunswick, Mark's self-taught knowledge of birds allowed him to work for the Canadian Wildlife Service during summers. This provided valuable work experience and helped pay the tuition bills. After graduating in 1989, he joined the wildlife management team at Valley Forest Products Ltd. After a couple of years he then followed a university chum out to British Columbia - like so many Maritimers do. Unlike many, however, he stayed! Mark worked as a wildlife biologist at Industrial Forestry Service in Prince George for eight years beginning in 1991. During this time he was able to explore areas around central and northeastern BC, compiling and contributing valuable natural history observations. Wholesale changes were afoot in the summer of 1999 when Mark changed jobs, moved to Dawson Creek and got married all within a couple of months. Mark joined the Forest Resources Division of Louisiana-Pacific Canada in July of that year, and continues to work as their District Biologist.

Although life is busier (especially with two daughters) and time seems to pass more quickly, Mark still contributes to the British Columbia Nest Record Scheme and the Biodiversity Centre for Wildlife Studies. He is the co-ordinator for the Dawson Creek Christmas Bird Count, and runs a Breeding Bird Survey route each spring. Mark sits on the steering committee for the British Columbia Breeding Bird Atlas project and is the regional coordinator for the Peace region.