# British Columbia Nest Record Scheme

## 57th Annual Report

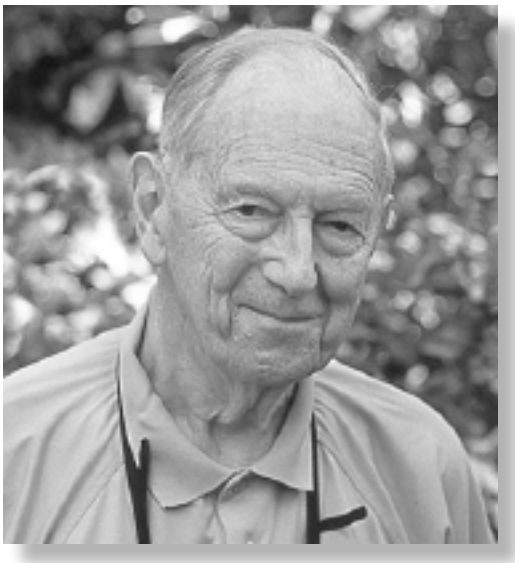
2011 Nesting Season

## BCNRS Participant Profile

### Ian McTaggart-Cowan (1910-2010)

Dr. Cowan was well known as an educator, scientist, and conservationist but less known was the fact that he was a supporter of the British Columbia Nest Record Scheme during its early establishment in 1956. Born on 25 June 1910 in Edinburg, Scotland, Dr. Cowan was in his 99th year when he died in Victoria on 24 April 2010.

He completed a Bachelor of Arts degree at the University of British Columbia (UBC) in 1932 and a Ph.D. at the University of California in Berkeley in 1935. Shortly after graduation, Ian was hired as the first biologist at the BC Provincial Museum (now Royal BC Museum) and in 1940 moved to Vancouver to accept a faculty position in the Department of Zoology at UBC. In 1945 he was promoted to professor of zoology, in 1953 as head of the Department of Zoology, and in 1964 dean of graduate studies. Dr. Cowan authored over 300 titles and supervised over 110 students.



Following the successful nest card program organized by the British Trust for Ornithology, British graduate student Timothy Myres suggested in 1955 that a similar scheme be established in British Columbia. With the support of Dr. Cowan, who invited Tim to UBC and was his thesis supervisor, and Dr. Miklos Udvardy, a faculty member who was familiar with the British program, the BCNRS was officially launched. In total, 578 cards were submitted from 27 individuals for the inaugural 1955 annual report. To further formalize their endeavor, a note "The British Columbia Nest Records Scheme" was announced in the ornithological journal Condor in 1957.

As administrative duties increased at UBC, Dr. Cowan had little time to contribute to the BCNRS as he had left active field work in the late 1950s. He did, however, provide storage space in the Vertebrate Museum which he had established earlier within the Department of Zoology. The demand for office space for a growing faculty with graduate students always threatened the viability of museums on campus. In 1970, Dr. Cowan asked Wayne Campbell, then assistant curator of the vertebrate museum, to maintain the nest record scheme. The BCNRS was never formally recognized by the Department of Zoology and it operated without an annual budget. Rather, volunteers financially supported and maintained the scheme while at UBC.

Dr. Cowan later entrusted a copy of his field notes to Wayne for safe-keeping and over a few years, hundreds of breeding records were transferred to standard nest cards. The historical records, mostly from the 1940s and 1950s, are a valuable addition to BCNRS files.

**Please Note:** A commemorative volume on the life, memories, and accomplishments of Dr. Ian McTaggart-Cowan is being written by Ron Jakimchuk, Wayne Campbell, and Dennis Demarchi and will be published by the Biodiversity Centre for Wildlife Studies. See update information and availability at www.wildlifebc.org.

# British Columbia Nest Record Scheme

## 57th Annual Report - 2011 Nesting Season

*compiled by*

**R. Wayne Campbell, Linda M. Van Damme, Mark Nyhof, Patricia Huet**

**Biodiversity Centre for Wildlife Studies Report No. 15 June 2012**

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# Digging into the Past - History is Alive in the BCNRS

A significant **milestone** for the **British Columbia Nest Record Scheme** was reached by the end of 2011. Since 1997, a small group of unpaid volunteers has been transferring breeding information from a variety of sources to standard BCNRS nest cards. By January 2012, we surpassed our 100,000$^{th}$ entry and reached a total of **128,974 historical breeding records.**

Historical information provides a unique timeline of events that chronicles our wildlife heritage (Figure 1). Transferring such material, often hundreds of years old, to standard forms or databases are easily the most overlooked and shunned activity confronting people passionate about wildlife and its future. Each year, however, the Biodiversity Centre for Wildlife Studies budgets volunteer-time to touch in with the past and incorporate new details into a common data source.

The task has been tedious, time-consuming, and at times challenging. In some cases, it took years to obtain specific information for British Columbia, especially from private (Figure 2) and institutional egg collections throughout the world and searching museum catalogues for specimens of downy young and preserved nestlings. Some of the many other sources searched included personal field notes, unpublished reports, technical literature, theses, academic research papers, incidental observations from hunters and fishermen, historical correspondence, road-kill databases, wildlife rehabilitation centres, miscellaneous cards from British Columbia in other North American nest record schemes, newspapers, naturalist club newsletters, magazines, photographic files, taxidermy shops, and accessible web pages.

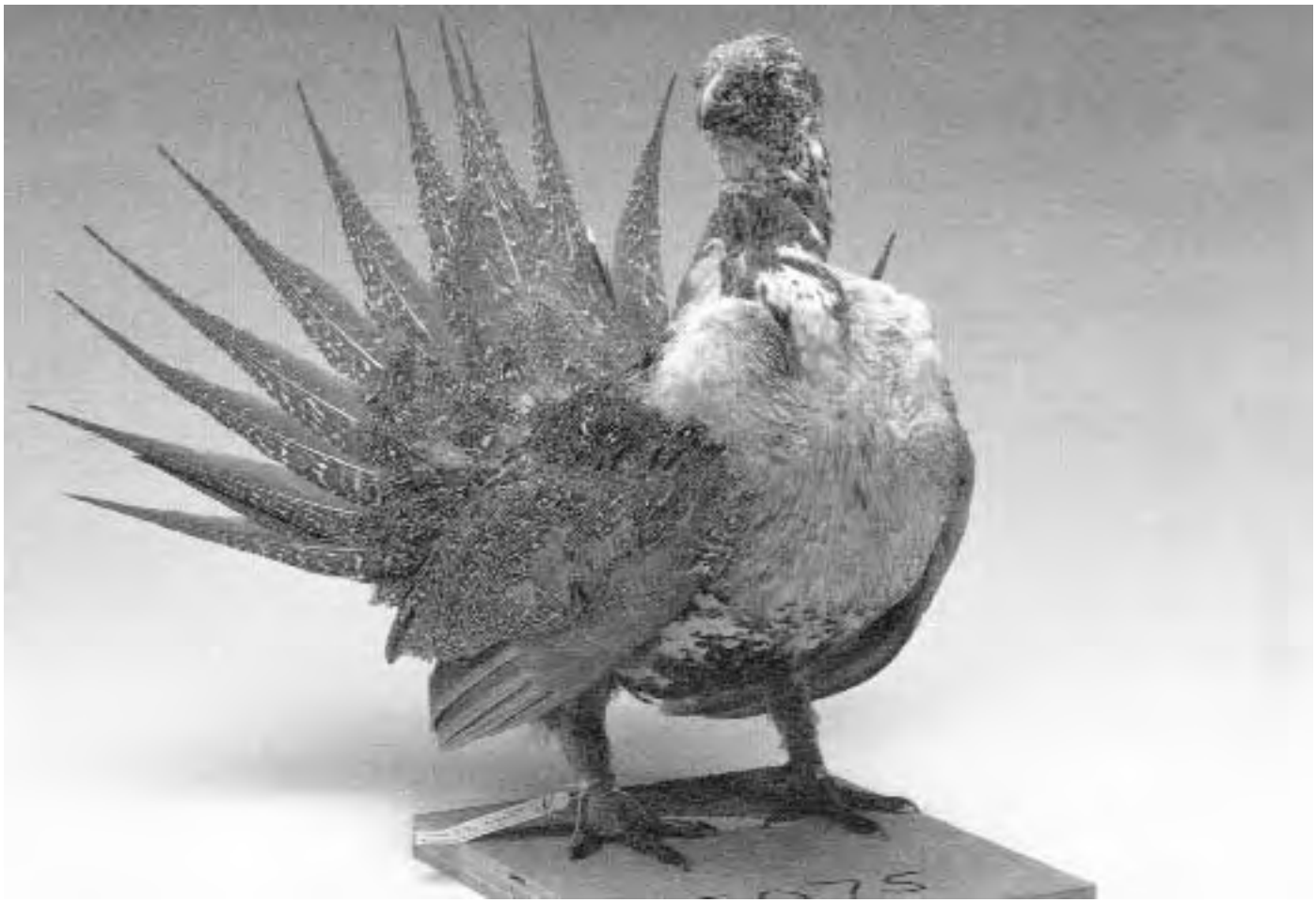


**Figure 1.** Extracting historical breeding information is worth the effort as a more accurate story emerges when multiple sources of information are centralized, including museum specimens. A recent article on the historical status of Greater Sage-Grouse in British Columbia (see *Wildlife Afield* 7(1):3-11, 2010) emphasizes this. *Photo by Andrew Niewmann.*

**Figure 2.** In the past, egg-collecting was a popular pastime with many amateurs, but today most oological collections have been deposited in major museums where they can be accessed by interested persons. *Photo by Don Timbrell, Burnaby, BC, April, 1966.*

**Figure 3**. At one small cattail marsh in the central interior of the province, an American Bittern called for nine consecutive years without nesting. *Photo by R. Wayne Campbell.*

The information transferred to nest cards was for confirmed breeding records which included nests with eggs and/or nestlings, newly fledged young being fed, or hatched young incapable of sustained flight. Other observations of birds such as singing on territory, calling from marshes, courtship activities, copulation, adults carrying food or nesting material, adult near a nest, juveniles with adults, and agitated adults, are inconclusive as breeding records and are considered behavioural in nature and were added to our occurrence databases. Since 1997, we have entered hundreds of thousands of such records, all accessible in a unique data-field.

American Bittern (Figure 3) is one example of a bird that may be heard calling regularly from marshes and other wetlands throughout the nesting season, but their presence does not confirm breeding. Over the past four decades many such marshes have been thoroughly searched for nesting evidence with very few nests with eggs and/or nestlings or flightless young being found.

Searching for breeding records has certainly been meaningful, with many new findings. A new breeding species for the province, Greater Sage-Grouse was uncovered in field notes. First nesting records for the province were discovered for Green Heron, Flammulated Owl, Barred Owl, Purple Martin, Bushtit, and Black-throated Gray Warbler. Significant extensions in breeding range were revealed for Rose-breasted Grosbeak at Shuswap Lake, Semipalmated Plover in the Cariboo region (see *Wildlife Afield* 1(1):10-16,2004), Yellow-breasted Chat at Mission, and Common Grackle in Fernie (see *Wildlife Afield* 6(2):139-146, 2009; Figure 4).

**Figure 4.** Since 1981, Kevin Knight watched Common Grackles in Fernie and a decade later found them breeding, a range extension of 800 km southeast of its known range in the province. In this photo, a male grackle is gathering food for its young from a residential lawn. *Photo by Kevin S. Knight, Fernie, BC, 6 June 2009.*

Eight new breeding records for Common Goldeneye on the southwest mainland coast were found as well as unusually early and late breeding dates for at least 28 species of birds. One was a female Canvasback with a brood of eight newly hatched ducklings in the Cariboo on the early date of May 18. A few new hosts for Brown-headed Cowbird were also discovered including three unusual reports of a single cowbird egg in a nest of a Redhead, Spotted Sandpiper, and Yellow-headed Blackbird.

Many historical sources have been gleaned for breeding records (Figure 5) and "search and transfer" of relevant information will continue in 2012. In the immediate future, however, emphasis will be focused on adding UTM co-ordinates to historical cards, continuing electronic data entry of present holdings, and updating and organizing species files in the British Columbia Nest Record Scheme.

We encourage others to submit historical breeding records that might be "hiding" in old notebooks so they can be extracted and added to nest cards. For example, in May 2012, before this report was taken to the printers, we received about 100 pages of field notes of an early naturalist in the central Fraser River valley from the year 1904! It is quite likely that new information will be uncovered, perhaps a first breeding record for the province or even the Lower Mainland region.

**Figure 5.** The daily field notes of the late J. E. Victor Goodwill, for the 52-year period 1957 through 2009, generated over 110 breeding records a year, mostly from southern Vancouver Island. When the search has been completed, another 5,700+ records will have been added to the British Columbia Nest Record Scheme.

# The 2011 Nesting Season

## Weather – A Record-breaking Year

The province had one of its worst springs on record in 2011 with prolonged cool and wet periods and temperatures at least 3.5° C below normal. The unusual weather patterns greatly impacted commerce in the province, especially farming and gardening, as well as nesting birds. In many species, normal nesting patterns were two to three weeks behind schedule and others abandoned traditional nest sites or were unsuccessful in raising young. This was a province-wide phenomenon (Figure 6).

**Figure 6.** The prolonged period of cool and wet weather impacted the success and timing of many nesting species in 2011. At Kootenay Pass, the summit of the Salmo-Creston highway, snow was still very deep in the first week of May. *Photo by Linda M. Van Damme.*

On the south coast, where most of the early-nesting species are found, January was a very wet month about the time when **Great Horned Owls,** and in some years **Barn Owls,** were starting to nest. In late February, there was record-breaking cold that coincided with the usual start of the nesting season for **Anna's Hummingbirds** (Figure 7). March was cold and soggy with only four rainless days. First nesting **Common Ravens**, **Song Sparrows**, and **Rufous Hummingbirds** were delayed. Record cold days were reported in April and the month ended up being the third coldest on record. No nests were reported for passerines like **Northwestern Crow**, **Black-billed Magpie**, **Spotted Towhee**, **Bushtit**, **Hutton's Vireo**, **Red-winged Blackbird**, and **American Robin,** although some nonpasserines like **Bald Eagle**, **Canada Goose** and **Mallard** were found nesting but later than usual.

**Figure 7.** Although Anna's Hummingbird started courting activities on southern Vancouver Island in early February, and nest-building later in the month and early March, some nests were either later abandoned or nestlings died due to poor spring weather. *Photo by Keith MacDonald, Nanaimo, BC, 14 April 2011.*

May is the month when many of the province's birds start nesting. Weather did not change much and the dreary spring continued. In fact, the two months combined were the second coldest reported in 100 years. The snow pack on local mountains reached all-time highs. Even in the interior, snow remained on mountains later than usual causing flooding and late higher elevation nesting times; in the Peace River region, records were set for the number of rainy days.

June was an average month on the south coast, but by early July harvesting of field crops was two to three weeks late as were many field-nesting species of birds. The Fraser River, which usually crests in mid-June, did not reach maximum height until mid-July. This was also true for other main rivers in the province. Consequently, for many wetland-associated birds like **Pied-billed Grebe**, **American Bittern**, **American Coot**, **Osprey**, **Black Tern**, **Yellow-headed** and **Red-winged blackbird**, and many species of diving ducks, unusually high and/or dirty water delayed or prohibited nesting. And late-hatching insects impacted insectivorous species like nighthawks, swallows, and bluebirds. A few individuals reported that their nest box routes did not produce any young in 2011 due to inclement weather.

Throughout August, there was very little rain and by the end of the month it was the fifth driest on record. The good weather carried through until mid-September, the end of the

breeding season in 2011.

Many people reported the effect of the weather locally on nesting birds. Some of these included:

**Beverly Butcher** (Williams Lake along Dog Creek Road) – Due to bad spring weather and rain, nesting did not start on her nest box route until mid-May for Mountain Bluebird (Figure 8) and much later for Tree Swallow. Rain and blowflies took a toll on the Tree Swallows; the count for Mountain Bluebirds fledged was down too. She also noted an unusual situation where eggs in a bluebird clutch hatched five days apart giving the larger nestlings a better chance for survival as they ate most of the food.

**Figure 8.** Some Mountain Bluebird clutches were abandoned early in the nesting season due to the wet spring and probably lack of food. *Photo by R. Wayne Campbell, Riske Creek, BC, June 2011.*

**Wayne Campbell** (various locations in the southern central interior) – *A few species of wetland birds were not able to raise families in 2011 due to high water or they abandoned traditional sites and migrated early. Unprecedented numbers of "dump" nests were found for diving ducks and coots, some of which contained eggs of four different species in a single nest. Marsh Wrens were very late, some by as much as a month!*

**Hilary Gordon** (Shuswap Lake) – *On June 24, the nature trail along the south end of Shuswap Lake, and Christmas Island where the Ring-billed Gulls nest, was underwater.*

**Janne Perrin** (Nicola Valley) – *I was struck by the lack of swallow activity above the Nicola Valley this year. A Cliff Swallow colony under the Highway 5A bridge at the Lower Nicola irrigation dam site at the head of Nicola Lake had only two active nests. In other years, at least a dozen pairs nested here.*

**Mark Hobson** (Tofino/Lemmens Inlet) – *Coldest, wettest spring in 50 years. 3 1/2° C lower temperature throughout the whole month [April]. The lack of insects flying will have a dramatic reduction in berries later since pollination is almost nonexistent.*

**Sherry Linn** (Richter Pass) – *Although my numbers were stable it was a strange nesting year. The wet cool spring saw nesting start later than usual (for a while I thought there weren't going to be any chicks!). But once the Western Bluebirds started laying eggs they didn't stop! I had 6 nest boxes with 6 eggs each! Second nesting attempts were down and those nests had fewer eggs than usual.*

**Dirk Pidcock** (Kaslo) – *Yellow jacket nests infested about ¼ of the [nest] boxes and another cold, wet June proved to be a major problem for swallows, with many failed nests.*

**Sandy Proulx** (Mission Ponds) – *The spring weather was very poor for bluebirds and swallows – cold and wet. Only two attempts at second nesting were recorded for Mountain Bluebird and more dead nestlings were found in 2011 than is usual for the route.*

**Rita Wege** (Shoreacres) – *My nest boxes didn't produce any young this year.*

**Karen Willies** (Kamloops) – *The season [*nesting*] started much later than normal due to a cold spring. A large number of Tree Swallow young died in the boxes* (Figure 9).

**Figure 9.** The type of weather during the first few days after hatching in Tree Swallow, and many other passerines, is critical to survival of the brood. *Photo by R. Wayne Campbell, Kamloops, BC, June 2011.*

By June, nest finders were unanimous in their opinion "**May, May, go away - bring on the sun!**"

## Summary

The BCNRS continues to lead all provincial or state nest card programs in North America thanks to the volunteer support of its participants. Some of these contributors have been sending in breeding records annually since the scheme started in 1956! Even at 10 cards a year, their contributions would reach 570 breeding records.

Over the past 15 years, a steady effort has been made to extract historical records and transfer them to nest cards. Therefore, the total number of breeding records received annually reflects this effort. For example, the number of records submitted each year ranged from a low of **5,382** in 1997 (less than **500** historical records) to a high of **27,645** in 2004 (**20,661** historical records). The high 2004 totals resulted from participants celebrating the 50th anniversary of the BCNRS by transferring old records from their notebooks. The total number of species for the same period ranged from **238** in 1997 to **266** in 2004. The average per year was **245** about 78% of the 315 species breeding in the province (Figure 10).

**Figure 10.** Finding a Northern Goshawk nest in British Columbia is a special occasion and usually adds a new species to the yearly total. *Photo by John Deal, near Woss, BC, 2 June 2011.*

For the period 1997 through 2011, an impressive **235,743** breeding records were received, for an average of **15,716** per year. ***Thank you very much!***

In 2011, nest cards for **25,680** nests with eggs/nestlings or broods were received for **245 species,** which was our second-highest number of breeding records over the past 57 years. Of these, **10,955 records** (43%) were for the **2011 season** and the remaining **14,725 records** (57%) were transferred from historical sources. The latter effort tallied **224** species. The total number of breeding species remains at **315**, as no new species were added in 2011. A total of 608 names are included in the report of which **307** people participated in 2011 (Figure 11).

**Figure 11.** Even provincial conservation officers, Jeff Piwek (left) and Darrell Ashworth participated in 2011. Here they are examining an exposed Mountain Bluebird nest box that was damaged by a Black Bear. The lid was found nearby and was re-attached, and later the brood of five nestlings fledged successfully. *Photo by R. Wayne Campbell, Riske Creek, BC, July 2011.*

An increasing number of nest cards had printed digital images and personal sketches attached which is a feature that greatly enhances the value and aesthetics of the record. As well, over 85% of all cards had UTM co-ordinates recorded for each record.

Despite challenges with weather, it was another productive year!

## Noteworthy Events

### Range Expansions and Isolated Nesting

In the dynamic world of birds, populations are rarely stable and in each nesting season, new discoveries are made. Here are a few of the most notable reports submitted this year.

**Broad-winged Hawk**, an eastern raptor, continues to surprise people with its unexpected choice of widely scattered breeding sites far from its core breeding area in northeastern British Columbia. Pairs have now been confirmed or suspected of breeding in the vicinity of Prince George, Springhouse, Hat Creek, and Golden. In 2011, breeding was confirmed in the **West Kootenay** region (Figure 12).

**Figure 12.** Due to disturbance from humans, the nest sites of rare hawks, falcons, eagles, and owls remain confidential except for conservation purposes. This Broad-winged Hawk nest fledged two young in 2011. *Photo by Joanne A. Siderius, 30 July 2011.*

Finding an active **Peregrine Falcon** nest site anywhere in the interior of the province is noteworthy and should be reported. Exact locations are kept confidential but information can be shared for protection and conservation issues. One new eyrie was discovered in 2011. The site was on a nest ledge near **Hat Creek** and two young were produced (Figure 13). The other site discovered in 2010 was in the **West Kootenay** and is the first successful breeding record for the region.

**Figure 13.** Rock bluffs and outcrops with horizontal ledges for nesting should be closely scanned for Peregrine Falcons, especially when adjacent to extensive flats and broad rivers that are used for hunting. *Photo by R. Wayne Campbell, Cache Creek, BC, 12 June 1996*.

On 7 July, **Nancy Krueger** watched an adult **Semipalmated Plover** giving a "broken-wing act" near the **Sturdee River**, northeast of Tatlatui Park (Figure 14). The distraction display suggested nesting, and after a short search she found a nest with four eggs (Figure 15). This location extends the southern extremity of the plover's core range in the province.

**Figure 14.** Adult Semipalmated Plover giving "broken-wing" act. *Photo by Nancy Krueger, near Sturdee River, BC, 7 July 2011.*

**Figure 15.** Nest and eggs of Semipalmated Plover. *Photo by Nancy Krueger, near Sturdee River, BC, 7 July 2011.*

Recently, **Long-eared Owl** has expanded its breeding range from the southern interior of the province north to the south Peace River region where it has been found nesting in the vicinity of McQueen's Slough north of Dawson Creek. In 2010, **Lee Foster** photographed a recently fledged young (Figure 16) north of **Charlie Lake**, about 90 km northwest of the McQueen site.

**Figure 16.** Recently fledged Long-eared Owl. *Photo by Lee Foster, north of Charlie Lake, BC, spring 2010.*

**Janice Arndt** reported an unusual sighting of a male **Red-breasted Sapsucker** near **Nelson** on 20 April. A few days later, on 25 April, she re-discovered the bird and observed it excavating a cavity (Figure 17) paired with a female Red-naped Sapsucker. The prospects were exciting but no further nesting activity was noted although the male remained in the area until at least 18 May.

**Figure 17:** A male Red-breasted Sapsucker excavating a cavity in a black cottonwood tree. This is the first record of this species in the West Kootenay region of the province. *Photo by Janice Arndt, Nelson, BC, 25 April 2011.*

**Eastern Phoebe**, formerly restricted to northeastern British Columbia, is being reported more often in the southern interior of the province as far south as the international boundary. Since 1976, when it was first found breeding at **Spillimacheen**, Eastern Phoebe has been found nesting at **Mackenzie** (see *Wildlife Afield* 6(2):127-128, 2009), **Cluculz Lake** (see BCNRS 2010 report), **Alkali Lake** (R. W. Campbell pers. obs.) and **Creston** (see *Wildlife Afield* 7(2):289-291, 2010). Each of these locations is hundreds of kilometres from its normal Peace River range.

In 2011, another **Eastern Phoebe** was reported nesting at **Cluculz Lake** about 65 km west of Prince George, by **Clive Keen**. He first observed the adult hawking for insects and was able to follow the bird when it delivered food to its nest (Figure 18). The nest was located on a boathouse attached to and beneath a summer cottage, but on the opposite side of the lake from Lee Foster's 2010 nest. This site is approximately 280 km southwest of the species expected breeding range.

**Figure 18**. Adult Eastern Phoebe with food for its nestlings. *Photo by Clive Keen, Cluculz Lake, BC, 2 July 2011.*

While atlasing in remote areas of the northern interior of the province between Thutade Lake and Williston Lake, **Nancy Krueger** decided to check the inside of an abandoned outhouse (Figure 19). On a 2" x 4" board tucked in a corner, she discovered a **Say's Phoebe** nest containing three white eggs (Figure 20). The roof of the toilet was gone so she put a board over the corner to protect the nest from rain. This breeding record is the most eastern for northern British Columbia.

**Figure 19.** The inside of this dilapidated outhouse was used as a nest site by a pair of Say's Phoebes. *Photo by Nancy Krueger, Johanson Lake, BC, 9 July 2011.*

**Figure 20.** Say's Phoebe nest with three eggs. *Photo by Nancy Krueger, Johanson Lake, BC, 9 July 2011.*

**Kevin Knight** continues to discover new information on **Tennessee Warbler**, a ground-nesting species, having observed it in 2011 in the **Elk Valley** of extreme southeastern British Columbia. In 2009, he observed a male singing along **Hartley Creek**, north of Fernie, and in 2010 multiple males were heard singing on territory in the **Flathead valley**. This season, Kevin discovered at least seven males singing south of **Fernie** but no females were observed. The habitat here consists of mixed, riparian wet lowland forest with mature trees and thick undergrowth. As a preliminary observation, as with the Flathead population found in 2010, Tennessee Warbler appears to favour the western slopes of local mountains. It seems only a matter of time before these pioneering males attract females and breeding is confirmed.

In 2011, single adults and small groups of **Grasshopper Sparrows** were seen at several locations in grasslands between the international border and Lac du Bois north of Kamloops. While **Wayne Campbell** was searching for nests on the **Douglas Lake Ranch** on 4 July, an adult flushed from a nest containing three eggs (Figure 21). The last nest reported for this area was in 1962 when a clutch of eggs was collected by an amateur oologist.

South-central British Columbia is at the extreme north end of this species' breeding range in North America. It is one of the least known sparrows in the province because it is very local in its distribution and is not present every year at known breeding locations.

**Figure 21.** Nest and eggs of Grasshopper Sparrow. This discovery is the first confirmed breeding for the Douglas Lake Ranch in 50 years. *Photo by R. Wayne Campbell, near Douglas Lake, BC, 4 July 2011.*

## Early and Late Nesting Dates

Each year someone notices breeding evidence for a species that confirms an unusually early or late nesting date for the province. Behaviour such as disappearing flocks at feeders, sudden pairing, intensified calling, courtship activities, or feeding flights are clues that nesting may have started. In 2011, the following dates were noted:

***January 2*** – A **Great Horned Owl** sitting low on a nest in the Kamloops area was reported by Rick Howie; the owl was presumed nesting.

***January 14*** – Chris Charlesworth reported a **Great Horned Owl** sitting in its nest in the Kelowna area and the adult was still sitting by month's end.

***February 13*** – Dalyce Epp observed an **Anna's Hummingbird** nest-building at Lost Lagoon, in Stanley Park, Vancouver. She thought the female completed the nest around 9 March and settled in to brood at that time.

***February 22*** – Tim Kendrick from Nelson wrote: *Although we still have winter temperatures and snow flurries, there have been several encouraging signs in the past few days.* ***Canada Geese*** *are pairing up and this one has already staked an early claim to the osprey platform in front of the RCMP station* (Figure 22).

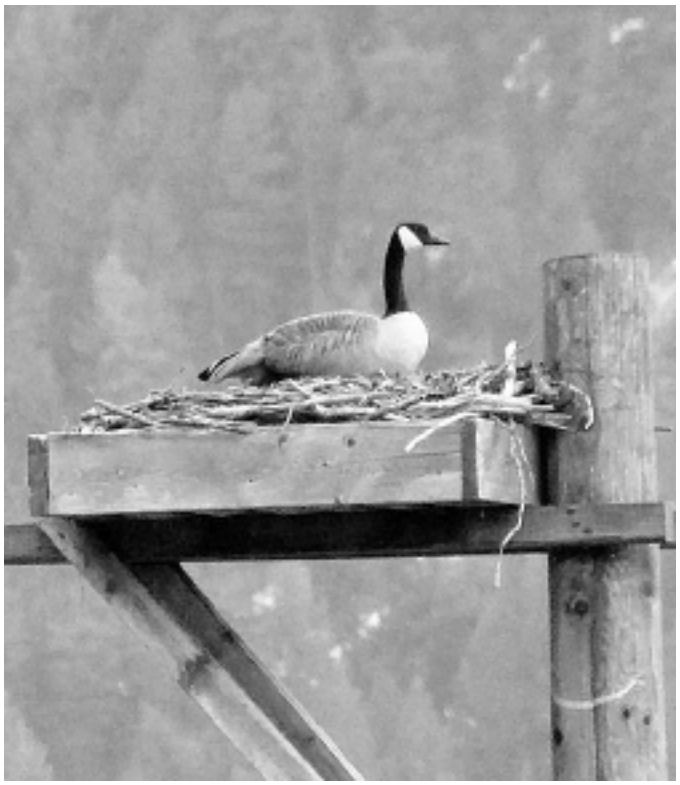


**Figure 22.** Some species, like Canada Goose, may proclaim a traditional nest site a month or more before it is actually used. *Photo by Tim Kendrick, Nelson, BC, 22 February, 2011.*

***March 8*** – Eileen and Wayne Campbell observed a female **Anna's Hummingbird** with a newly fledged young being fed from a sugar-water feeder in Saanich. The nest was not located but nest-building would have been started sometime in mid-January, the earliest reported for the province.

***March 15*** – A completed **Bushtit** nest was found in Central Saanich by Wayne Campbell. Contents were not determined. The earliest date for a nest with eggs is 11 March.

***April 9*** – A **Steller's Jay** nest with an incubating adult was found in Goldstream Park by Mark Nyhof. This matches the earliest date for the province.

***May 18*** – A female **Canvasback**, with eight newly hatched ducklings (Class IA) was found by Wayne Campbell near Springhouse. This is the earliest breeding record for the province.

***June 27*** – A **Canada Goose** family, with downy Class 1B young, was observed by Linda Van Damme at Elizabeth Lake in Cranbrook and may have been a result of re-nesting.

***July 20*** – In the Creston valley, Marcia Long found a **Great Horned Owl** adult with two downy owlets not long out of the nest. The

fledglings were begging loudly from the adult and were very clumsy in their movements when attempting to fly and perch.

***July 23*** – Linda Van Damme discovered a **Black-headed Grosbeak** incubating eggs in the Creston valley, 11 days later than previously recorded in *The Birds of BC* and 7 days later than a breeding record published in the 2010 BCNRS report.

***August 19*** – Marcia Long discovered adult **Western Wood-Pewees** feeding two to three nestlings, which still had their eyes closed, in the Creston valley. This date matches the latest reported in *The Birds of British Columbia*.

***August 29*** – Members of the rail family are more often heard than seen so a downy **Virginia Rail** chick found by Janne Perrin in Agassiz is noteworthy as it extends the latest date 12 days from 18 August.

***September 6*** – Marcia Long and Linda Van Damme spent time exploring around Bridal Lake at Stagleap Park in the sub-alpine spruce forest at 1774m. Snow was late in leaving the high country this season and so it was not surprising to find some species still attending young. A **Chipping Sparrow** observed feeding fledged young is 13 days later than previously recorded. **Yellow-rumped Warbler** (Audubon's) was observed feeding a fledged young in a spruce tree, a full month later than previously documented.

***September 18*** – One adult **Cedar Waxwing** was observed feeding two fledged young at Corn Creek Marsh, Creston Valley Wildlife Management Area by Linda Van Damme.

***October 2*** – Chris Siddle reported seeing **Western Grebes**, a few still feeding large chicks, at Salmon Arm Bay.

***October 14*** – Ted Hillary observed one really noisy young **Western Grebe** constantly begging for food near the wharf at Salmon Arm Bay.

***December 13 to 15*** – Linda Van Damme observed **Eurasian Collared-Doves** engaged in courtship behaviour, including calling, chasing, strutting, and copulation within town limits of Creston.

***December 26*** – An **Anna's Hummingbird** was collecting bits of lichen off a dying mountain ash tree in Saanich, presumably for a nest. This observation, by Wayne Campbell, would later (2012) prove to be the earliest breeding record for the province.

## Nesting Failures

Each year, nest success and causes for failure vary with species, nest site selection, availability of food, and regional weather patterns. Three general categories affecting reproductive success were well documented in 2011. Another increasing cause for nest failure in songbirds is from Brown-headed Cowbird parasitism which is discussed in detail on page 27 of this report.

### *Weather*

The unseasonable weather wreaked havoc on nesting birds by limiting their food supply, killing nestlings by hypothermia, flooding, and flash storms. The report started with a detailed synopsis and overview but so many photographs were submitted this year of mortality that the following photo essay will complement the introductory material (see Figures 23 to 28).

**Figure 23.** Some diving duck nests, like this Redhead, seemed to have avoided the unseasonable year, but were found with addled eggs. *Photo by R. Wayne Campbell, near Tunkwa Lake, BC, 16 June 2011.*

**Figure 24.** Cliff Swallows require a proper consistency of mud when building their nests, mainly for strength and attachment. The rainy weather in 2011 inhibited nest-building and at some sites nests with their contents fell to the ground. *Photo by R. Wayne Campbell, Kamloops, BC, June 2011.*

**Figure 25.** In a desperate attempt to reproduce, some species, like Tree Swallow (white eggs), refurbished a Mountain Bluebird nest, already containing two eggs, late in the season hoping to have a successful year. *Photo by R. Wayne Campbell, Riske Creek, BC, June 2011.*

**Figure 26.** Some Mountain Bluebirds attempted to nest again by building over a previous clutch that had already been abandoned. *Photo by R. Wayne Campbell, Riske Creek, BC, June 2011.*

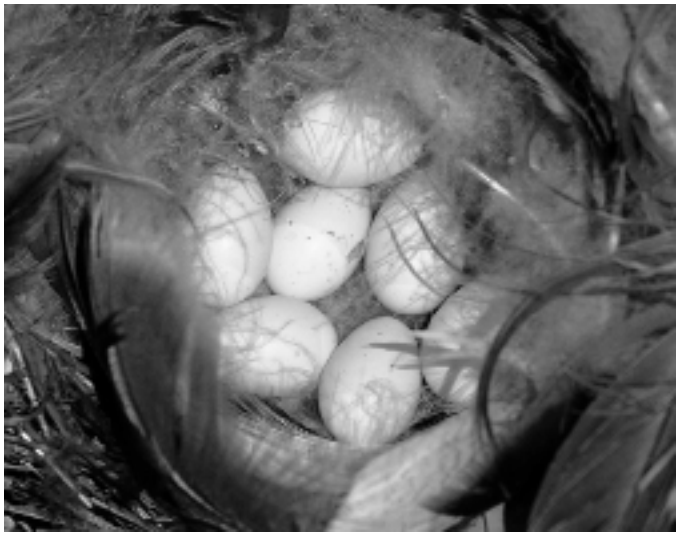


**Figure 27.** During June, many clutches of eggs in nest boxes, such as Tree Swallow, were found abandoned, probably attributed mostly to poor weather. *Photo by Vicky Atkins, north Okanagan valley, BC, 26 June 2011.*

**Figure 28.** Finding skeletons of dead nestlings when cleaning out nest boxes in the autumn attests to the difficult year many insectivorous birds, like Tree Swallow, encountered. *Photo by Vicky Atkins, north Okanagan valley, BC, 26 September 2011.*

### *Flooded Wetlands*

As indicated elsewhere in this report, changes in water levels in marshes, swamps, bogs, and fens in 2011 severely impacted nest success for many wetland species. Some species attempted to re-nest but were too late to fledge young while others abandoned nesting attempts for the year. Still other birds were able to nest successfully even though their nest was partially flooded.

The following four photographs (Figures 29 to 32) represent some of the situations that were encountered in marshes this year.

**Figure 29.** Rising water levels through June flooded many diving ducks nests leaving the clutch floating in the water, such as these Ruddy Duck eggs. *Photo by R. Wayne Campbell, Exeter Lake, BC, late June 2011.*

**Figure 30.** American Coot nests started early in the season were often found later with eggs on the rim of the nest or floating nearby. *Photo by R. Wayne Campbell, Exeter Lake, BC, late June 2011.*

**Figure 31.** Some Marsh Wren nests completed in late May, containing eggs, were underwater in late June. *Photo by R. Wayne Campbell, Westwick Lakes, BC, June 2011.*

**Figure 32.** Many near fledging Yellow-headed Blackbird chicks were found dead in nests in 2011. *Photo by R. Wayne Campbell, Watson Lake, June 2011.*

### *Predation*

Predation, a major cause of nest failures, was reported by many people. In most cases, the predator was never seen but experience suggested the animals involved may have been a Bullfrog, snake, American or Northwestern crow, Common Raven, Black-billed Magpie, Northern Harrier, Cooper's Hawk, Sharp-shinned Hawk, Bald Eagle, Black Bear, squirrel, or mouse.

Two instances of direct predation were witnessed by Wayne Campbell. A **Cooper's Hawk** was seen flying into a **Black-billed Magpie** nest south of Salmon Arm causing the nestlings to fledge prematurely. As one young magpie flew out over a field, the hawk grabbed it and landed on a nearby farm machine where it was plucked and eaten.

The other incident involved watching an **American Mink** systematically taking young **Yellow-headed Blackbirds** from their nests in a small colony in the Cariboo. Because of high water levels, the blackbird nests were only inches above the water and could easily be reached by the predator. The mink had obviously spent some time in the area as blackbird carcasses were scattered around, mostly with only the legs remaining (Figure 33). Few young were raised successfully at this site in 2011.

**Figure 33.** Remains of a large Yellow-headed Blackbird nestling plucked from its nest and eaten by an American Mink in an empty American Coot nest. *Photo by R. Wayne Campbell, Watson Lake, BC, July 2011.*

### *Collisions with Vehicles*

Millions of birds are killed each year from collisions with vehicles. It is an increasing concern as speed limits are increased, road surfaces are changed, and adjacent habitats are altered. It is especially troublesome during the breeding season when productivity is affected. Sometimes whole families are found dead on the road (Figure 34) or adults are killed during feeding forays. Most mortality reported, however, is of newly fledged and inexperienced young birds (Figure 35).

**Figure 34.** Male California Quail with five newly hatched chicks found dead on the highway. *Photo by Vicky Atkins, north Okanagan valley, BC, 26 June 2011.*

**Figure 35.** This recently fledged Eastern Kingbird died from collision while flying across a highway to a nearby wetland. *Photo by R. Wayne Campbell, June 2011.*

### *Territoriality and Nest Defense*

Two families of birds, the Troglodytidae (wrens; Figure 36) and Mimidae (mockingbirds), are known to destroy the eggs, nests, and nestlings of other species of passerines. Unlike a predator, the eggs and/or nestlings are not eaten but are killed by pecking. Sometimes a new nest is built on top of the ravaged nest. It is believed that this unusual behaviour in these bird families is partly to protect their territory from other species nesting nearby.

In 2011, clutches of eggs destroyed by House Wrens included Tree Swallow, Mountain Chickadee, Red-breasted Nuthatch, Mountain Bluebird (Figure 37), Western Bluebird, American Robin, and Brewer's Blackbird.

**Figure 36.** House Wren is one of three species in the family Troglodytidae in British Columbia that is known to peck holes in the eggs of other species nesting in its territory. *Photo by Vicky Atkins, Coldstream, BC, 18 May 2011.*

**Figure 37.** Two of the five eggs in this Mountain Bluebird clutch were pecked by House Wrens nesting nearby. *Photo by R. Wayne Campbell, Riske Creek, BC, June 2011.*

### Unusual Nest Sites

Many birds are ingenious, or desperate, when it comes to picking a site for their nest. This year, some of the more unusual locations that were discovered are presented.

Usually **Mallard** nests are well hidden and concealed by vegetation but at **Lily Pad Lake** in the Cariboo, a female chose to nest under a rotting boat dock (Figure 38). The hen did not flush until **Wayne Campbell** was checking under the structure for a Western Toad.

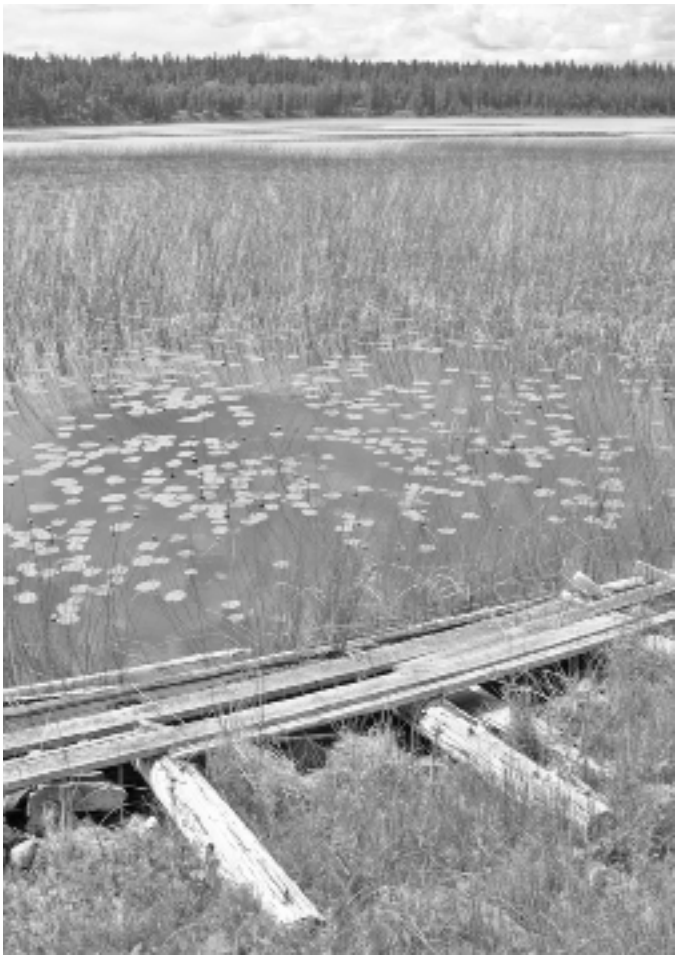


**Figure 38.** In 2011, a Mallard nested under this old boat dock. *Photo by R. Wayne Campbell, Lily Pad Lake, BC, June 2011.*

**Common Loons** need a stable nest site that is close to water, relatively flat, and preferably on islets away from predators. Near **Mackenzie**, **John** and **Vi Lambie** found a nest on a Beaver lodge (Figure 39) but later it had been destroyed.

**Figure 39.** Adult Common Loon incubating eggs (lower left) on flat tongue of a Beaver lodge. *Photo by Vi Lambie, near Mackenzie, BC, 29 May 2011.*

Many wetlands were flooded in 2011, making it difficult for surface-nesting waterbirds like **Red-necked Grebe** to find anchorage for their nests. Consequently, the species generally had a poor reproductive year, especially in southern areas of the province. At some sites, however, floating logs (Figure 40) provided suitable support as **John** and **Vi Lambie** discovered near **Mackenzie**. This also emphasizes the importance of keeping floating branches and logs in wetlands as potential roost and nest sites.

**Figure 40.** Incubating Red-necked Grebe on its nest built on a firm, but floating, log. *Photo by Vi Lambie, near Mackenzie, BC, 26 May 2011.*

For the past six breeding seasons, **Laure Neish** has been photographing **Red-necked Grebes**, which continue to nest at the **Penticton** marina despite busy boat traffic. This season, the grebes were successful in hatching young (Figure 41).

**Figure 41.** Adult Red-necked Grebe on nest with recently hatched chick showing the striped head. *Photo by Laure Wilson Neish, Penticton, BC, 11 July 2011.*

**Figure 42.** Location of a Great Horned Owl nest (arrow) in a residential subdivision of Coldstream, BC. *Photo by Vicky Atkins, 15 February 2011.*

As urbanization increasingly usurps bird habitats, some species, like **Great Horned Owl**, are able to adjust their nesting activities to include human settings. This Great Horned Owl nest (Figure 42), reported by **Vicky** and **Lloyd Atkins**, is located in one of the few available trees in the middle of a residential area of **Coldstream**.

Most **Western Kingbird** nests found in the province are located on power poles and hardware affixed to them. A smaller percentage build nests in living and dead trees and shrubs, and on ledges associated with human structures. **Mark Nyhof** discovered this species nesting in an abandoned woodpecker cavity (Figure 43) during his travels in the Okanagan valley. Although unusual, and a good find during the breeding season, Charles de Blois Green first reported this choice of nesting site in 1928.

**Figure 43.** An adult Western Kingbird, which appeared to be brooding nestlings, was discovered 4.3m (14ft) up in an old woodpecker cavity in a mature ponderosa pine tree snag. *Photo by Mark Nyhof, Vaseux Lake, BC, 11 July 2011.*

**Figure 44.** It is unusual to find two Eastern Kingbird nests in close proximity. The active nest failed, likely a result of predation as a Short-tailed Weasel was observed in the area. *Photo by Linda M. Van Damme, Corn Creek Marsh, Creston, BC, 20 July 2011.*

Although a small percentage of **Eastern Kingbirds** nest on girders or beams of artificial structures as opposed to natural sites, it is unusual to see two nests built close together (Figure 44). The un-occupied nest, situated on the outside metal girder of a foot bridge access at the Wildlife Centre at the Creston Valley Wildlife Management Area, contained one egg while the other nest with the incubating adult contained two eggs. The nest site location was not ideal as the incubating kingbird flushed whenever public canoe trips were conducted.

**Steller's Jays** are often thought of as a forest-dwelling nesting species but a small number do nest in garden shrubs and buildings. A most unusual nesting site was discovered this season by **Mark Nyhof** when an adult was found sitting, probably incubating, in its nest under a small traffic bridge near **Victoria** (Figure 45).

**Figure 45.** It is quite unusual to find a Steller's Jay nest built under a small car bridge anywhere in the province. *Photo by Mark Nyhof. Victoria, BC, 9 April 2011.*

At least six bird species in the province are now nesting in holes between large concrete blocks used as retaining walls. Some sites are only occupied by a single species, such as Northern Rough-winged Swallow, while more extensive walls can have Violet-green Swallows, European Starlings, and House Sparrows nesting. At one location near **108 Mile House**, **Wayne Campbell** followed the successful fledging of a pair of **Northern Rough-winged Swallows** and **Mountain Bluebirds** using the same hole for nesting (Figure 46).

**Figure 46.** Northern Rough-winged Swallow and Mountain Bluebird shared a common nest entrance and chamber to successfully fledge young in 2011. *Photo by R. Wayne Campbell, 108 Mile House, BC, June 2011.*

**Barn Swallow** is an adaptable species that nests today mostly in human-made structures such as buildings, farm structures, road culverts, and bridges. Providing foraging areas are nearby, the species will also nest wherever a site provides secure attachment for a nest. At one site on southern **Vancouver Island**, a pair successfully fledged young from a nest under a walkway for an irrigation pump (Figure 47). Access to the nest was only a foot above water and manoeuvering was tight.

**Figure 47.** In 2011, a pair of Barn Swallows nested successfully under this irrigation pump walkway. *Photo by R. Wayne Campbell, North Saanich, BC, 30 May 2011.*

At a site in **Victoria**, **Ann Blackmore** observed a pair of **Barn Swallows** nesting in a building which housed a pet food business (Figure 48). Apparently the adults stayed in the building all night but when the doors opened at 7am they carried on with raising their family. Fortunately, the business is open seven days a week.

**Figure 48.** A pair of Barn Swallows chose to build their nest on top of a fluorescent light fixture in a pet food store little knowing that there were closed hours of operation. While imprisoned each night, one of the pair of swallows perched on a branch of a dead display tree. *Photo by Ann K. Blackmore, Victoria, BC, 23 June 2011.*

Abandoned buildings, especially with access to inner rooms, are favourite nesting sites for Barn Swallows. Nests are usually built on door lintels and window sills that provide some support. Small colonies can thrive in such situations and may use whatever else is available such as hanging cardboard or pieces of metal that have become partially loosened or stripped from walls and ceilings (Figure 49).

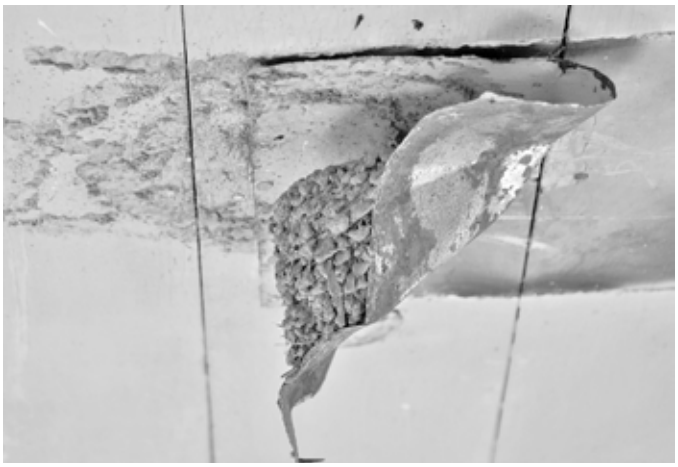


**Figure 49.** Barn Swallow nest on a narrow ribbon of metal that is peeling from a ceiling in an abandoned building. *Photo by R. Wayne Campbell, Salmon Lake, BC, June 2011.*

**European Starlings** will nest almost anywhere there is a natural or human-made crevice to build their nest. This year they were found nesting in 23 different sites, including an Osprey nest, abandoned farm machinery, the open end of a fallen log (Figure 50), a totem pole (Figure 51), and even a float plane (Figure 52).

**Figure 50.** Adult European Starling at entrance to its nest in the hollow end of fallen tree trunk. *Photo by Vicky Atkins, near Boltress Creek, BC, 31 May 2011.*

**Figure 51.** A woodpecker likely created this hole in the totem pole used by European Starlings for nesting as evidenced by "whitewash" below the opening. *Photo by John Deal, Campbell River, BC, 16 May 2011.*


**Figure 52.** A small opening on this float plane was utilized by European Starlings for nesting this year. *Photo by John Deal, Campbell River, BC, 16 May 2011.*

**House Finches** can build nests in unusual locations as **Tammy Harrison** and her husband discovered this season in **Ashcroft**. While watering a hanging flower pot on the backside of the house, a bird flew out. On closer inspection, a nest was discovered with five eggs. All eggs hatched and by early July the nestlings were developing pin feathers. All young fledged safely as seen by this youngster in the cedar hedge (Figures 53 to 57).

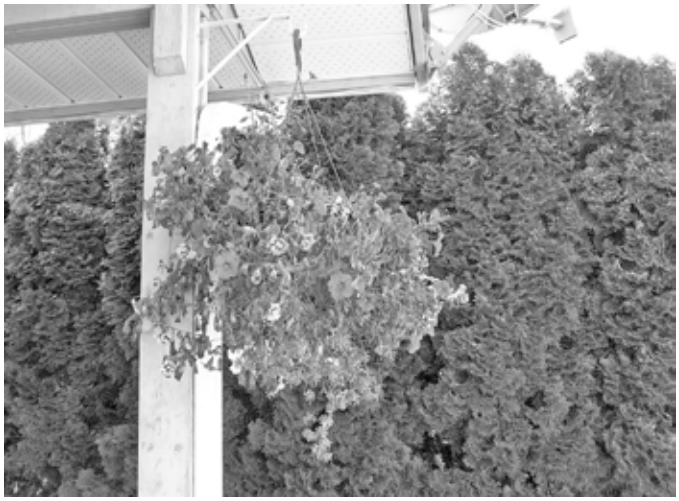


**Figure 53.** A pair of House Finches successfully raised a family in this hanging flower pot in 2011. *Photo by Tammy Harrison, Ashcroft, BC, 16 June 2011.*

**Figure 54.** Nest and eggs of House Finch discovered in hanging flower pot. *Photo by Tammy Harrison, Ashcroft, BC, 14 June 2011.*

**Figure 55**. Twelve days after first viewing the House Finch eggs, downy naked nestlings were discovered. *Photo by Tammy Harrison, Ashcroft, BC, 26 June 2011.*

**Figure 56.** Although the hanging flower pot was no longer being watered, and plants were dying, the House Finch family continued to thrive. *Photo by Tammy Harrison, Ashcroft, BC, 5 July 2011.*

**Figure 57.** A fledged House Finch adorned with downy head plumes declared the nesting season a success. *Photo by Tammy Harrison, Ashcroft, BC, 13 July 2011.*

People usually associate a **House Sparrow** nest with a box or some kind of urban structure. **Laurie Rockwell**, however, knows differently. While checking an Osprey nest at **Trout Creek**, he noticed a male sparrow in the vicinity of the nest on 19 April. On 7 June, he watched a male House Sparrow fly out from immediately under the Osprey nest platform (Figure 58) carrying a fecal sac. He could also hear nestlings. On 21 June the nestlings could be heard again and by 29 June it appeared that the pair of sparrows was starting to nest again.

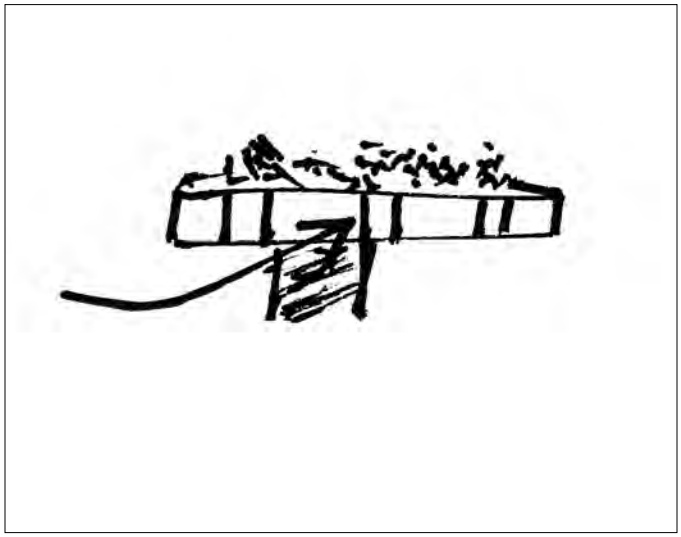


**Figure 58.** Location of House Sparrow nest under Osprey nest platform. *Drawing by Laurie Rockwell, Trout Creek, BC, June 2011.*

## Noteworthy Species Information since *The Birds of British Columbia*

**Common Loons** at **Haha Lake,** in southeastern BC, have produced some interesting offspring. **Sheila Reynolds** visited the lake on 26 June and observed a downy, albino chick on the back of one of the adults. The chick was still present on 17 July. **Pat Stent** also visited Haha Lake and photographed the "white" chick (Figure 59). In talking with a local resident, Pat learned the pair also had a dark chick earlier in the season, but it was taken by a Bald Eagle. An albino chick was also seen in 2007 (see *Wildlife Afield* 5(1):126, 2008 at www.wildlifebc.org )

**Figure 59.** Although the feathering of this Common Loon chick is white, it is not a pure albino as the eye and bill are dark pigmented. *Photo by Pat Stent, Haha Lake, BC, 1 August 2011.*

Although single **Mallard** broods have been reported containing up to 22 young, over 50% of females in British Columbia have between five and eight young. A single hen with 30 ducklings, therefore, is exceptional. **Linda Van Damme** observed this large Class 1B brood (all the same size) in a flooded pasture in the **Creston valley** on 9 June.

An even larger grouping of 37 **Common Goldeneye** ducklings, all the same age, were a regular sight along the main dyke at **Duck Lake**, Creston. **Brent Wellander** and **Linda Van Damme** observed this mega family on a number of occasions between 12 June and 6 July as they continued to feed in the same area of the lake (Figure 60). When large families of Common Goldeneye are recorded, it is believed they are likely the result of aggressive encounters between other females or the amalgamation of deserted young with other broods.

**Figure 60.** Female Common Goldeneye with 35 of 37 ducklings in a common brood. *Photo by Linda M. Van Damme, Duck Lake, Creston, BC, 16 June 2011.*

Most broods of **Common Merganser** in British Columbia range between five and nine young, the largest being 20. On 27 July, however, Lee Foster observed a female with 21 young in tow on **Cluculz Lake.**

Although there has been a small, but stable, population of **Eurasian Collared-Doves** at Cawston, in the south-central interior for decades, this introduced species has rapidly expanded its range into many other communities throughout British Columbia over the past 10 years. For example, **Merv Syroteuk**, of Creston, recently summarized collared-dove sightings for the West Kootenay along with the area's first fledged young (see *Wildlife Afield* 5(2):226-228, 2008).

In 2011, we received the first provincial records of nests with eggs when **Wayne Campbell** discovered Eurasian Collared-Dove nests in **North Saanich** and **Esquimalt Lagoon** on southern Vancouver Island. Over the coming years we expect new breeding records from many other locales.

**Ed McMackin** was fortunate to find a **Northern Pygmy-Owl** nesting on his property located in the **Arrow Creek** district at 832 m elevation. The owls nested in a natural cavity in a mature trembling aspen tree (Figure 61). This rare discovery is the first for the Creston valley and one of only 13 nests for the entire province.

**Figure 61.** Northern Pygmy-Owl peering from its nest cavity in a tall, mature trembling aspen tree. *Photo by Linda M. Van Damme, Arrow Creek, BC, 10 June 2011.*

It is a noteworthy occasion when a **Chestnut-backed Chickadee** nest is found with seven eggs and the pair is able to successfully hatch and fledge all of the young. **Pat Huet** reported this event from one of her nest boxes in **Canyon** on 18 June 2011.

Re-use of nest sites for small songbirds building open, cup-shaped nests is poorly understood, but this season three instances were documented by **Linda Van Damme** in the **Creston valley**. A pair of **Willow Flycatchers** built in the exact same location as in 2010, in a low crotch of a snowberry shrub. At two widely separate locations, **Western Wood-Pewee** pairs rebuilt on the same horizontal branch of live black cottonwood trees.

Although **Bushtit** is present year-round on the Sunshine Coast, there are less than a handful of breeding records. In early spring this year, **Penny Hall** found a pair of Bushtits at the **Sechelt** marsh on 27 March. Since there are few breeding records for the region, her notes are of interest:

***27 March***: *Today I watched a pair of Bushtits building their nest at the marsh.... I didn't catch on right away, but after they repeatedly returned to the same spot, I looked a little harder and could make out the nest they were constructing! I posted two pictures, one of the Bushtit working on the nest, the other, bringing in more material.*

***9 April***: *The Bushtits are still busy building, it appears that the female is putting finishing touches on the inside of the nest and the male, wanting to look important, does a little touchup here and there on the outside.*

***15 April****: Bushtit nest is still being worked on. It's looking really good - much more stable looking now and the shape is well defined (a real piece of artwork!),* (Figure 62).

***31 May***: **John Hodges**, in Penny's absence, wrote: *The Bushtits have successfully produced some offspring but I don't know how many – I heard the chicks when one of the parents took food into the nest for them.*

***2 July*****:** *The Bushtits at the Sechelt Marsh have their second brood of the year. Currently both parents are taking food to the nest, although I cannot hear any babes.*

The 2011 nest was found in a larch tree, the first known for Bushtit. While details for the first breeding record for the Sunshine Coast cannot be immediately located, it is worth noting that the second record was found in a huckleberry bush in a transmission corridor near the airport by **John Newell** in 2007.

**Figure 62.** Although the Bushtit is small in size, it builds an unusually large nest of up to 20-25 cm long which resembles an old sock hanging in a tree or shrub. The nest is a finely woven structure of green mosses, lichens, hair, spider webs, plant fibres, and fine grasses and is often quite visible. The entrance is a small circular hole near the top of the nest. *Photo by Penny Hall, Sechelt, BC, 8 April 2011.*

# Highlights

## Families and Species

Sixty-one percent of the 515 species of birds recorded in the province have been found breeding. This species total is the highest in Canada and can be attributed to the diversity of habitats, including the marine environment.

Five families, including 50 species, dominated all records for 2011 with an average of 3,442 records per group. Combined, these families accounted for 67% of all cards submitted in 2011. Colonial-nesting **Cormorants**, **Gulls**, and **Terns** (12 species with 10,303 records) topped the family list for most records due to historical information that was transferred from publications on seabirds. Impressive numbers of **Geese, Swans,** and **Ducks** (2,459 records for 23 species; Figure 63), **Blackbirds**, **Orioles** and **Grackles** (2,479 records for 8 species; Figure 64), and **Swallows** (1,972 records for 7 species) rounded out the top five families.

Species with over 1,000 records for the five families, in descending order, were **Glaucous-winged Gull** (6,390), **Pelagic Cormorant** (1,924), **Yellow-headed Blackbird** (1,617), and **Ring-billed Gull** (1,148).

**Figure 63.** Each year, Canada Goose is always among the top species reported and in 2011 it accounted for 27% of all waterfowl species. *Photo by Kevin Atkins, Vancouver, BC, 4 June 2011.*

**Figure 64.** Over the past several decades, Brewer's Blackbird has expanded its breeding range into northeastern British Columbia and consequently more breeding records are being reported throughout the province. In 2011, 156 nests were found, one of the highest totals ever. *Photo by Vicky Atkins, near Vernon, BC, 26 June 2011.*

Other noteworthy bird family totals, without colonial-nesting species, were the **Bluebirds** and **Thrushes** (9 species with 823 records), and **Ospreys**, **Eagles, Hawks, and Falcons** (15 species with 648 records).

Numbers for colonial-nesting marine and fresh-water species usually inflate family and species totals in each annual report. To clarify where most of the high numbers originated, we have listed the top five species for historical records and those received in 2011. These have been further broken down into colonial versus solitary-nesting species with totals (Table 1). Knowing the natural history of each species will help in interpreting the information.

The historical records for the five species of seabirds were extracted from early surveys, museum specimens, and diaries of old bird collectors. The waterfowl totals are also from old notes of James A. Munro, Ian McTaggart-Cowan, Leo Jobin, F. Shillaker, and Ducks Unlimited Canada.

Current year totals in Table 1 for colonial-nesting species are actual nests examined for contents, not estimates. The notable blackbird and coot totals are from wetland surveys conducted from May to July, 2011. Tree Swallow and Mountain Bluebird totals, of course, are from nest box routes.

| Top Five Bird Species | | | |
|---|---|---|---|
| **Historical Records** | | **2011 Records** | |
| **Colonial-nesting** | **Solitary-nesting** | **Colonial-nesting** | **Solitary-nesting** |
| Glaucous-winged Gull (6,261) | Black Oystercatcher (258) | Ring-billed Gull (1,146) | Tree Swallow (830) |
| Pelagic Cormorant (1,869) | Redhead (214) | Yellow-headed blackbird (1,128) | Canada Goose (498) |
| Yellow-headed Blackbird (489) | Mallard (186) | Red-winged Blackbird (484) | Mountain Bluebird (367) |
| Rhinoceros Auklet (218) | Canada Goose (173) | Great Blue Heron (405) | American Coot (279) |
| Tufted Puffin (199) | Bald Eagle (142) | Cliff Swallow (401) | Mallard (279) |

**Table 1.** Total breeding records received in 2011 for the top five colonial and solitary-nesting species.

**Figure 65.** Finding the nest of a Brown Creeper usually involves a lot of searching for crevices in mature to old-growth trees in coastal rainforests. This creeper nest is located in a natural crevice in a decaying red alder. *Photo by Kevin Atkins, Vancouver, BC, 3 June 2011.*

BCNRS species archives were enhanced significantly in 2011 by numbers of breeding records for the following species: **Black Tern** (343), **American Robin** (297), **Black Oystercatcher** (266), **Barn Swallow** (256), **Redhead** (246), **Marsh Wren** (209), **Tufted Puffin** (199), **Killdeer** (168), **Brewer's Blackbird** (156), **Wood Duck** (139), **Red-necked Grebe** (126), **Common Loon** (108), **Ruddy Duck** (97), **Brown-headed Cowbird** (94), **Sora** (85), **Eastern Kingbird** (71), **Rufous Hummingbird** (63), **Eastern Phoebe** (31), **Brown Creeper** (21; Figures 65 and 66), **Northern Saw-whet Owl** (17), and **Broad-winged Hawk** (5).

**Figure 66.** A sure sign that nestlings are present is observing an adult, like this Brown Creeper, flying out of a nest site carrying a fecal sac. *Photo by Kevin Atkins, Vancouver, BC, 8 June 2011.*

## Brown-Headed Cowbird Parasitism

In North America, the Bronzed Cowbird and **Brown-headed Cowbird** do not build their own nests but lay eggs in the nests of many other species of birds who in turn raise the young. Brood parasitism occurs in about one percent of all bird species whereby the parasite benefits at the expense of the host. Research has shown that to maintain a stable population of Brown-headed Cowbirds with a necessary survival rate, a female would have to lay about 80 eggs in her lifetime. In addition, a nest found with a cowbird egg, or fledged young being fed by a host species may not be from a female cowbird within the host's territory. Some cowbirds travel up to seven kilometres from their breeding ranges to foraging sites where they spend most of their day.

Although cowbird eggs do not mimic host eggs they tend to hatch earlier. Brown-headed Cowbird nestlings grow faster and often crowd out the other chicks (Figure 67) and take much of the food brought to the nest by the host. Some host species, such as Gray Catbird, Blue Jay, and American Robin have learned to reject Brown-headed Cowbird eggs. While brood parasitism is known to occur in some waterfowl such as Redhead, those species will be discussed below under a separate heading "*Dumping Eggs in Alien Nests.*"

**Figure 67.** In this parasitized nest, the large Brown-headed Cowbird chick is crowding the two smaller American Redstart nestlings. *Photo by Linda M. Van Damme, Creston, BC, 6 July 2011.*

Eighty-nine instances of songbird parasitism, either nests with eggs or nestlings, or recently fledged young incapable of flight being fed by its host, were reported this season for 31 species. Host species listed in alphabetical order included **American Goldfinch** (1), **American Redstart** (4), **American Robin** (1), **Black-throated Gray Warbler** (1), **Brewer's Blackbird** (1), **Canada Warbler** (1), **Chipping Sparrow** (7), **Clay-colored Sparrow** (1), **Common Yellowthroat** (6), **Dark-eyed Junco** (4), **Hammond's Flycatcher** (2), **Lazuli Bunting** (1), **Least Flycatcher** (1), **Orange-crowned Warbler** (1), **Red-eyed Vireo** (1), **Red-winged Blackbird** (1), **Ruby-crowned Kinglet** (2), **Savannah Sparrow** (1), **Song Sparrow** (11), **Spotted Towhee** (1), **Swainson's Thrush** (4), **Swamp Sparrow** (1), **Townsend's Solitaire** (1), **Townsend's Warbler** (1), **Vesper Sparrow** (1), **Warbling Vireo** (5), **White-crowned Sparrow** (2), **Willow Flycatcher** (5), **Yellow-headed Blackbird** (2), **Yellow-rumped Warbler** (1), and **Yellow Warbler** (16).

Just over 30% (27 records) of all instances of parasitism were accounted for by Yellow Warbler and Song Sparrow, well-known host species. Uncommon host species reported for 2011 include Brewer's Blackbird, Red-winged Blackbird, and Yellow-headed Blackbird (Figure 68). The latter two species may be parasitized more than previously known as surveys of wetland-nesting birds were emphasized in 2011.

**Figure 68.** Previously considered a rare event, parasitism of Yellow-headed Blackbird nests by Brown-headed Cowbird may not be an incidental occurrence. *Photo by R. Wayne Campbell, near Douglas Lake, BC, 14 June 2011.*

Twenty-five individuals, including a group from the Creston valley, found evidence of parasitism and completed two separate nest cards, one for the host species and the other for the cowbird. These included: **Neil Alexander, Jennifer Bergen**, **Mike Caldwell, Wayne Campbell**, **Eileen Campbell, Sam Collins, John Comer, Neil Dawe, M. Devereux, Doug Doyle, Hugh Fraser, Elsie Lafreniere, Allen Poynter, Ken Morrison, Mark Nyhof, Neil Robbins, Glenn R. Ryder**, **Dave Schutz, Chris Siddle, Gail Spitler**, and **Don Young**.

In the Creston valley, 22 instances of parasitism were recorded by **Marcia Long, Ed McMackin, Maury Murphy,** and **Linda Van Damme** for the following nine species: **Warbling Vireo** (1), **Red-eyed Vireo** (1), **Swainson's Thrush** (1), **American Redstart** (1), **Chipping Sparrow** (2), **Song Sparrow** (2), **Willow Flycatcher** (2), **Common Yellowthroat** (3), and **Yellow Warbler** (9).

Thirty-three Yellow Warbler breeding records were documented this season in the Creston valley with nine egg clutches (27%) parasitized by the Brown-headed Cowbird. The Yellow Warbler has been known to compensate by building another nest atop the original one containing the cowbird egg(s). On June 19th, a Yellow Warbler nest built in the upper branches of a snowberry shrub (Figure 69) was discovered and contained four warbler eggs. By July 7th, three well feathered young were visible in the nest and ready to fledge. The following day the nest was checked and contained one infertile egg. The adult warblers were busy feeding their fledged young in the nearby bushes. The nest was collected and when pulled apart one cowbird egg and one warbler egg were discovered in the cup of the original nest. This Yellow Warbler pair outsmarted the cowbirds.

***Note:*** *Please fill out separate cards, one for the Brown-headed Cowbird and another for the host species. Each card is filed separately in the BCNRS which allows for a variety of different uses including mapping.*

**Figure 69.** The Yellow Warbler which built this double-decker nest measuring 15 cm (6 in) deep was successful in fledging three of its own young despite a Brown-headed Cowbird laying its egg in the original nest. *Photo by Linda M. Van Damme, Creston, BC, 19 June 2011.*

## Dumping Eggs in Alien Nests

Some birds lay their eggs in other birds' nests which ornithologists call "egg dumping." Unlike a Brown-headed Cowbird chick, which is usually reared by its foster parent, most egg dumping clutches do not hatch successfully. This behaviour is most common in waterfowl, shorebirds, and seabirds. The reason for this activity in not fully understood but may be related to age of the bird, local weather, fluctuating water levels, availability of food, and other environmental factors.

In 2011, a surprising number of dump nests were discovered by **Wayne Campbell** while conducting surveys of wetlands. Some nests contained eggs of four different species (Figure 70). It was suspected that unusually high water levels were partially to blame as there was less anchorage and protection for cattail and bulrush-nesting species and as the season progressed birds seemed desperate to start nesting.

**Figure 70.** In 2011, an unusually large number of "dump" nests were found in wetlands with high water. This nest contains eggs of Redhead, Canvasback, Lesser Scaup, and Ruddy Duck and appeared abandoned. *Photo by R. Wayne Campbell, south of Savona, BC, 16 June 2011.*

A few of the nests were found abandoned while most had incubating adults for the "host" species. Species in **bold** in the following summary were the "host" identified by nest construction, downy lining, clutch size, and stage of incubation. Forty-nine dump nests were: **American Coot** with American Bittern (2; Figure 71), **American Coot** with Ruddy Duck (19; Figure 72), **Canada Goose** with Mallard (1), **Caspian Tern** with Ring-billed Gull (1), **Glaucous-winged Gull** with Pelagic Cormorant (1), **Herring Gull** with Ring-billed Gull (1), **Lesser Scaup** with Ruddy Duck (3), **Mountain Bluebird** and Tree Swallow (2), **Osprey** with Canada Goose (2), **Pelagic Cormorant** with Glaucous-winged Gull (1), **Pied-billed Grebe** with Black Tern (1), **Pied-billed Grebe** with Ruddy Duck (1; Figure 73), **Red-necked Grebe** with American Coot (1), **Red-necked Grebe** with Lesser Scaup (1), **Redhead** with Ruddy Duck (3), **Redhead** with Lesser Scaup (Figure 74), **Redhead** with Lesser Scaup and Ruddy Duck (1), **Redhead** with Ring-necked Duck (1), **Redhead** with Canvasback, Lesser Scaup, and Ruddy Duck (1; see Figure 70), **Ring-billed Gull** with California Gull (1), **Ring-necked Duck** with Redhead (1), **Ring-necked Duck** with Ruddy Duck (2; Figure 75), **Wood Duck** with American Kestrel (1), and **Wood Duck** with Hooded Merganser (1).

**Figure 71.** Finding an American Bittern nest is an exciting event, but to find two bittern eggs laid in an American Coot nest is very unusual. *Photo by R. Wayne Campbell, south of Salmon Arm, BC, 12 June 2011.*

**Figure 72.** In British Columbia, Ruddy Duck (large white eggs) frequently lays its eggs in abandoned as well as active nests of American Coot. *Photo by R. Wayne Campbell, near Douglas Lake, BC, 27 June 2011.*

**Figure 73.** Chicks had already left this Pied-billed Grebe nest but a Ruddy Duck laid an egg on the empty floating platform of marsh plants. *Photo by R. Wayne Campbell, west of Williams Lake, BC, 27 June 2011.*

**Figure 74.** Lesser Scaup is one of the later-nesting diving ducks in British Columbia, but occasionally it lays its eggs (smaller egg, centre) in other species nesting in wetlands including Redhead. *Photo by R. Wayne Campbell, south of Savona, BC, 16 June 2011.*

**Figure 75.** Ruddy Duck will lay its eggs (large and white) in occupied nests of many species of diving ducks, including this Ring-necked Duck nest. *Photo by R. Wayne Campbell, near Douglas Lake, BC, 2 July 2011.*

There were two additional records of "dump" nests or mixed broods received this year. A record of a **Black Oystercatcher** nest with a Glaucous-winged Gull egg in it was extracted from the historical field notes of the late **Rudi Drent. Willie Haras** found a female **Redhead** with two of her own ducklings and two Class IA Ruddy Duck young. In addition, two **Wood Duck** females had built their down nest and laid eggs over nests of Northern Flicker and European Starling.

***Note:*** *Please fill out a separate card for each species that can be identified from its eggs including repeating nesting information on each card. Each nest card is filed separately for each species in the BCNRS and aids in searching species for "dump" nests.*

## Coverage

Low temperatures, high water, road washouts, (Figure 76), flooded fields, (Figure 77), late snow pack, and unpredictable local weather patterns did not appear to impede nest-finding this year. Since our contributors are volunteers, information is gathered *ad hoc* except for personal monitoring, survey, and conservation projects in traditional locations.

**Figure 76.** Highway maintenance crews were kept busy in 2011 as many roads were flooded or washed out and unsafe to travel. *Photo by R. Wayne Campbell, near Knutsford, BC, June 2011.*

**Figure 77.** In many locations, flooded fields could not be checked for ground-nesting birds until July, a time when some species have already completed nesting. *Photo by R. Wayne Campbell, near McLure, BC, June 2011.*

About 36 percent of the 1:50,000 National Topographic Service map grids were represented for all nest cards included in this report (Figure 78). Twenty-four percent were covered by participants in 2011.

Provincial coverage again is best represented by areas that are regularly visited such as southern Vancouver Island, Lower Mainland, Okanagan valley, Cariboo, Kamloops, Prince George, and Creston valley. Most of the grids represented along the outer coast are from records transferred from historical sources. The shaded grids also do not indicate any level of abundance.

The region with the most thorough coverage this year was the **Creston valley**. When the season was over, a very impressive **1,139 breeding records**, representing **107 species**, were tallied. This total represents over 10% of the 10,955 records submitted in 2011 and 44% of the 243 species represented for current and historical combined.

The following 20 individuals contributed breeding information for the Creston valley: **Carla Ahern**, **Marc-André Beaucher**, **Donna Bonthoux, Gary Breault, Cyril Colonel**, **Colleen Erickson**, **Ralph** and **Elsie Gerein**, **Don** and **Jean Holmes**, **Pat** and **Dave Huet**, **Sharon Laughlin**, **Marcia Long**, **Ed McMackin**, **Lorne Ostendorf**, **Jay Quathamer**, **Lorraine Scott**, **Brent Wellander**, and **Linda Van Damme**.

Some of the notable breeding species were **American Wigeon**, **Bufflehead, Canvasback, Harlequin Duck, Long-billed Curlew** (Figure 79), **Northern Saw-whet Owl, Northern Pygmy-Owl** (see page 23), **Savannah Sparrow,** and **MacGillivray's Warbler**.

Other areas that received substantial coverage included the **Okanagan valley** (Vicky and Lloyd Atkins, Chris Siddle, and Laurie Rockwell), **Shuswap Lake/Salmon Arm** (Ted Hillary, Tom Brighouse, Ed and Monica Dahl, Hilary Gordon, and Orville Gordon), **Kamloops/ Savona/Merritt/Douglas Lake** (Wayne Campbell), **Mackenzie** (Vi and John Lambie), **Cariboo** (Beverley Butcher, Sandy Proulx, and Wayne Campbell), **West Kootenay** (Gary Davidson, Janice Arndt, Marlene Johnston, and Rita Wege), **Harrison Hotsprings** (Janne Perrin), **southern Vancouver Island** (Mark Nyhof and Wayne Campbell), **Prince George** (Nancy Krueger and Elsie Lafreniere), **Powell River** (Ivar Nygaard-Petersen), and **Lower**

**Figure 78.** Provincial coverage for the British Columbia Nest Record Scheme in 2011 by 1:50,000 National Topographic System (NTS) grid cells.

**Figure 79**. Long-billed Curlew is uncommon in the Creston valley during breeding season and finding a nest is a highlight for any year. *Photo by Linda M. Van Damme, Creston, BC, 17 May 2011.*

**Mainland** (Errol Anderson, Kevin Atkins, Wayne Campbell, and Glenn Ryder).

A surprise this year was breeding information we received from a First Nation Grizzly Bear biologist working in the **Alsek-Tatshenshini** region. During his wanderings, **Jason Henry** stumbled across nests with eggs and small broods with adults including a rare record of a nesting **Northern Shrike**.

The entire north-central and northeastern portion of the province was poorly covered although some historical information was transferred for the regions.

For 2011, the top five areas with highest numbers of breeding records were from **Creston valley** (82F/1 and 82F/2), **Douglas Lake/ Quilchena** (92I/1), **Salmon Arm/Shuswap Lake** (82L/11), **Springhouse/Dog Creek** (92O/16), and **Fraser Lake** (93K/2). The top five regions for historical records were from **Prince Rupert** (103I/14), **Moore Islands** (103A/11), **Cape Caution** (93M/4), **Sechelt** (92G/5), and **Central Saanich** (92B/11).

The five highest numbers of species in a grid were reported for the **Creston valley** (107 species) where the total was nearly twice that of the second highest which was in the vicinity of **Douglas Lake** (56 species). Other areas were **Salmon Arm** (54 species), **Springhouse** (53 species), and **Victoria** (48 species).

## Participants

The many facets of operating and maintaining the BCNRS remains a volunteer effort by a handful of committed people. We are grateful to the many long time and new contributors who volunteered their time, effort, and associated costs to gather breeding information on the province's birds in 2011.

We are continually impressed that our supporters still believe that "filling in the blanks" on printed 4 inch x 6 inch nest cards is acceptable. A recent editorial "Electronic Data Storage – Keep it on Paper, Too!" (see *Wildlife Afield* 7(2):142, 2010) emphasizes this importance and some of the problems of relying entirely on digital databases. We are continually entering data electronically from standard nest cards and with more information (*e.g.* cross referring photo documentation, behaviour, and habitat) than other similar programs. Oftentimes, additional information included on the back of cards is helpful in clarifying details for a breeding record.

In 2011, **307** participants sent in breeding records. For some, the season started late in 2010 when Great Horned Owls were hooting and maintaining pair bonds on territory. By February, the owls were on nests. Most field time, however, occurred from May to July, but in some cases late records were being reported in early September.

Ten individuals contributed more than 100 breeding records and only one person, **Wayne Campbell**, had more than 1,000. He spent a lot of time transferring personal historical records from his field notes dating back to the mid-1950s (Figure 80).

Others with high numbers of individual breeding records for 2011 were **Linda Van Damme** (967 records), **Mark Nyhof** (706 records), **R. Wayne Campbell** and **Walter Scott** (605 recrds), **Tom Brighouse** (600 records), **Vicky** and **Lloyd Atkins** (457 records), **R. Wayne Campbell** and **Ned Stockman** (381 records), **Ted Hillary** (193 records), **Beverley Butcher** (123 records), **Nancy Krueger** and **Rod Sargeant** (87 records), **John** and **Vi Lambie** (85 records), **Gary Davidson** (84 records), and **Peter Dunlevy** (82 records). It is important to note that most of these records are of individual nests or broods.

This year we had some surprise submissions from people visiting from England (Figure 81), others who were passing through the province from the United States and Canadian prairies, and wildlife consultants. Most of these contributors had seen our annual report on-line.

**Figure 80.** From the late 1950s through the 1960s, Wayne Campbell, with the help of cub and scout groups, sportsmen, naturalists, and bird-banders, erected more than 1,100 Wood Duck nest boxes in trees throughout the Lower Mainland. The boxes were monitored and notes were kept on contents. In this photo, Ian Kennedy (left) and Wayne Campbell are checking a box that held a European Starling nest at Burnaby Lake, BC. *Photo by John Thompson, 26 April 1969.*

**Figure 81.** British birders Dave and Maggie Spearman, from Norwich, were on vacation in the province and contributed records of waterfowl broods seen in a wetland near Jacko Lake, BC, *Photo by R. Wayne Campbell, July 2011.*

Historical information representing **301** individuals was transferred from field notebooks, reports, and publications. The records dated back to the late 1880s. A special effort was made by **Jan Bradshaw** to extract breeding information from his notes, especially for the Harrison area, and **Chris Siddle** for the Okanagan valley.

Most of the historical records were from **Canadian Wildlife Service** who sponsored the "British Columbia Seabird Colony Inventory" conducted by Michael S. Rodway, Moira Lemon, A. Bell, Rob Butler, R. Chaundy, Brian Carter, Michael Force, Dave Garnier, P. Haist, Dick and M. Grinnell, Heather Hay, Norman Holmes, Ian Jones, D. Power, C.M. Rodway, Joy Rodway, Ken R. Summers, Ann Vallee, and Steve Wetmore (6,347 records).

Other records came from **R. Wayne Campbell** (1,354 records), **Rudolf H. Drent** (983 records), **Ethel Kippin** (591), **Glenn R. Ryder** (575 records), **John Comer** (450 records), **Charles J. Guiguet** and **Patrick W. Martin** (350 records), **Chris Siddle** (300 records), **M. Alvarez** and **Gary Kaiser** (250 records), **Alan Burger** and **Dave Garnier** (223 records), **James A. Munro** (216 records), and **Heather Hay** and **Gary Kaiser** (178 records), **Jim Middleton** and **Josh Anderson** (144 records), **Jan Bradshaw** (126 records), **Dave Dunbar** (120 records), **Peter Dunlevy** (82 records), **Ed** and **Mary**

**Barrowclough** (80 records), and **Dave Schutz** (69 records).

Some individuals contributed nest cards for species with a restricted breeding range in the province. For the past 22 years, **Laurie Rockwell** has been monitoring the **Gray Flycatcher** nesting population at Summerland (see *Wildlife Afield* 2(2) 89-93, 2005). **Ted Hillary**, **Ed** and **Monica Dahl** track the success of **Clark's Grebe** breeding at **Salmon Arm** (see *Wildlife Afield* 6(1) 40-105, 2009). Since 1992, **Linda Van Damme** has monitored the only breeding colony of **Forster's Terns** in the province at Duck Lake (see *Wildlife Afield* 5(2) 232-294, 2008).

The amount of time an individual spends to find a nest varies, but with terrestrial nesting species it is considerable. During evenings, weekends, and holidays **Mark Nyhof** really put in a big effort and found significant numbers of nests for **American Robin** (122), **Rufous Hummingbird** (33; Figure 82), **Red-breasted Sapsucker** (27), **Lewis's Woodpecker** (27) and **Barn Swallow** (40). **Lloyd** and **Vicky Atkins** have perfected the art of finding **Western Kingbird** nests (39) in the north Okanagan valley and continue to monitor the population. They also reported 15 active **Bullock's Oriole** nests. In the **Creston valley**, **Marcia Long** and **Linda Van Damme** searched shrubby edges and riparian habitats for nests and at the end of the season they had tallied a surprising 35 **Cedar Waxwing** nests (Figure 83). In similar habitat, Linda found 33 **Yellow Warbler** nests.

We are grateful again to participants who searched their regional newspapers for photographs of nesting birds. **Vicky Atkins** and **Hilary Gordon** sent in clippings for 12 broods.

**Figure 83.** It is always exciting at the end of the breeding season to tally nests for each species. In 2011, Marcia Long and Linda Van Damme ended up finding 35 Cedar Waxwing nests in the Creston valley. *Photo by Marcia Long, Crackerjack Creek, BC, 25 July 2009.*

**Figure 82.** Mark Nyhof has really mastered the art of locating Rufous Hummingbird nests in the coniferous forests around Vancouver Island. In 2011 he located 33! *Photo by Mark Nyhof, Victoria, BC, 6 May 2011.*

## Quality of Information

### *Filling in the Blanks*

Every titled space on a nest card has been designed with a purpose in mind, allowing each of the 25 "compartments" to be examined separately for specific information. The format has changed little over 57 years and attests to the foresight of the pioneer co-ordinators. While there are less thorough approaches to recording breeding information in North America, we still encourage as complete documentation as possible.

Long-term data, gathered in a consistent manner throughout the province, has shown a change in nesting habitats for some species like Yellow-headed Blackbird, a preference for evergreen versus deciduous trees for early nesting in some passerines, the importance of nest height and micro-climate for some tree-nesting species, changes in nesting chronology with changes in elevation, and noteworthy changes in nesting material. Even the specific location of a nest has changed for a few adaptable species over time (Figure 84).

**Figure 84.** When the BCNRS started 57 years ago, Barn Swallow did not make use of metal road culverts for nesting. *Photo by R. Wayne Campbell, Stump Lake, BC, June 2011.*

The spaces allotted for **Universal Transverse Mercator** (UTM) information on the bottom of each card for a confirmed breeding record are an important addition. Since hand-held **Global Positioning System** (GPS) units have grown in popularity, more contributors are taking time to fill in these spaces. The more precise the location, the more significant the information becomes.

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 is 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 85).

For convenience, many people are using the **4-letter 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.

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 86).

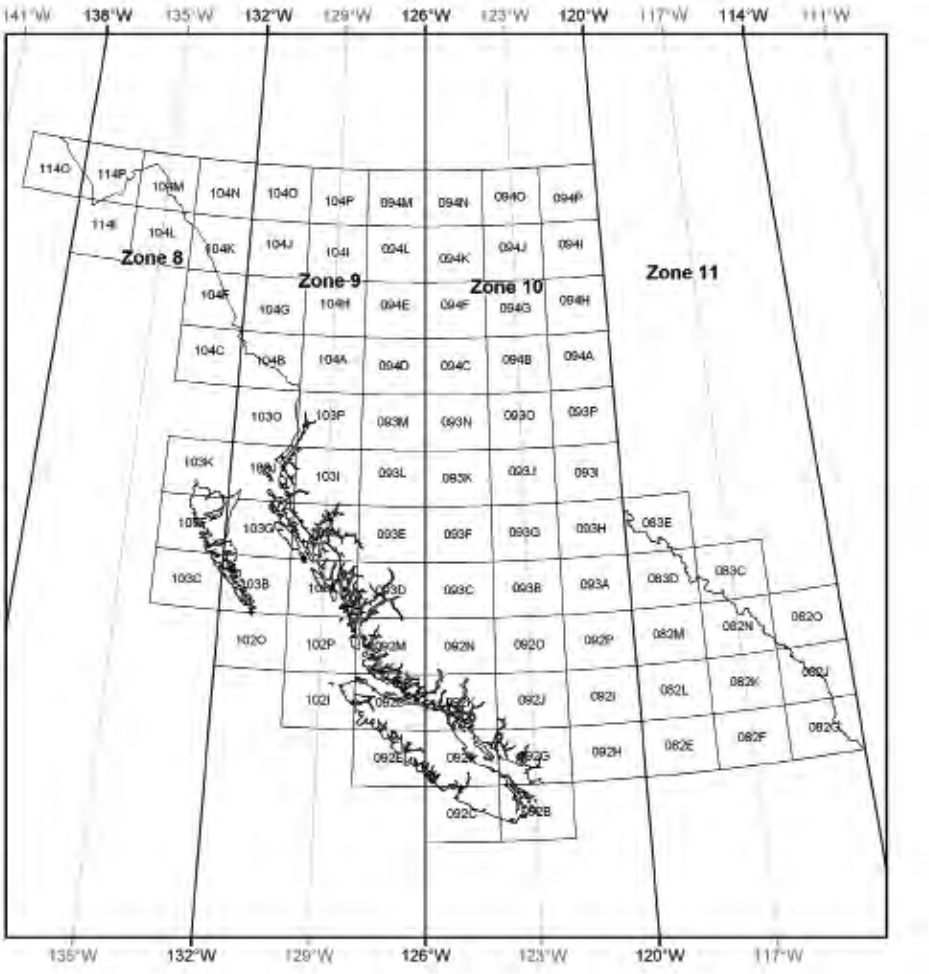



**Figure 85.** The Universal Transverse Mercator (UTM) Zones for British Columbia.


**Figure 86.** The standard 4-letter code for 500 species of birds in British Columbia is available for reference in the pocket-sized checklist published jointly by the Biodiversity Centre for Wildlife Studies, British Columbia Field Ornithologists, and Nature Vancouver in May 2007.

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

Also, when noted, please add the "race" or "subspecies" on a 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", or, "dark". Most Red-tailed Hawks nesting in the Atlin area of north-western British Columbia are "dark" morphs.

Please remember that the former **Blue Grouse** is now two separate species: the **Sooty Grouse** on the coast and the **Dusky Grouse** in the interior. Also, the **Winter Wren** occupying most of British Columbia, except the northeast, is now called the **Pacific Wren**.

All species that lay eggs in the nests of other species, such as **Brown-headed Cowbird**, **Redhead**, **Bufflehead**, **Common Goldeneye**, **American Coot, Lesser Scaup**, **Canvasback**, **Ruddy Duck**, and **American Bittern** should have two separate cards filled out. It is helpful to put both species names 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, ready to fledge, recently 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**, **3**, **4**, and **6** for information on assessing different stages of development.

This year, we received fewer completed nest cards that contained only behavioural observations such as "singing on territory", "in appropriate habitat", "flying with food", "carrying nesting material" or "courting." Although this information is useful, it was entered directly into our general wildlife databases and not included in this report. All of the records accepted this year contain confirmed breeding evidence such as a nest with eggs and/or nestlings, recently fledged young, or broods with young unable to fly.

### *Documentation with Photographs*

The number of colour prints attached to nest cards, or sent as digital images on compact disks (CDs), was a great help in preparing this report. In 2011, we received nearly 500 such photos. All of the prints remain attached to the nest card for future reference while most digital material was archived for future reference. A few noteworthy records were added to the BC Photo File for Wildlife Records. Each record, however, is cross-referenced to the original nest card.

We are grateful to receive photographs that document remote unnamed locations, general habitats (Figure 87), unusual nest sites, and participants in the field. Such documentation is of immense help, especially when volunteers working with the BCNRS need to describe the **precise location** for a nest or try to categorize a particular **habitat**. **Nancy Krueger** attached a variety of prints to her nest cards, including the habitat for a colony of Eared Grebes found in a patch of pond lilies (Figure 88). Often Nancy's cards contained "additional information" written on the back of a card so she recorded pertinent information on the back of each print. Others included additional written information on a blank 4 x 6 inch file card and stapled it to the original nest card.

**Figure 87.** Unnamed pond off Commonage Road near Predator Ridge, BC. For many people familiar with this area, the pond location is well known. *Photo by Vicky Atkins, 26 June 2011.*

**Figure 88.** Providing a photograph of the nesting habitat for a colony of Eared Grebes on Pantage Lake complemented the written description on the nest card. *Photo by Nancy Krueger, 16 July 2011.*

The value-added use of photographs accompanying or cross-referenced to nest cards can also be beneficial in many other ways such as clarifying the position of a nest, describing habitat, identifying or confirming species and

eggs, identifying the specific nest substrate, and documenting mortality and abnormalities

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

### *Diagrams*

Simple diagrams, detailed maps, and hand sketches added directly on nest cards (Figure 89), or attached by staple and cut to size (4 x 6 inch), can be very helpful for future reference. It is especially valuable when a detailed sketch is provided for an area when major exploration has been conducted for which there is no precise

**Figure 89.** This drawing of three American Robin nests, built on top of each other in a cavity on the side of a Douglas-fir stump, is simple but effective in showing the history of use of the same nest site, and perhaps the same birds. *Drawing by Glenn R. Ryder, Langley, BC, 15 June 1990.*

Providing detailed directions and distances from known locations in simple diagrams to unnamed sites, such as "White Lake", "Joe's Meadow", "Wendy's Slough", and "Clear Lake", adds immeasurable significance to the breeding record.

### *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 (see Appendix 2). Most cards received each year are of single visits because people are usually travelling from place-to-place and cannot return to re-check the site. The number of cards in 2011 with follow-up visits was encouraging, especially for **Osprey**.

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

### *Historical Nest Site(s) and Current Activity Information*

Each year, many well-known and traditional nest sites that are used in consecutive years, especially by birds of prey, colonial-nesting herons, 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 worthwhile to complete a card indicating that it has been used in the past (or the previous year) but not in the present year. These "inactive" nest cards are filed for reference with the original "active" sites but are not included in the annual report summary.

The "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.

Additional comments on the history of a location, if known, are useful to add to the nest card for some species (Figure 90).

**Figure 90.** This Osprey nest, located in the north Okanagan valley, has a documented history of both occupancy and breeding success over the years. *Photo by Vicky Atkins, 9 June 2011.*

## Historical Information

In 1899, a government-sponsored expedition across northern Canada, including far northern regions of British Columbia, was undertaken as part of future treaty negotiations with Indians of the region. The narrative of the journey was published in 1908 in a 494-page book *Through The Mackenzie Basin: A Narrative of the Athabasca and Peace River Treaty Expedition of 1899* by Charles Mair. Nearly 300 pages list details for mammals and birds seen and collected on the trip. The following species account for **Rufous Hummingbird** (Figure 91) is noteworthy:

433. Rufous Humming Bird
– *Selasphorus rufus* Gmelin

*When travelling by canoe from the Fraser to Fort St. James by way of the Stuart River, on 24th June, 1889* [1899]*, Mr. Ogden discovered a nest containing two nearly fresh eggs. It was placed on a bush, and both parents were seen and the male was shot. (The bird, nest and eggs were duly forwarded to Washington). He found them to be fairly abundant in that locality, while they are not uncommon around Stuart's* [Stuart] *Lake. The nests of this species are lined with cotton down, while the outside is more or less profusely covered with fine mosses, shreds of bark, and occasionally a few lichens. An average nest measures 1 ½ inches in outer diameter by 1 ¼ inches in depth; the inner cup is about seven-eighths of an inch in width by one-half inch deep. The eggs resemble those of other humming birds in colour and shape, the average measurement being about 0.50 by 0.32 inch.*

*Sir John Richardson states that this species was originally discovered at Nootka Sound* [Vancouver Island] *by the celebrated Captain Cook, and that he had himself examined one of the identical specimens.*

The on-going task of searching for historical breeding information and transferring it to nest cards continued. In 2011, **14,725** new breeding records were found in a variety of sources. The top 10 species were **Glaucous-winged Gull** (6,261 records; Figure 92), **Pelagic Cormorant** (1,869 records), **Yellow-headed Blackbird** (489 records), **Black Oystercatcher** (258 records), **Rhinoceros Auklet** (218 records), **Redhead** (214 records), **Tufted Puffin** (199 records), **Eared Grebe** (194 records), **Cassin's Auklet** (186 records), and **Great Blue Heron** (186 records). As expected, seabirds again dominated the list (89%) and many of the records were previously unknown. Some files in the BCNRS are now the largest single source of breeding information for a species in North

**Figure 91.** The Rufous Hummingbird breeding record from 1889, transferred to a BCNRS card, is the earliest nest and eggs recorded for British Columbia. *Photo by Mark Nyhof.*

America. **Black Oystercatcher**, with 266 new breeding records added in 2011 (Figure 93), is significant as much of the world's population breeds in British Columbia and most of what is known about the species' breeding biology has come from BCNRS files.

**Figure 92.** All Glaucous-winged Gull breeding records transferred in 2011 from historical sources were of nests containing eggs. On the outer coast of the province, some gull nests are built entirely of seaweeds such as Rockweed (*Fucus gardneri*), as seen in this nest. *Photo by R. Wayne Campbell, McQuarrie Islets, BC, 23 June 1975.*

In total, **224 species** were represented in the historical cards of which 33 (15%) had only one record. Species with significant numbers were **Cliff Swallow** (174 records, checks of individual nests), **Bald Eagle** (142 records), **Black Tern** (131 records), **American White Pelican** (120 records), **Sora** (67 records), **Pied-billed Grebe** (50 records), **Purple Martin** (50 records), **Arctic Tern** (36 records), **Eastern Phoebe** (29 records), **Peregrine Falcon** (29 records), **Band-tailed Pigeon** (16 records), **Mute Swan** (15 records), **Western Screech-Owl** (12 records), and **Broad-winged Hawk** (3 records).

Jan Bradshaw spent much of the winter transferring breeding information in his notes from the vicinity of Harrison Hot Springs, Shuswap Lake, and Kamloops regions. For several species, gaps in breeding distribution in the province were filled in.

In late winter 2011, the field notes of the late F. M. Shillaker, a naturalist and amateur botanist from Chezacut in the central Cariboo, were discovered in Wayne Campbell's personal library. The period includes daily records for five years between 1939 and 1943. This new information will be added to next year's report.

**Figure 93.** Hundreds of Black Oystercatcher nests have been photographed in the province, which would allow an interesting study on the differences in use of nest material between the outer and inner coasts of the province. In this photo, rock fragments comprise most of the nest substrate that is augmented with pieces of mussel, barnacle, and limpet shells. *Photo by R. Wayne Campbell, Volcanic Islets, BC, 23 June 1975.*

## Total Breeding Records - Family and Species

**Family Anatidae** – **Geese, Swans, and Ducks (2,459):** Canada Goose – 671, Mute Swan – 21, Wood Duck – 139, Gadwall – 68, American Wigeon – 35, Mallard – 465, Blue-winged Teal – 14, Cinnamon Teal – 11, Northern Shoveler – 22, Northern Pintail – 4, Green-winged Teal – 20, Canvasback – 34, Redhead – 246, Ring-necked Duck – 76, Lesser Scaup – 40, Harlequin Duck – 6, White-winged Scoter – 2, Bufflehead – 104, Common Goldeneye – 49, Barrow's Goldeneye – 217, Hooded Merganser – 56 (Figure 94), Common Merganser – 62, and Ruddy Duck – 97.

**Figure 94**. Female Hooded Merganser with brood of Class IA ducklings, about 5 days old. *Photo by Vicky Atkins, near Vernon, BC, 10 June 2011.*

**Family Phasianidae** – **Partridges, Pheasant, Grouse, Ptarmigan, and Turkey (246):** Gray Partridge – 1, Ring-necked Pheasant – 21, Ruffed Grouse – 93, Spruce Grouse – 44, Willow Ptarmigan – 35, White-tailed Ptarmigan – 14, Dusky Grouse – 18, Sooty Grouse – 14, Sharp-tailed Grouse – 1, and Wild Turkey – 5.

**Family Odontophoridae** – **American Quail (122):** California Quail – 122.

**Family Gaviidae** – **Loons (110):** Red-throated Loon – 2 and Common Loon – 108.

**Family Podicipedidae – Grebes (796):** Pied-billed Grebe – 96, Horned Grebe – 23, Red-necked Grebe – 126, Eared Grebe – 441 (Figure 95), Western Grebe – 108, and Clark's Grebe – 2.

**Figure 95.** Documenting records with colour photographs, like this Eared Grebe nest, provides an immediate sense of the type and arrangement of nest materials. *Photo by Nancy Krueger, Pantage Lake, BC, 16 July 2011.*

**Family Hydrobatidae** – **Storm-Petrels (267):** Fork-tailed Storm-Petrel – 106 and Leach's Storm-Petrel – 161.

**Family Pelecanidae** – **Pelicans (120): American White Pelican –** (120).

**Family Phalacrocoracidae** – **Cormorants (2,194):** Brandt's Cormorant – 40, Double-crested Cormorant – 230, and Pelagic Cormorant – 1,924.

**Family Ardeidae** – **Bitterns, Herons, Egrets, and Night-Herons (604):** American Bittern – 5, Great Blue Heron – 591, and Green Heron – 8.

**Family Cathartidae** – **Vultures (3):** Turkey Vulture – 3.

**Family Accipitridae** – **Osprey, Kites, Eagles, Hawks, and Allies (560):** Osprey – 232, Bald Eagle – 236 (Figure 96), Northern Harrier – 5 (Figure 97), Sharp-shinned Hawk – 1, Cooper's Hawk – 13, Northern Goshawk – 4, Broad-winged Hawk – 5, Swainson's Hawk – 3, Red-tailed Hawk – 57, and Golden Eagle – 4.

**Figure 96.** Finding a Bald Eagle nest in the boreal forest is often challenging but when it contains three nestlings it is worth the effort. *Photo by Vi and John Lambie, near Mackenzie, BC, 17 June 2011.*

**Figure 97.** Most Northern Harrier nests in British Columbia have been found in wetlands in the south-central region of the province. This nest, discovered in a bulrush marsh near Quilchena, has downy chicks about two weeks old. *Photo by R. Wayne Campbell, June 2011.*

**Family Falconidae** – **Falcons (88):** American Kestrel – 45, Merlin – 7, Gyrfalcon – 3, Peregrine Falcon – 31, and Prairie Falcon – 2.

**Family Rallidae** – **Rails, Gallinules, and Coots (489):** Virginia Rail – 18 (Figures 98 and 99), Sora – 85, and American Coot – 386.

**Figure 98.** Adult Virginia Rail giving alarm calls suggesting that chicks are nearby. *Photo by Kevin Atkins, Vancouver, BC, 23 May 2011.*

**Figure 99.** Three tiny Virginia Rail chicks, the cause for alarm by a nearby parent. *Photo by Kevin Atkins, Vancouver, BC, 23 May 2011.*

**Family Gruidae** – **Cranes (34):** Sandhill Crane – 34.

**Family Charadriidae** – **Plovers (169):** Semipalmated Plover – 1 and Killdeer – 168.

**Family Haematopodidae Oystercatchers (266):** Black Oystercatcher – 266.

**Family Recurvirostridae** – **Stilts and Avocets (2):** Black-necked Stilt – 2.

**Family Scolopacidae** – **Sandpipers, Phalaropes, and Allies (119):** Solitary Sandpiper – 3, Spotted Sandpiper – 87, Long-billed Curlew – 5, Wilson's Snipe – 7, and Wilson's Phalarope – 17.

**Family Laridae** – **Gulls, Terns, and Allies (8,109):** Bonaparte's Gull – 5 Mew Gull – 11, Ring-billed Gull – 1,148, California Gull – 21, Herring Gull – 119, Glaucous-winged Gull – 6,390, Caspian Tern – 11, Black Tern – 343 (Figure 100), and Arctic Tern – 61.

**Figure 100.** Typical location of a Black Tern nest with a single egg (off-centre right) built on a nest platform placed among bulrushes. *Photo by R. Wayne Campbell, near Douglas Lake, BC, June 2011.*

**Family Alcidae** – **Auks, Murres, and Puffins (800):** Common Murre – 57, Thick-billed Murre – 36, Pigeon Guillemot – 86, Marbled Murrelet – 10, Ancient Murrelet – 8, Cassin's Auklet – 186, Rhinoceros Auklet – 218 , and Tufted Puffin – 199.

**Family Columbidae** – **Pigeons and Doves (74):** Rock Pigeon – 40, Band-tailed Pigeon – 18, Eurasian Collared-Dove – 7, and Mourning Dove – 9.

**Family Tytonidae** – **Barn Owls (13):** Barn Owl – 13.

**Family Strigidae** – **Typical Owls (127):** Flammulated Owl – 2, Western Screech-Owl – 13, Great Horned Owl – 56, Northern Hawk Owl – 2, Northern Pygmy-Owl – 2, Burrowing Owl – 2, Barred Owl – 21, Great Gray Owl – 9, Long-eared Owl – 1, Short-eared Owl – 2, and Northern Saw-whet Owl – 17.

**Family Caprimulgidae** – **Goatsuckers (17):** Common Nighthawk – 15 (Figure 101) and Common Poorwill – 2.

**Figure 101.** Common Nighthawk nest and eggs. *Photo by Kevin Knight, Wigwam Flats, BC, 12 July 2011.*

**Family Apodidae** – **Swifts (4):** Black Swift – 1 and Vaux Swift – 3.

**Family Trochilidae** – **Hummingbirds (80):** Black-chinned Hummingbird – 1, Anna's Hummingbird – 16, and Rufous Hummingbird – 63.

**Family Alcedinidae** – **Kingfishers (28):** Belted Kingfisher – 28.

**Family Picidae** – **Woodpeckers (313):** Lewis's Woodpecker – 37, Williamson's Sapsucker – 2, Yellow-bellied Sapsucker – 2, Red-naped Sapsucker – 51, Red-breasted Sapsucker – 47, Downy Woodpecker – 21, Hairy Woodpecker – 67, American Three-toed Woodpecker – 6, Black-backed Woodpecker – 1, Northern Flicker – 73, and Pileated Woodpecker – 6.

**Family Tyrannidae** – **Tyrant Flycatchers (268):** Olive-sided Flycatcher – 2, Western Wood-Pewee – 17, Alder Flycatcher – 2, Willow Flycatcher – 9, Least Flycatcher – 7 (Figure 102), Hammond's Flycatcher – 3, Gray Flycatcher – 5, Dusky Flycatcher – 3, Pacific-slope Flycatcher – 16 (Figure 103), Eastern Phoebe – 31, Say's Phoebe – 19, Western Kingbird – 83, and Eastern Kingbird – 71 (Figures 104 and 105).

**Figure 102.** Least Flycatcher nest with full complement of four eggs. *Photo by Vi and John Lambie, near Mackenzie, BC, 29 June 2011.*

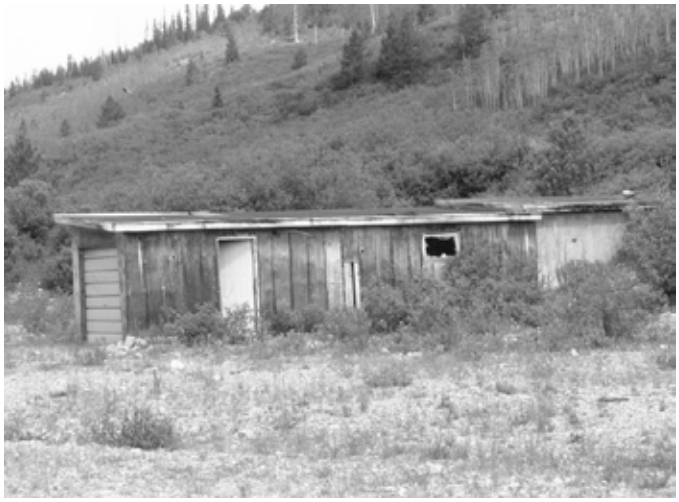


**Figure 103.** About one-third of all Pacific-slope Flycatcher nests reported in British Columbia are found in buildings, both abandoned and occupied. *Photo by Nancy Krueger.*

**Figure 104.** Habitat for a nesting pair of Eastern Kingbirds. *Photo by Nancy Krueger, Tucker Lake, BC, 16 June 2011.*

**Figure 105.** Adult Eastern Kingbird on nest on top of a stub. *Photo by Nancy Krueger, Tucker Lake, BC, 16 June 2011.*

**Family Laniidae – True Shrikes (1):** Northern Shrike – 1 (Figure 106).

**Figure 106**. Most of us are familiar with the Northern Shrike on its non-breeding grounds but few venture into the extreme northwest of the province where a small population nests. The nest discovered in 2011 by a bear biologist is a really good find as there are less than 10 confirmed breeding records for British Columbia. *Photo by Brent Wellander, Creston, BC, 14 May 2010.*

**Family Vireonidae** – **Vireos (23):** Hutton's Vireo – 5, Warbling Vireo – 13, and Red-eyed Vireo – 5.

**Family Corvidae** – **Jays, Magpies, and Crows (220):** Gray Jay – 7, Steller's Jay – 27, Blue Jay – 2, Clark's Nutcracker – 3, Black-billed Magpie – 17, American Crow – 46, Northwestern Crow – 64 (Figure 107), and Common Raven – 54 (Figure 108).

**Figure 107.** Until recently, Northwestern Crow was one of the poorest species represented in BCNRS files. A clue to their nesting activity occurs in late April and early May when they can be followed while carrying sticks and other materials to a nest. *Photo by Kevin Atkins, Vancouver, BC, 23 May 2011.*

**Figure 108.** Because of their location on cliff ledges, most Common Raven nests are difficult to monitor. When they nest in trees, the task becomes much easier and data more useful. *Photo by Vi and John Lambie, near Mackenzie, BC, 5 June 2011.*

**Family Alaudidae** – **Larks (5):** Sky Lark – 4 and Horned Lark – 1.

**Family Hirundinidae** – **Swallows (1,972):** Purple Martin – 66, Tree Swallow – 935, Violet-green Swallow – 63, Northern Rough-winged Swallow – 55, Bank Swallow – 22 (Figure 109), Cliff Swallow – 575, and Barn Swallow – 256.

**Figure 109.** Many Bank Swallow colonies are found in remote areas and can be relocated with GPS coordinates. Having digital images on file with the nest cards helps pinpoint the precise location of the site. *Photo by Vi and John Lambie, near Mackenzie, BC, 13 June 2011.*

**Family Paridae** – **Chickadees (106):** Black-capped Chickadee – 61, Mountain Chickadee – 12, and Chestnut-backed Chickadee – 33.

**Family Aegithalidae** – **Bushtit (43):** Bushtit – 43.

**Family Sittidae** – **Nuthatches (31):** Red-breasted Nuthatch – 26 (Figure 110), White-breasted Nuthatch – 1, and Pygmy Nuthatch – 4.

**Family Certhiidae** – **Creepers (21):** Brown Creeper – 21.

**Family Troglodytidae** – **Wrens (322):** Canyon Wren – 1, Bewick's Wren – 23, House Wren – 45, Pacific Wren – 44, and Marsh Wren – 209.

**Family Cinclidae** – **Dipper (29):** American Dipper – 29.

**Figure 110.** Most Red-breasted Nuthatch breeding information for the province still comes from nest boxes. *Photo by Mark Nyhof, Victoria, BC, 6 May 2011.*

**Family Regulidae** – **Kinglets (27):** Golden-crowned Kinglet – 21 and Ruby-crowned Kinglet – 6.

**Family Turdidae** – **Bluebirds, Thrushes, and Allies (823):** Western Bluebird – 24, Mountain Bluebird – 439, Townsend's Solitaire – 14, Veery – 2, Gray-cheeked Thrush – 1, Swainson's Thrush – 29 (Figure 111), Hermit Thrush – 9, American Robin – 297 (Figure 112), and Varied Thrush – 8.

**Figure 111**. A Swainson's Thrush nest with three well-patterned eggs. *Photo by John and Vi Lambie, near Mackenzie, BC, 7 July 2011.*

**Figure 112.** An American Robin nest is always a treat to discover because of the intense blue colour of the eggs. *Photo by John and Vi Lambie, Mackenzie, BC, 29 May 2011.*

**Family Mimidae** – **Mockingbird, Thrashers, and Allies (25):** Gray Catbird – 24 and Sage Thrasher – 1.

**Family Sturnidae** – **Starlings and Allies (180):** European Starling – 180.

**Family Motacillidae** – **Wagtails and Pipits (5):** American Pipit – 5.

**Family Bombycillidae** – **Waxwings (81):** Cedar Waxwing – 81(Figure 113).

**Figure 113.** The spotted pattern on Cedar Waxwing egg shells is unmistakable. *Photo by Mark Nyhof, Merritt, BC, 14 July 2011.*

**Family Parulidae** – **Wood-Warblers (198):** Orange-crowned Warbler – 15, Nashville Warbler – 2, Yellow Warbler – 72, Magnolia Warbler – 2, Yellow-rumped Warbler – 16, Black-throated Gray Warbler – 10, Townsend's Warbler – 13, American Redstart – 30, Northern Waterthrush – 1, MacGillivray's Warbler – 7, Common Yellowthroat – 25, Wilson's Warbler – 4, and Yellow-breasted Chat – 1.

**Family Thraupidae** – **Tanagers (9):** Western Tanager – 9.

**Family Emberizidae** – **Towhees, Sparrows, Longspurs, and Allies (379):** Spotted Towhee – 36, American Tree Sparrow – 2, Chipping Sparrow – 65, Clay-colored Sparrow – 10, Brewer's Sparrow – 1, Vesper Sparrow – 42 (Figure 114), Lark Sparrow – 2, Savannah Sparrow – 54, Grasshopper Sparrow – 1, Fox Sparrow – 6, Song Sparrow – 59, Lincoln's Sparrow – 4, Swamp Sparrow – 1, White-crowned Sparrow – 28, Golden-crowned Sparrow – 1, and Dark-eyed Junco – 67.

**Figure 114.** Vesper Sparrow nest and eggs. *Photo by Kevin Knight, Wigwam Flats, BC, 12 July 2011.*

**Family Cardinalidae** – **Grosbeaks, Buntings, and Allies (41):** Black-headed Grosbeak – 26 and Lazuli Bunting – 15.

**Family Icteridae** – **Blackbirds, Orioles, and Allies (2,479):** Red-winged Blackbird – 541, Western Meadowlark – 14, Yellow-headed Blackbird – 1,617 (Figure 115), Rusty Blackbird – 3, Brewer's Blackbird – 156, Common Grackle – 6, Brown-headed Cowbird – 94, and Bullock's Oriole – 48.

**Figure 115.** This Yellow-headed Blackbird nest and eggs was not flooded by rising water in June, 2011. *Photo by R. Wayne Campbell, near Douglas Lake, BC.*

**Family Fringillidae** – **Cardueline Finches and Allies (105):** Gray-crowned Rosy-Finch – 7, Purple Finch – 4, Cassin's Finch – 1, House Finch – 50, Red Crossbill – 2, Pine Siskin – 18, American Goldfinch – 19, and Evening Grosbeak – 4.

**Family Passeridae** – **Old World Sparrows (74):** House Sparrow – 74.

**Total nests and/or broods - 25,680 records** (2011 season – 10,955; historical – 14,725)

**Total species** – **245**

## Total Contributors – 2011 Nesting Season and Historical Records

ACarla Ahern and Pat Huet – 61, Alaska Highway Gas Pipeline Survey – 7, Neil Alexander – 2, M. Alvarez and Gary Kaiser – 250, M. Alvarez, Heather Hay, and Gary Kaiser – 119, M. Alvarez, Heather Hay, Norman Holmes, and Gary Kaiser – 118, E. M. Anderson – 1, Errol Anderson – 29, Sandra Anderson – 1, Trevor M. Anderson – 1, Kris Andrews – 4, Anonymous – 381, Gerry Ansell – 1, Cathy Antoniazzi – 6, Ted Ardley – 4, Janice Arndt – 25, Darrell Ashworth and Jeff Piwek – 1 (Figure 116), Wes Aslin – 1, Alfred Atkins – 2, Kevin Atkins – 25, Trevor and Laila Atkins – 1, Vicky Atkins – 13, Vicky and Lloyd Atkins – 457, and R. N. Atkinson – 2.

**Figure 116.** Conservation officers Jeff Piwek (left) and Darrell Ashworth replacing the lid on a box of an active Mountain Bluebird nest. *Photo by R. Wayne Campbell, near Riske Creek, BC, June 2012.*

BSteve Baille – 3, Bob Baker – 1, Fran and Peter Baker – 1, Mike Baker – 5, Ronald Banks – 1, Ed and Mary Barrowclough – 80, Avery Bartels – 1, Margaret Bathy – 3, BC Ecological Reserves – 4, BC Fish and Wildlife Branch – 16, BC Parks – 12, Alice Beals – 29, Marc-André Beaucher – 4, Frank Beebe – 6, Barbara Begg – 12, Desmond Belton – 1, Fred Bennie – 1, Winnifred M. Bennie – 61, Jennifer L. Bergen – 1, Jennifer L. Bergen and F. Don Young – 7, D. Bertram, A. Breault, R. Emery, D. Powell and M. Amedra -1, Ed Beynon – 1, Cory Bialecki – 4, Ray Billings – 1, Ann K. Blackmore – 4, Myrna Blake – 2, Sigal Blay – 2, Peter Blokker – 13, Donald A. Blood – 33, Elsie Boggs – 1, Donna Bonthoux – 1, J. Boone – 27, Barry Booth – 1, Kaiden Bosch – 5, Edna L. Bowen – 2 , Jack Bowling – 1, Ken Boyce – 2 , Ken Boyce and John Boyce – 20, Katherine Boylen – 2, J.A. Bradley – 1, Jan Bradshaw – 126, Gary Breault – 7, Gwen Briggs – 1, Tom Brighouse – 600, British Columbia Forest Service – 3, British Columbia Ministry of Forests, Land, and Natural Resource Operations – 93, British Columbia Wildlife Branch – 64, Allan Brooks – 3, Doug Brown – 14, Gordon Brown – 1, Mary Brown and Doug Charles – 11, Denise Brownlie – 2, D. Brunton – 1, Andrew Bryant – 1, Melda Buchanan – 2, Alan Burger and Dave Garnier – 223, Joop Burgerjon – 4, Burnaby Lake Naturalists – 1, Clyde H. Burton – 1, W. Burton – 1, and Beverly H. Butcher – 120.

CDamon Calderwood – 1, Mike Caldwell – 2, Bob Cameron – 3, Eileen C. Campbell – 37, Eileen C. Campbell and R. Wayne Campbell – 39, Lucille Campbell – 5, R. Wayne Campbell – 5,197 (Figure 117), R. Wayne Campbell and Brent Raphael – 2, R. Wayne Campbell and Brian Petrar – 1, R. Wayne Campbell and Bruce Kennedy – 21, R. Wayne Campbell, D. and M. Hawes – 1, R. Wayne Campbell, Dave and Maggie Spearman – 8, R. Wayne Campbell, Dennis Rodman and Ray Rodman – 66, R. Wayne Campbell and Doug Gilmore – 15, R. Wayne Campbell and Jim Masson – 1, R. Wayne Campbell and Jim West – 1, R. Wayne Campbell and Kim Beaumont – 51, R. Wayne Campbell and Ned Stockman – 381, R. Wayne Campbell and Samuel Woodman – 5, R. Wayne Campbell

and Ted Barnes – 74, R. Wayne Campbell and Walter Scott – 605, R. Wayne Campbell, Karen Wiebe and Midori Mitsutani – 2 (Figure 118), Canadian Broadcasting Company – 5, Canadian Wildlife Service – 10, Canadian Wildlife Service – British Columbia Seabird Colony Inventory – Michael S. Rodway, Moira Lemon, A. Bell, Rob Butler, R. Chaundy, Brian Carter, Michael Force, Dave Garnier, P. Haist, Dick and M. Grinnell, Heather Hay, Norman Holmes, Ian Jones , D. Power, C.M. Rodway, Joy Rodway , Ken Summers, Ann Vallee, and Steve Wetmore – 6,347, Richard J. Cannings – 20, Russell Cannings – 2, Steve R. Cannings – 1, Doug Carrick – 1, Harry R. Carter – 2, Jon Carter – 12, R. Casperson – 1, Gary Cassidy – 11, Donald G. Cecile – 63, Donald G. Cecile and Doug Brown – 1, Central Okanagan Naturalists – 1, Jim Chambers – 2, Chris Charlesworth – 11, Chris Charlesworth, Ryan Tomlinson, and Tanya Seebacher – 1, Graham Clarke – 1, Bruce and Joanne Clayton – 53, Steve Clements – 1, Peggy Collins – 1, Sam Collins – 2, Mike Collins – 15, Cyril Colonel – 3, Cyril Colonel and Bill Piper – 1, Cyril Colonel, Dale Grady and Kyle Lavalee – 9, Carolee Colter – 4, John Comer – 450, Comox Valley Naturalists – 1, Wendy Coomber – 1, Penny Coon – 1, Diane Cooper – 1, Gillian Cooper – 2, J. M. Cooper – 1, Martin Cooper – 6, Heather Cormack – 3, Evi Coulson – 6, Evi and Mel Coulson – 2, Mel Coulson – 1, J. Cousens – 3, Jim Craig – 2, Roger Craik – 2, Creston Valley Wildlife Management Area – 29, Creston Valley Wildlife Management Area and Fish and Wildlife Compensation Program –1, Guy R. Crowther – 1, Bruce Cummings – 1, and Chris Czaijkowski – 1.

**Figure 118.** Assistant Midori Mitsutani (left) and professor Karen Wiebe at an active Northern Flicker nest in their study area. *Photo by R. Wayne Campbell, near Riske Creek, BC, June 2011.*

**Figure 117.** Wayne Campbell searching a bulrush marsh near Shuswap Lake, BC, for nesting grebes, waterfowl, and Black Terns. *Photo by Eileen C. Campbell, June 2011.*

D Brenda Daly – 1, S. J. Darcus – 10, Bob Davidson – 1, Gary S. Davidson – 84, John Davidson – 1, Paul Davidson – 1, Neil K. Dawe – 18, Clifford Day – 1, Milo De Angeles – 2 , Charles de Blois Green – 3, John Deal – 9, M. Devereux – 2, Brent Diakow, Wayne Diakow, Ralph and Clara Ritcey – 1, Jenny Dillon – 1, Jeff Dinsdale – 2, Fred Dobson – 1, D. Donald – 1, Adrian Dorst – 1, Douglas Lake Ranch – 2, Doug Doyle – 37, Rudolf H. Drent – 983, Ducks Unlimited Canada – 27, Bill Duggan and Ann Blackmore – 3, David Dunbar – 120, John Duncan – 1, Peter Dunlevy – 82, Len Dunsford – 1, Eva Durrance – 1, and Linda Durrell – 19.

E John M. Eadie – 2 (Figure 119), Brian Eccles and Mary Morris – 1, Ross Eldridge – 1, Peter Elliot – 3, Colleen Erickson – 8 (Figure 120), H. Erikson – 1, and Tony Erskine – 1.

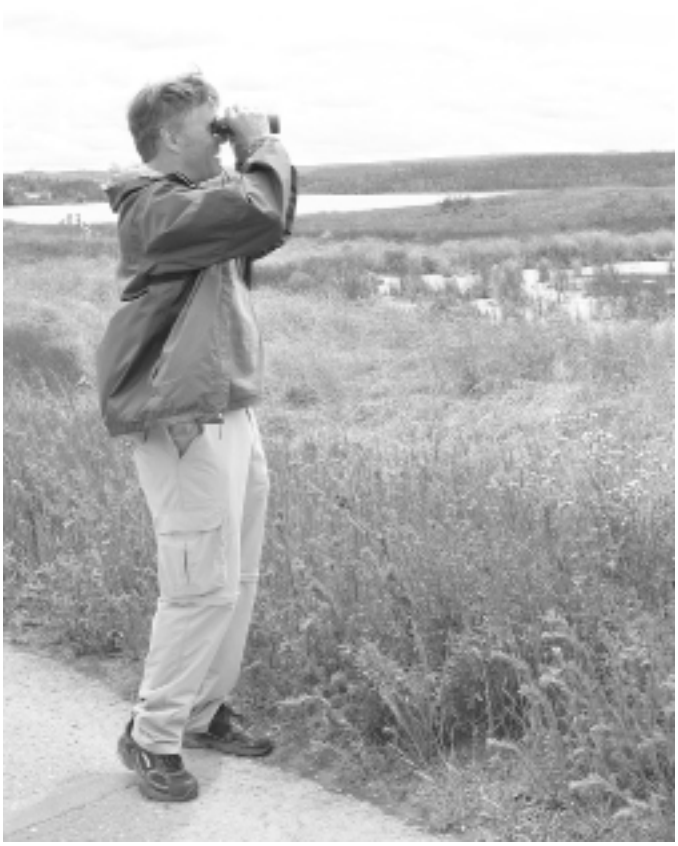


**Figure 119**. John Eadie, who received his Ph.D. from the University of British Columbia in 1989, now a professor at UCDavis in waterfowl biology, was revisiting his old study area at Watson Lake, BC. *Photo by R. Wayne Campbell, June 2011.*

**Figure 120**. With a great enthusiasm for birds, Colleen Erickson is developing an interest in the breeding cycle and is becoming more observant in finding nests. *Photo by Linda M. Van Damme, Creston, BC, 13 June 2011.*

F Jess Findlay – 5, K. J. Fleming – 2, Alfred Flett – 1, E. M. Forbes – 3, Michael Force – 1, Bruce Ford and Bob Cameron – 1, George Forman – 2, FortisBC – 1, Bristol J. Foster – 53, Lee Foster – 2, G.L. Fox – 1, Alistair Fraser – 2, and D. Lorne Frost – 8.

G Gord Gadsden – 4, Doug Galbraith – 1, Bryan R. Gates – 3, Ed and Pat Gauthier – 11, George C. Reifel Migratory Bird Sanctuary – 20, Ralph and Elsie Gerein – 65, Les Gibbard – 5, Les and Violet Gibbard – 6, R.T. Gibbard – 3, Violet Gibbard – 4, Doug Gilmore – 2, Dan Glover – 1, Dan Golnick – 1, J. E. Victor Goodwill – 11, J. E. Victor and Margaret Goodwill – 6 , Kent Goodwin – 1, Brian Gordon – 2, Hilary Gordon – 10, Hilary Gordon and Dan Golnick – 6, Hilary Gordon, Dan Golnick and Susan Young – 1, Orville Gordon – 1, Fred Gornal – 7, Ted Goshulak and Dave Nicholl – 3, Robert Gowan – 7, Amber Graham – 5, Chad Graham – 2, Douglas J. Graham – 1, Ron Granger – 1, Don Grant – 2, James Grant – 4, Ryan Grant – 65, Sandra Gray – 2, Pat Green – 15, R. Greyell – 5, Isabella Groc – 1, Charles J. Guiguet – 16, Charles J. Guiguet and Clifford Carl – 4, Charles J. Guiguet and Patrick W. Martin – 350.

H Penny Hall – 11, Hancock Wildlife Foundation Webcam – 5, Bob Handfield – 5, Willie Haras – 3, Alton Harestad – 1 (Figure 121), Barry Harman – 1, Alexis Harrington – 2, Joe Harrison – 1, Tammy Harrison – 1, David F. Hatler – 3, Heather Hay and Gary Kaiser – 178, Heather Hay and Norman Holmes – 112, Robert B. Hay – 1, Grant Hazlewood – 3, E.B. Hearn – 2, Jason Henry – 18, Joan E. Heriot – 2, Debra Herst – 3, Jerry R. Herzig – 3, Werner and Hilde Hesse – 2, Werner and Hilde Hesse and Chris Siddle – 1, Bonnie and Eugene Hetherington – 1, Elizabeth Hewison – 1, Ted Hillary – 193, Mark Hobson – 5, John Hodges – 4, M. Holman – 2, M. and J. Holman – 1, Don and Jean Holmes – 1, Randy Hopkins – 7, Don Horne – 1, Steve Howard – 16, Richard R. Howie – 22, Andrea Huber – 1, Hudson's Hope Museum – 2, Pat Huet – 16, Pat and Dave Huet – 1, Pat Huet and Linda Van Damme – 1, Ian Hughes – 2, William M. Hughes – 8, and W. Huxley – 1.

**Figure 121.** Alton Harestad, a retired mammalogy professor from Simon Fraser University, sends in nest cards as he encounters breeding evidence during his travels. *Manning Park, BC, 23 August, 2009.*

I Doug Innes – 16, Doug and Marian Innes – 18, and John Ireland – 1.

J Evelyn Jaarsma – 2, Ron Jakimchuk – 2 (Figure 122), Pat Janzen – 3, Ron Jeffries – 8, Len Jellicoe – 6, Richard Jerema – 4, Leo Jobin – 3, Kas and Joan Jochim – 1, Gordon Johnson – 2, Dale Johnston – 1, Marlene Johnston – 35, Stuart Johnston – 1, Mae Jones – 1, Laura Jordison – 1, Simon Jorgensen – 7, and Jeffrey Joy – 1.

**Figure 122.** Ron Jakimchuk submits nest information as he comes across it while tending his large garden in North Saanich. Here, he is at UBC researching theses for a memorial volume he is contributing to on the late Ian McTaggart-Cowan. *Photo by R. Wayne Campbell, Vancouver, BC, 5 May 2010.*

Kamloops Naturalists – 1, Ronda Karliukson – 11, Clive Keen – 10, Tim Kendrick – 1, Ken Kennedy – 4, Frances Kermode – 1, Arash Khoddamy – 1, Derek Killby – 1, Frank Kime – 1, Jeremy Kimm – 3, Bill Kincaid – 2, Ethel Kippin – 591, Sam Kirby – 1, Derek Kite – 1, Kevin Knight – 6, Nancy Krueger – 64, Nancy Krueger and Cathy Antoniazzi – 10, Nancy Krueger, Rod Sargent, and Robb Paterson – 1, Nancy Krueger and Cathy Sweet – 1, Nancy Krueger and Joanne Vinnedge – 18, Nancy Krueger and Karen Krushelnick – 18, Nancy Krueger and Pat Michel – 1, Nancy Krueger and Rod Sargent – 87, Nancy Krueger, Avery Bartels, Christopher Dicorrado and Joanne Vinnedge – 6, and Nancy Krueger, Cathy Sweet and Liz Hewison – 1.

Elsie Lafreniere – 26, Hamilton M. Laing – 4, Michelle Lamberson – 17, John D. and Vi Lambie – 85, Langley Naturalists – 1, J. Langstaff – 1, Laird Law and Sandra Kinsey – 1, Jim Lawrence – 2, Adrian Leather – 3, Adrian Leather and Rod Sargent – 1, Rick Leche – 2, Martin C. Lee – 11, Enid K. Lemon – 5, Sherry Linn – 6, Georgina Lisoway – 2, R.A.Lisson – 1, Marcia Long – 78, Barb Lucas – 4, Jim B. and Betty Lunam – 2, Robert E. Luscher – 4, John Lynch – 19 , and Justin Lynch – 1.

Keith MacDonald – 21, R. R. MacFarlane – 2, Jim Mack – 4, Rob Mackenzie-Grieve – 1, Roger MacKinnon – 1, Alan MacLeod – 1, Walter S. Maguire – 5, Diana Maloff – 3, Richard Marshall – 1, Jim Martin – 9, Patrick W. Martin – 3, M. Mayfield – 1, D. Maynes – 1, Rosemary McAninch – 1, T.T. McCabe – 1, Sean McCann – 3, Steve McCormick – 1, Lynne McFetridge – 1, Carolyn McGhee – 3, Mike McGrenere – 11, Mike and Barb McGrenere – 2, Lorne D. McIntosh – 7, Peter McIver – 1, Bruce McKay – 1, William D. McLaren – 8, Neil Mclean – 1, Ed McMackin – 15 (Figure 123), Sandy McRuer – 10, M. Merkens – 1, Arthur L. Meugens – 9, Harry Middleton – 1, Jim Middleton and Josh Anderson – 144, Jim Mitchell – 2, Rich Mooney – 5, Elaine Moore – 1, Elaine Moore and Janice Arndt – 3, Elaine Moore and Tim Kendrick – 1, C. Morey and C.E. Nielsen – 1, F. Morgensen and C.E. Nielsen – 1, Ken P. Morrison – 2, Don Munro – 1, James A. Munro – 216, Maury Murphy – 4, and Daryll Myhr – 1.

**Figure 123.** Naturalist and retired biologist Ed McMackin has been a long-time contributor to the British Columbia Nest Record Scheme. *Photo by Linda M. Van Damme, Arrow Creek, BC, 10 June 2011.*

Nanaimo Bird Alert – 2, Nanaimo Field Naturalists – 1, Laure W. Neish – 7, R. Wayne Nelson – 1, J. Newell – 1, Fran Newson – 2, Verna Newson – 1, Dean Nicholson – 1, North Okanagan Naturalists Club – 44, Ivar Nygaard-Petersen – 13, Mark Nyhof – 706 (Figure 124), and Elsie Nykyfork – 56.

**Figure 124.** Mark Nyhof has been a major contributor to the British Columbia Nest Record Scheme since the 1980s and has co-authored the past three annual reports. *Photo by Rose Nyhof, near Holberg, BC, 25 June 2011.*

O100 Mile House Visitor Centre – 1, Steve Ogle – 1, Oliver-Osoyoos Naturalist Club – 1, and Lorne Ostendorf – 1.

PRoger Packham and Sandra Neill – 1, Linda and Dave Page – 1, Mary Pastrick – 17, Gerrie Patterson – 1, W.A.B. Paul – 1, Theed Pearse – 1, Bill Pennell – 1, Dave Peppar – 16, Margo Pepper – 1, Janne Perrin – 68, Brian J. Petrar – 3, Carol Pettigrew – 4, Julian Phillips – 1, Mark Phinney – 5, Dirk Pidcock – 23, Pitt Waterfowl Preservation Society – 23, J. Plowden-Wardlaw – 2, Ken Possum – 2, Douglas Powell – 2, Gerry Powers – 1 , G. Allen Poynter – 48, Margaret and Al Preston – 2, and Sandy Proulx – 70.

QJay Quathamer – 1 and Quesnel Naturalists – Adrian Leather, Marv and Lorna Schley, Orie and Gloria Kolenchuk, Sally Hofmeier, Alex and Luanne Coffey, Eleanor Christensen, Kathie Davis, Doris Wittman and Gerda Wittman – 19.

RKenneth Racey – 26, Ron Racine – 14, Marilyn Rack – 1, Brian Radford and Chris Dickson – 6, Varri Raffan – 12, W. Raine – 1, Gwen Rainwater – 2, Phil Ranson – 1, Dr. Tom E. Reimchen – 1, Marilyn Rempel – 2, Sheila Reynolds – 9, S.N. Rhoads – 2, Arlene Richardson – 1, Bruce Richmond – 1, Ralph W. Ritcey – 64, Derek Roberson – 1, Anna Roberts – 8, Neil Robins – 8, R. Robinson – 10, Laurie Rockwell – 22, Jeremy Rogers – 1, Manfred Roschitz – 1, Holly Rubinsky – 3, Rand Rudland – 1, Glenn R. Ryder – 622, Glenn R. Ryder and Chris Buis – 1, and Glenn R. Ryder and Ken Summers – 2.

SRod Sargent – 6, Dave Schutz – 69, Lorraine Scott – 1, Lorraine Scott and Sharon Laughlin – 30, Scout Island Nature Centre – 10, Verena Shaw – 30, F.M. Shillaker – 9, Chris Siddle – 391 (Figure 125), Joanne A. Siderius – 2, Fred A. Simpson – 42, Tania Simpson – 23, Tom Skinner – 1, Pat Smith – 2, Steve Smith – 2, Wayne Smith – 1, Nicole Soltys – 1, South Okanagan Naturalists Club – 2, Tom Sowerby – 2, Gail Spitler – 3, William D. Spreadborough – 3, J. Stainer – 1, Elsie Stanley – 1, John Steadman – 64, Pat Stent – 1, Brian Stetch – 1, David Stirling – 5, David Stirling and Neil K. Dawe – 1, Tom and Luane Stowe – 1, Jim Street – 1, D. Stuart – 1, Brian G. Stushnoff – 26, Sunshine Coast Natural History Society – 2, Ian Sutherland – 4, J. Svenson – 1, Richard Swanston – 3, Harry S. Swarth – 3 and Lorraine Symmes – 1.

**Figure 125.** Chris Siddle, who just published a major treatise on the *Birds of the North Peace River* (see *Wildlife Afield* 7(1):12-123, 7(2): 143-280, 2010), has contributed thousands of nest cards to the BCNRS over the past three decades. *Photo by Sonja Siddle, 11 September 2011.*

T Eric M. Tait – 1, Keith Taylor – 1, Howard A. Telsoky – 3, The Province –1, Don Thomson – 7, Mel Thorn – 1, Ryan Tomlinson – 1, Colin S. Trefry – 2, Roger Tremblay – 2, Jim and Deirdre Turnbull – 1, and Danny Tyson – 1.

V Ann Vallee – 10, Cornelia van Berkel – 4, Linda M. Van Damme – 967, Linda M. Van Damme and Marc-André Beaucher – 25, Deon van der Heever – 3, Vancouver Avian Research Centre Blog – 3, Vancouver Natural History Society – 8, Neil Vanderwolf –1, Kees Vermeer – 1, Victoria Natural History Society – 153, and Victoria Rare Bird Alert – 11.

W Rick Wagner – 2, Jean Waite – 2, Ross G. Waters – 48, Richard Watkins – 128, Scott Webb – 1, Wayne C. Weber – 5, Robert Weeden – 6, Rita Wege – 27, Don Weixl – 1, Brent Wellander – 25, Ron Welwood – 1, R. West – 2, Elizabeth Weton – 1, Paul Whalen – 3, Mildred V. White – 6, Wild Birds Unlimited (Victoria) – 16, Wildlife Rescue Association of British Columbia – 1, Williams Lake Field Naturalists – 59, P. Ray Williams – 8, Alan and Elaine Wilson – 5, Doug Wilson – 1, Doug Wilson, Jocelyn White and Tim Newman – 1, Gwynneth Wilson – 5, Mike Wisnicki – 7, Michael Woolfe – 1, Marcus Womersley – 11, Karl Woodman – 10, Samuel Woodman – 8 (Figure 126), Karl Woodward – 6, David Woolgar – 1, Kenneth G. Wright – 1, and J. Wynne – 5.

**Figure 126.** Samuel Woodman, a keen and knowledgeable observer, provided a few notable breeding records for the south-central region of the province in 2011. *Photo by R. Wayne Campbell, near Minnie Lake, BC, June 2011.*

Y Mike Yip – 5.

Z Barry Zettergreen – 2 and Eric Zhou – 3.

**Contributors for 2011** – 307

**Total contributors** – 608

# Long-Term Inventory and Monitoring Projects

Long-term inventory and monitoring programs are one of the most important contributions of the BCNRS. These programs are particularly useful because birds are prime indicators of environmental change. They are sensitive to environmental contaminants and subtle changes in their habitat. Monitoring of colonial nesting birds and birds of prey has been a focus of the BCNRS for decades, and these studies are particularly relevant because many members of both groups are at the end of food chains.

Long-term programs are most successful with individuals and non-profit groups, as their members are passionate and dedicated to a long-term commitment. Also, they are free of public and professional pressures that governments, university researchers, and wildlife consultants have to respond to each year.

Over the past 57 years, a wealth of annual information on the breeding biology and species chronology has been stored in BCNRS files and this has been augmented with historical records dating back 127 years. The long-term gathering of information has allowed statements to be made with some confidence about the changes in species' distribution, breeding, incubation periods, and productivity, as well as the ability of species to adapt to new habitats, changes in the use of nesting material, and population changes.

In 2011, the regular monitoring and survey projects continued with some surprising results. These are listed below under separate species and location categories.

## Colonial-nesting Fresh-water Birds

### Western Grebe/Clark's Grebe

***Salmon Arm Bay (including Christmas Island)***

**Ted Hillary** writes: *We had a wind storm July 6th which destroyed most of the nests despite being fairly well protected. I think that 4 nests have hatched, though I have confirmation of only* two. *The grebes are scattered all over the Bay, many doing courtship activities, though I don't yet know where and when they will rebuild. My high count for grebes was on May 6 when there was 380. The usual number has been between 200 and 250, though it is really difficult to determine because they are all over the Bay. There should be some good nesting spots, so we'll just have to wait and see what happens. The water is rapidly going down, and if they nest where they were before they run the risk of becoming landlocked.*

*There have been 2 Clark's grebes pairing off with western grebes, one on either side of the wharf. The one on the west side, a male I think since the female was on the nest, was one of the nests which was destroyed; the pair are still around and courting so I believe they will rebuild. I don't know where the other one is at*

**Figure 127**. Despite wind storms during the breeding season a significant number of Western Grebe nests were successful in 2011. *Photo by Clive Bryson, Shuswap Lake, BC, 1 July 2011.*

*this time. There is also at least one hybrid with a mostly yellow bill and the black going through the eyes.*

*After our wind storm I don't know where they nested, but it appears that they were from the mouth of the river to Christmas Island* (Figure 127). *Last Saturday, August 13, I counted 93 young from newborns riding on parents' backs to those almost adult in size, scattered all over the Bay, so very difficult to pick up.*

*Clark's grebes are even more difficult to pick out. The most I have seen were 2 separate adults, one on either side of the wharf in June. On Sunday August 14, however, I did see near Christmas Island a female Clark's grebe with at least 1 young, only several days old, riding on her back and peeking its head out to be fed by a male western grebe. The female was considerably larger than the male. There was probably two or more young under the feathers of the female because there was more of a bulge on the female's back than the one young would have created.*

*There was one really noisy young right near the wharf constantly begging for food on October 14. There were probably a couple of other families with one young at about the same age. These were scattered about the Bay so more difficult to see.*

As a follow-up to the 2011 nesting season, Ted recorded numbers of Western Grebes in Salmon Arm Bay, most of which were probably still family aggregations. He counted 315 Western Grebes on October 13 (high count), 231 on October 17, 158 on October 17, one on October 21, and 98 on October 23. In November, numbers fluctuated but were probably mostly composed of migrants from the Canadian prairies. There were 31 grebes on November 18.

The Shuswap Lake grebe report prepared by **Ed** and **Monica Dahl** for 2011, and published in the Fall *Salmon Arm Bay Nature Enhancement Society Newsletter* available at http://sabnes.org/ is reproduced, with permission:

*It has been an interesting spring and summer on Shuswap Lake. Monica and I started counting the Western Grebes May 11th, when the lake water level was 345.82 metres above sea level. The low level for the year was recorded at 344.97 m. on March 15th and 16th, so the lake level had increased by 0.85 m. We counted 258 Western Grebes on May 11th. There was no evidence of nest-building and not much courting going on.*

*There were 213 grebes on May 21st, ten days later, and the lake level had escalated by 0.77 m. In the next ten days the level increased by 0.95 m which is about 4 inches per day. The grebes were not as easily found during that count. We counted only 121. Likely the grebes were nesting, although this wasn't noticeable.*

*Our first sighting of nests was on June 8th. We counted 9 between the Prestige Inn and Peter Jannick Park. On June 15th we counted 22 nests in the same area and the water level was 348.42 m and only rose to 348.50 m the following week.*

*The Government of Canada high water level for the year was recorded at 348.863 m about July 25th, while the records of the City indicated a high level of 348.63 June 25-28. The high water level in 2008 was 348.74 m on June 9th.*

*June 30th we counted 91 adult Western Grebes and 1 Clark's Grebe, 8 nests and 2 newly hatched young grebes* (Figure 128). *The Grebes were still courting despite many nests having been destroyed the previous night by a wind storm which created waves. Clive Bryson observed that strong winds through the night had wiped out the remaining nests.*

**Figure 128.** In 2011, the first Western Grebe chicks were reported on 30 June. *Photo by Clive Bryson, Shuswap Lake, BC, 30 June 2011.*

*July 6th the grebes were spread out all over Salmon Arm Bay. We counted 84 adults, 10 young and one nest. The lake water level was in decline, at 348.51 m.*

*We continued to count the Grebes even though the situation appeared somewhat dismal. By July 20th there were 19 young, and the total keeps on rising. On August 10th we counted 155 adults, 70 young which we think were from 54 families.*

*August 24th we counted again, 197 adults and 111 juveniles. Our count of families was 76. It's quite likely that the number of families is slightly high because some of the young are quite developed and don't necessarily remain close together. It is remarkable that so many young have hatched despite the destruction of nests during wind events at high water.*

**Clark's Grebe** was first reported in the province in 1981 and a decade later a male was observed caring for young with a female Western Grebe (see *Wildlife Afield* 6(1):40-105, 2009). The only evidence of breeding in 2011 was an observation from **Ted Hillary** who reported "On 14 August, a chick was on the back of an adult Clark's Grebe being fed by an adult Western Grebe."

***Duck Lake (Creston)***

**Linda Van Damme** has monitored the Western Grebe nesting activity on Duck Lake since 1992. Due to high water levels in 2011, the grebes were late breeding. She reports:

*Fifty-seven Western Grebes were observed on July 23rd with many engaged in courtship behaviour and one pair was busy nest-building. By July 27th, numbers had increased to 61 adults, including a lone Clark's Grebe, and four pairs were actively building nests. On August 2nd, 57 adults plus, the Clark's Grebe, were counted along the southeast shore of the lake. Eight shallow nests were observed with adult Western Grebes in attendance. Nine nests were counted on August 8th, with six adults sitting while other grebes were adding material to shallow-based nests. Seven adults were observed sitting on nests on August 9th, however, by the 14th only three nests had sitting adults while two others had adults adding nesting materials to what appeared to be shallow platforms. It was a very windy day which was causing the extensive milfoil mat to break up. It was another stormy day on August 15th, with whitecaps on the lake and only three nests were visible. All nests were gone the following day. On August 17th, seven adults were milling around the nesting area while 19 were swimming toward the middle of the lake with three pairs engaged in courtship behaviour which included dancing across the water. But sadly, it was another year of failure for the Duck Lake colony which has had only one successful breeding season in the last five years.*

***Leach Lake (Creston)***

**Marc-André Beaucher** observed a single pair of Western Grebes, with two downy chicks, in "Pond 1" on August 4th. The following day a pair of grebes was seen in the same general area but only one chick was visible on the adult's back.

**Great Blue Heron**

**Figure 129.** Many nesting colonies of Great Blue Heron in British Columbia are ephemeral in nature and may relocate annually or after decades of existence. *Photo by R. Wayne Campbell, Vernon, BC, 6 June 1998.*

**Great Blue Herons** (Figure 129) may nest singly or in large colonies of up to 170 pairs, although the most substantial colonies in the province average around 50 pairs. At some sites, members of colonies seem content to carry out their breeding activities in areas of high industrial activity and human presence while at other more remote and less disturbed sites they tend to have an irregular pattern of occupancy. The reasons are not clear but monitoring activity, even records of presence and absence, is important to ascertain population trends and shifts.

The BCNRS continues to be the only central, long-term repository for such information in

British Columbia. Although some individuals and organizations have initiated their own monitoring programs, they are encouraged to contribute their regional findings so that a complete provincial picture can emerge over time.

In 2011, 14 colonies were surveyed across southern portions of the province, including Vancouver Island. Three new sites were discovered and three others were vacated that were active in 2010. At one site a couple of trees containing nests were blown down from wind storms and at another site in North Saanich, a pair of Great Horned Owls usurped a heron nest in the middle of the colony and raised two young. In the 1970s, on the UBC Endowment Lands in Vancouver, a heron colony survived for years with a pair of owls nesting on the edge so the North Saanich colony may have moved for other reasons. Local residents mentioned that constant human disturbance and Raccoon predation may have had negative impacts.

Breeding adults usually return to colonies in March and early April each year, but at one colony in Saanich, two or three adult herons remained in the vicinity of the colony from late December 2010 through to site occupancy in early March 2011.

Details for heron colonies at two locations monitored over the entire breeding season are mentioned below.

### *Creston Valley*

**Linda Van Damme** reported that the Great Blue Herons returned to the new colony site at **Leach Lake** which was established in 2010. It is situated along a bend in the Kootenay River, northwest of the original site. About the third week of March, herons were busy refurbishing existing nests or building new ones. By the end of April, 69 nests were occupied by adults, a substantial increase over the previous season. No herons were observed nesting among the Double-crested Cormorants which had pirated the original nesting trees (see *Wildlife Afield* 4(2): 213-232, 2007) nor was there any sign of cormorants infiltrating this new site. Again, most heron nests were obscured once the trees leafed out in May.

The smaller heron colony at the south end of the valley also grew in size and had a successful season. Bald Eagles were again observed perched along the western boundary of black cottonwood trees in the vicinity of the heronry but no predation was witnessed.

A single nest close to **Creston** town limits was abandoned after being occupied for a month. A second occupied nest was found at this location but could not be seen when the trees leafed out so the outcome was unknown.

### *North Saanich (Vancouver Island)*

This colony, located in a mixed coastal forest of Douglas-fir, western redcedar, western hemlock, red alder, and bigleaf maple was abandoned in 2011. Two reasons have been postulated. A pair of Great Horned Owls raised their family in one of the heron nests starting in late March and together remained in the area until mid-July. The other is human disturbance. The site is being monitored by at least four different groups and individuals (Figure 130) and is frequently visited by curious residents, photographers, and mushroom pickers.


**Figure 130.** Individual trees in this Great Blue Heron colony in North Saanich have been marked with flagging tape during the past several years of monitoring. *Photo by R. Wayne Campbell.*

***Stanley Park (Vancouver)***

For eight years, since 2004, the **Stanley Park Ecology Society (SPES)**, based in Vancouver, has been monitoring the nesting activity of Great Blue Herons in the park weekly from March through mid-August. The Society publishes an annual report of their findings, which is available at http://www.stanleyparkecology.ca/programs/conservation/urbanwildlife/herons. We have extracted summary information below from their 2011 annual report.

The 'Pacific' Great Blue Heron (*Ardea herodias fannini*) colony in Stanley Park survived another hard year in 2011 as it was battered by bad weather in spring and near-constant eagle [Bald] predation throughout the season. Eagles have regularly taken chicks and eggs each year, but this year the attacks were ongoing from early April until July. Usually by June, many of the heron chicks are large enough to start testing their wings and exploring nearby branches but this year, due to a long, cold spring, many chicks did not begin to fledge until much later.

Despite the challenges, the heron colony persisted and we are thankful that they did not abandon this urban nesting area. One of the growing threats to this species at risk is pressure from Bald Eagles, and it is not uncommon for heron colonies to completely abandon their nesting sites. In 2011, the heron colony on the Endowment Lands at the University of British Columbia did just that and each winter we cross our fingers that the herons will return to Stanley Park in the spring.

Throughout the nesting season, SPES staff and volunteer heron monitors tracked the progress of the Great Blue Heron colony. Monitors on the ground track the total number of nests and nest activity, while monitors observing from the top of a nearby apartment building closely observe a representative sample of nests.

By the end of April, 112 nests were present in the tree-top colony with approximately 78 (70%) occupied. We began the season by monitoring a sample of 28 nests which shrank to 21 by the end of the season (the 7 missing nests were either dismantled or not visible due to the leafing in of the trees). The trees on the south end of the colony (across from the Park Board office) were colonized first in March and the nests across the street (towards the Fish House) were occupied shortly after in April. By early May, 82% of the sample nests were occupied and about 75% of the heron pairs had begun incubating eggs.

From a sample of 21 nests, we found a nesting success rate of 57% (nests that successfully fledged chicks) and a productivity rate of two chicks per successful nest (Figure 131). These numbers are similar to last year, despite the relentless eagle attacks this season and we believe this was only possible because of the repeated nesting attempts of the heron pairs.

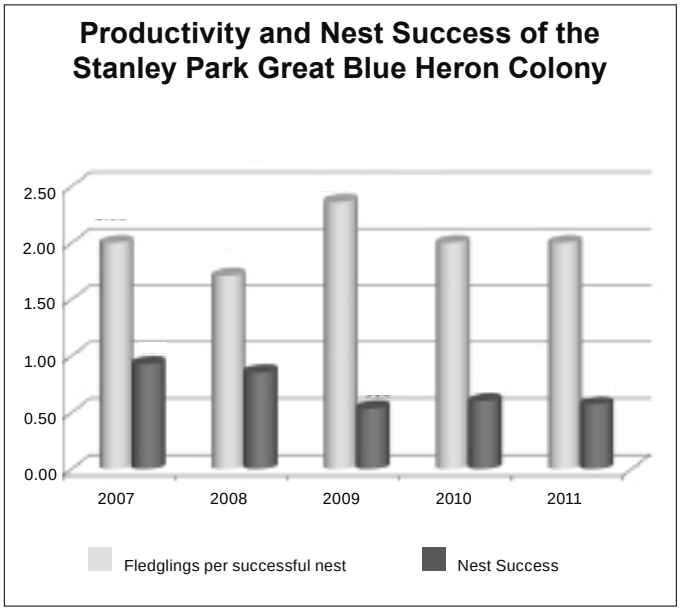



**Figure 131.** Productivity rate (number of chicks per successful nest) and nest success (number of nests that successfully produced chicks) of the Stanley Park great blue heron colony from 2007 to 2011.

This year the predation of eggs and nestlings by raccoons was not observed due to the installation of metal tree guards by SPES in 2010. One third of the nests were predated by raccoons in 2009. However, there was nothing to be done when local eagles decided to raid the colony for eggs and chicks throughout the entire season. In late April, at least 22% of the sample nests had already been predated by eagles. The herons were resilient though, and by the end of the season almost one third of the pairs had successfully produced second and even third clutches. The overall number of nest failures for the year was about 37% which would represent 40 nests in the entire colony. Of the failed nests, 40% were confirmed to have

been predated by eagles, but we believe it was much higher.

This year marked the 10th anniversary of the Great Blue Heron colony in Stanley Park. Although herons have been nesting in Stanley Park since the 1920s, the current location was first colonized in 2001. Numbers were first recorded by local residents (who later became SPES volunteer heron monitors) and then more intensive studies were begun by SPES in 2007. Standard monitoring protocols are followed so that we can share our monitoring data with the BC Ministry of Environment which monitors some colonies in the Lower Mainland and on southern Vancouver Island.

Figure 132 shows the total number of nests and number of fledglings produced at the heron colony since 2001. It seems that the numbers for the Stanley Park colony are in decline, with 2005-2007 representing the most productive years. Ongoing monitoring is necessary to track changes in the population of this sensitive species so we can better address their conservation needs.

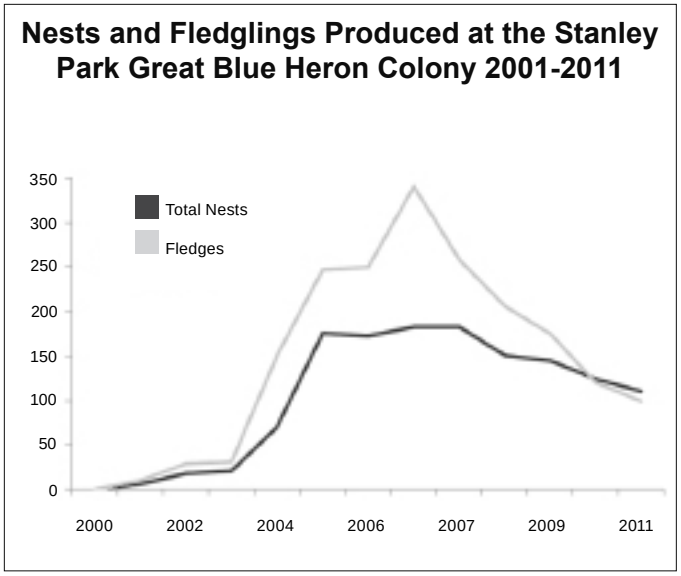



**Figure 132.** Nests and fledglings produced at the Stanley Park Great Blue Heron colony 2001-2011.

**Ring-billed Gull**

**Figure 133.** Since first discovered breeding in British Columbia in the Okanagan Valley in 1968, Ring-billed Gull colonies have now become established at five new locations across the southern interior of the province. *Photo by R. Wayne Campbell, Fraser Lake, BC, 19 June 1998.*

### *Salmon Arm Bay (including Christmas Island)*

**Ted Hillary** again sent us details of the **Ring-billed Gull** (Figure 133) survey of Christmas Island carried out by **Tom Brighouse** and two others. Rising water levels affected availability of nesting areas in 2011 and all nests were built on the two large vegetated mounds from 0.25 to 2 metres above water. A general tally on 18 May revealed about 600 breeding pairs. Each nest contained from one to four eggs. On 14 June, between 150 and 200 nests had survived high water. By 7 August, there were an estimated 125 adult Ring-billed Gulls with 100 young on the island.

About 50 pairs of Ring-billed Gulls attempted to nest again on the rock breakwater at the government wharf but the colony was washed out by rising water.

**Figure 134.** Nesting populations of Black Terns have increased in British Columbia over the past several decades due to protection and enhancement of wetlands by conservation organizations. *Photo by R. Wayne Campbell, near One Island Lake, BC, 4 June 2007.*

All **Black Tern** (Figure 134) colonies with nesting platforms were visited in 2011 except those in the Peace River region. An additional 14 sites across the southern interior of the province were also checked for evidence of breeding. While the nest platform enhancement program has only been in operation for about a decade, the summer of 2011 proved the value of long-term monitoring projects.

Unusually high water levels throughout the 2011 breeding season impacted colony occupancy and nesting success. Although terns were present at four colonies from May to July, no nesting was attempted. At one site in the Cariboo, a flock of 82 birds, probably the entire breeding population, rose from the water as individuals in late July, gathered into a tighter flock about 200 m above the colony, then flew off together in a westerly direction as if migrating. This site was checked twice, in June and July, without finding any nests.

Despite high water, Black Terns nested successfully at two sites where water levels in wetlands were maintained by ranchers throughout the summer. One colony, over 50 pairs, had raised their young during July and had departed by early August.

Not surprisingly, due to fluctuating water levels, Black Terns used more platforms for nesting than previously recorded. Nearly 82% had nests or chicks on them. Many of the empty nest platforms, and those where chicks had left for the safety of water, were used for loafing, resting, and basking by ducks, American Coots, Muskrats, blackbirds, and Common Gartersnakes (see *Wildlife Afield* 7(2): 294-297, 2010).

While canoeing on Pantage Lake on July 16, **Nancy Krueger** and **Rod Sargent** counted 35 fledged Black Terns that they assumed had been reared on the lake (Figure 135).

**Figure 135.** Young Black Tern standing on pond lilies in Pantage Lake, BC. *Photo by Nancy Krueger, 16 July 2011.*

**Figure 136.** Marsh Wren is another example of a wetland species that has expanded its breeding range in the province over the past four decades. *Photo by R. Wayne Campbell, Elizabeth Lake, BC, 13 May 2005.*

As wetland surveys continued in 2011, additional breeding information was gathered for this little known species. Preliminary results by **Wayne Campbell** indicate that **Marsh Wren** (Figure 136) has vastly different breeding times in different regions of the province, within marshes regionally, and the type of vegetation in the marsh. Seven marshes contained 27 nests without an adult being seen and without nest contents. In another five marshes, adults and nests were found but the sites were not used for breeding in 2011. In addition, many nests were found that were started but never completed (Figure 137). High water levels may have been a contributing factor as some bulrush and cattail stems did not have enough growth for nest attachment.

Many smaller marshes, including roadside ditches were checked. Although wrens were present and singing, no nests were found.

**Figure 137.** One hundred and eighty-three Marsh Wren nests were recorded in 2011 that were started but never completed, likely due to high and fluctuating waters levels during their critical breeding period. *Photo by R. Wayne Campbell.*

Generally, at 42 wetlands surveyed across the southern interior of the province, Marsh Wrens did not have a productive year. The laying and nestling periods were staggered over at least 11 weeks, with some nests still containing eggs on 6 August, the latest date for the province.

The number of un-used ("dummy") nests constructed by male Marsh Wrens per active nest (used) this year was inordinately high. Only 103 nests (18%) of 571 checked contained eggs or nestlings.

**Figure 138.** Although Red-winged Blackbird often nests near water, it is not restricted to cattail and bulrush marshes in British Columbia as is Yellow-headed Blackbird. *Photo by R. Wayne Campbell.*

Over 1,500 nests of **Red-winged** (Figure 138) and **Yellow-headed blackbird** were found with eggs and/or nestlings during wetland surveys by **Wayne Campbell** across the southern interior of the province. At some traditional sites, Yellow-headed Blackbirds moved from building nests in bulrushes (*Scirpus* spp.) to the stems of taller cattails which provided stronger attachment with rising water levels. Unlike other years, a few colonies had male and female Yellow-headed Blackbirds present in May and early June, but no nesting occurred and territories were abandoned in the latter half of June. At others, many of the nests found were flooded and in some cases re-nesting was attempted. A few late nests, with eggs, were still found in early August.

Again, the presence of Yellow-headed Blackbirds in a wetland may not confirm breeding and certainly not numbers that are actually nesting. At one site south of Kamloops, 37 male and females were counted on bulrushes and when surveyed 92 nests were found! Even though this species is polygamous, numbers still do not reflect actual nesting populations.

Red-winged Blackbird nesting success was much higher than for Yellow-headed Blackbird partly due to the adaptable nature of the species (Figure 139). Nests were often located in similar wetlands but were usually built higher above the water in the more rigid stems of cattails. With high water, bulrush stems move about too much and break the nest apart.

**Figure 139.** Red-winged Blackbird is an adaptable species nesting wherever small patches of emergent vegetation are available, including farm dugouts, wet sedge meadows, and shrubby waterways. This small patch of cattails, in a roadside ditch, had two pairs of nesting birds. *Photo by R. Wayne Campbell, Saanich, BC, 24 May 2011.*

In wetlands where water levels are controlled, both species had near normal breeding seasons. For the fifth year in a row, Brown-headed Cowbird parasitized nests of Yellow-headed Blackbird at the same colony.

## Colonial-nesting Terrestrial Birds

### Northern Rough-winged Swallow

**Figure 140.** Not long ago, breeding Northern Rough-winged Swallow was associated with dirt banks along water courses and roadways. Today, significant numbers are nesting in urbanized areas in human-made structures. *Photo by Linda M. Van Damme.*

**Northern Rough-winged Swallow** (Figure 140) continues to expand its breeding range in the province as it takes increasing advantage of human-made structures for nesting. Many of these sites are in urbanized locations that have cement retaining walls with small crevices between the blocks for nesting (Figure 141), along roads in urban and rural areas with concrete walls, in small drain pipes on bridge abutments, and even in holes of some buildings.

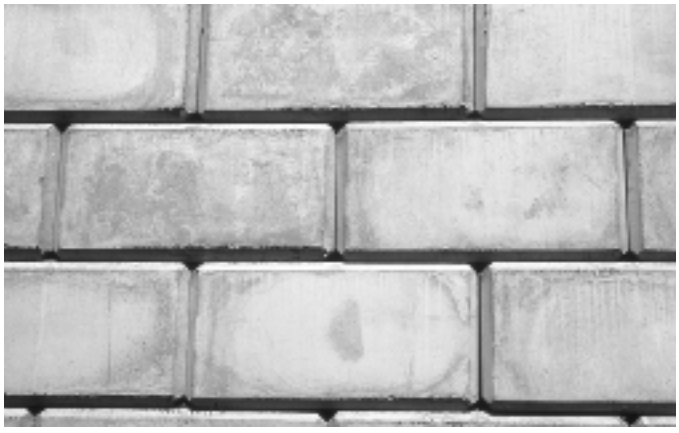


**Figure 141.** The small spaces between large cement blocks used to build retaining walls are utilized as nest sites for at least seven different species of cavity-nesting birds, including Northern Rough-winged Swallow. *Photo by R. Wayne Campbell, Merritt, BC, June 2011.*

Historically, the contents of nests were often determined from egg collectors excavating a burrow to secure the nest and clutch for private or museum collections. This information was useful but additional data was required to develop a more complete nesting chronology throughout the province. Since the species has recently moved into human-made structures, nest sites can be examined more easily by non-invasive means, partly because the distance to the nest is shorter. In 2011, 21 nests were examined with good information on clutch size, nest chamber materials, and breeding period.

### Cliff Swallow

**Figure 142.** Cliff Swallow is a colonial-nesting species that uses both natural and human-made sites each year. *Photo by R. Wayne Campbell.*

Most **Cliff Swallow** (Figure 142) colonies in British Columbia are impossible to reach to check individual nests for contents. This information is critical in assessing mitigation standards that may be required when the species is considered a nuisance due to fecal droppings and efforts are taken to destroy the colony. Colony occupancy varies greatly over the province and different nesting chronologies are needed to provide people with information on periods when nests can safely be removed. This is especially evident on bridges along highways, office buildings in urban areas, barns used for hay storage, buildings with heavy human traffic, service garages, and fishing resorts. People are becoming more aware that Cliff Swallow is protected by the federal Migratory Conventions Act and that nests cannot be destroyed without a permit.

In 2011, 261 individual nests were checked using a lighted, narrow, non-invasive scope that could be inserted into the nest entrance (Figure 143). The results showed that in some areas, the wet, cold season had impacted the emergence of flying insects, as many nests (23%) contained dead young. At some colonies in the Cariboo, nests were found in early August still with eggs, suggesting re-nesting was being attempted.

**Figure 143.** An increasing number of Cliff Swallows are using sites such as large road culverts that are within easy reach to check the contents of nests. *Photo by R. Wayne Campbell, near Stump Lake, BC, June 2011.*

In the Creston valley, 48 active Cliff Swallow nests were monitored at two traditional sites by observing chicks at the nest entrance during food delivery. One site could not be accessed until the first week of July due to high water and many young did not fledge from this location until the third week of August. One long term site was abandoned and another has been in slow decline over the years.

**Barn Swallow**

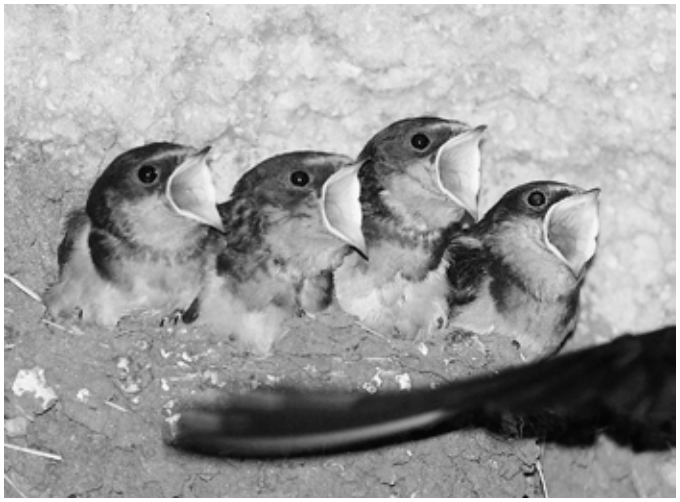


**Figure 144.** The cold and early wet start to the nesting season followed by high water levels affected the availability of flying insects and numbers of nesting swallows locally in 2011. *Photo by Mark Nyhof, 3 July 2011.*

**Barn Swallow** (Figure 144) is one of the 11 species of aerial-foraging insectivores that seem to have the current attention of biologists and wildlife managers as a species of concern in the province. Much of the information is based on trend information from results of the North American Breeding Bird Surveys which are not conclusive by themselves to accurately reflect all of the reasons for suspected declines. Long-term nest site tenacity, expansions in breeding range, species' breeding biology, and use of new breeding sites archived in the BCNRS have to be considered.

Some colony sites were again monitored in 2011 as were individual nests found during birding trips. These are highlighted below.

### *Creston Valley*

Twenty-five Barn Swallow nests were monitored by **Linda Van Damme**. High water levels during the month of June made it impossible to check on a couple of traditional sites and by mid-July many young were close to fledging or a second nesting had been initiated. One new nesting location was discovered. Sixty-five young were known to have fledged this season.

***Douglas Lake***

Since 1973, Barn Swallow nest sites have been checked regularly at various locations along the Douglas Lake Road between Westwold and Nicola Lake by **Wayne Campbell**. As many sites were on private property on the Douglas Lake Ranch, permission was required to enter some sites, such as this abandoned ranch house (Figure 145). This location was on the main road and could be easily checked. In the 1970s, when the house was occupied by employees of Douglas Lake Ranch, three to four pairs of Barn Swallows nested annually under the eaves. When the house was vacated, the birds moved inside and numbers increased to a high of 12 pairs in the 1990s. Today, four to eight pairs still nest each year

**Figure 145.** Over 39 years, the number of Barn Swallows nesting on this ranch house ranged between four and nine nests depending on human occupancy. *Photo by R. Wayne Campbell, Douglas Lake, BC, 26 July 2005.*

***Okanagan Valley***

Since 2004, **Laurie Rockwell** has been monitoring the small population of Barn Swallows which nest at **Sun-Oka Beach Provincial Park**, located 6 km south of Summerland in the south Okanagan valley. This 11 hectare park, with a mile long sandy beach, is very popular during the summer months. To accommodate public recreation, a building complete with washroom facilities and change rooms was built on site. The design of this building with exposed wooden beams attracted Barn Swallows which commonly nest on human-made structures (Figure 146). Remarkably, the park facility operator and general public have not interfered with swallows while they go about their family life of nest-building and rearing their young, with the exception of one season when a contract painter destroyed active nests.

Laurie started the 2011 monitoring season with trepidation as major renovations were being carried out on the main building commencing in March. The first Barn Swallows arrived in May and their former nest sites could not be accessed due to plastic sheeting draped over the exterior of the building. Laurie was also concerned that all the old wooden beams might be covered in by soffits. About 4 to 5 swallow pairs hung around the site until the renovations were completed and fortunately the beams were not enclosed. By June 28$^{th,}$ three of four nests were re-built and the fourth was completed by mid-July. By August 10$^{th}$, the first three nests had fledged eight young and the fourth nest fledged three young by a latish date of August 23$^{rd}$.

Laurie has a keen interest in continuing to monitor this small colony of nesting Barn Swallows.


**Figure 146**. The design of this building, with accessible wooden beams protected by the roof, provides ideal nesting sites for Barn Swallows. *Photo by Laurie Rockwell, Sun-Oka Beach Park, Summerland, BC, 1 January 2003.*

## Monitoring Nesting Birds of Prey

All 16 species of diurnal birds of prey (excluding owls) breeding in the province are well represented in BCNRS files. Some species, like **Osprey** (Figure 147), **Bald Eagle**, and **Red-tailed Hawk** are widespread, have large visible nests, and can be examined from a distance with a spotting scope. Often nests can be located when leaves are off trees during the non-breeding season and checked the following year for occupancy. Also, many of the sites are traditional and are used in consecutive years.

The following results were reported by various participants in 2011.

### Osprey

**Figure 147.** For 57 years, the BCNRS has encouraged participants to regularly record nest use and nesting success for Ospreys in natural and human-made sites around the province. Since Osprey is high on the food chain, and primarily a fish eater, long term data can indicate the health of waterways and wetlands. *Photo by Mark Nyhof, Osoyoos Lake, BC, 11 July 2011.*

***West Kootenay (Nakusp to Fauquier)***

**Gary Davidson** sends this report from the **Arrow Lakes** region: *In mid-June, I observed 23 nests with some adult activity. Twenty nests had an adult sitting low in the nest as if incubating. An additional 3 nests had adults present but none appeared to be incubating at the time. In the end, none of these three nests went on to produce young. On July 29, I checked every nest and found a total of 27 young in 16 nests. Wondering about the 4 "missing" nests I surveyed again a week later. All of these nests are atop BC Hydro transmission towers* (Figure 148)*, viewing can be difficult, and birds that are lying down are easily missed. This second survey did indicate one additional successful nest. It also increased the number of young in 2 other nests. In summary, it appears that 17 nests produced 30 young. I usually do not do two surveys so close together, so for the purposes of consistency I will compare the first count with my historical data. On 29 July, 2011 I observed 27 young in 16 nests for an average of 1.69 young per nest. Historically, there has been an average 25.7 young in 14.9 nests for an average of 1.72 young per nest. In summary, it appears that both the number of successful nests, and the total number of young produced were both slightly higher than average. The average young per nest (productivity) was slightly lower than usual. I have been noticing for some years that when the number of nests and the number of young are high, productivity goes down.*

*After some thought, and discussion with wildlife biologists, I have a potential explanation. It is well established that adults with more experience are more successful. Even in an optimum year, the inexperienced birds still often produce only one young, whereas the more experienced produce two or three. In years when conditions are not as good, many of the inexperienced birds will lose their one young, while the experienced birds will continue to have some success. The result is to eliminate most of the one-young nests and thereby raise the average.*

**Figure 148**. Ospreys nesting within 150 m of each other were successful in producing five offspring. *Photo by Gary S. Davidson, Caribou Creek near Burton, BC, 5 August 2011.*

***West Kootenay (Balfour to Waneta)***

Participants in the 2011 Osprey survey between **Balfour** and **Waneta** were **Rita Wege, Elaine Moore, Emilee Fanjoy**, **Shirley Coffin, Gwen Nicol** and **Janice Arndt**. Janice writes: *Total number of successful nests was the lowest in the 15 years of the study, with just nine nests producing 17 young. These numbers are about half of 2010 values. The West Arm of Kootenay Lake between Balfour and Nelson seemed to be the problem area: there were only two productive nests along this stretch of water where there have consistently been 12 productive nests over the last several years. Several occupied nests were destroyed in a windstorm in mid-May. Higher water levels than normal in May and June also may have contributed to nest failure by affecting foraging efficiency. The Trail-Waneta area hosted a cluster of successful nests, including one that fledged triplets. Thirty-three Osprey nests were used by Canada Geese in the study area early in the season, and one of these nests later hosted an Osprey pair that fledged young.*

***Creston Valley (South Kootenay Lake to United States border)***

The more accessible Osprey nests were monitored this season by **Linda Van Damme,** while **Cyril Colonel** along with his son-in-law **Dale Grady** and grandson **Kyle Lavalee** conducted three nest checks along the Kootenay River north to Kootenay Landing.

Linda writes: *Thirty seven nests were checked and it was encouraging to observe 30 active ones. However as the season progressed only 23 nests remained active to produce 36 young but all did not survive to fledge. A couple of nests which fell down during the winter months were not rebuilt, some nests were abandoned early in the season and four nests where young were observed suffered apparent mortality. One new nest was discovered but it was only partially built during the time when a Canada Goose occupied the primary nest. Eleven nests (not including ones that require river access in March/April) were occupied by Canada Geese and although Osprey took an interest after the geese vacated, none of these nests remained occupied.*

*FortisBC installed a de-energized pole complete with a nesting platform at a new location in West Creston. This site will be followed up in 2012 to see if a second pair establishes a territory or if it will be occupied by the pair which nest on an energized pole ½ km away.*

*Once again, the Fish and Wildlife Compensation Program partnered with the Creston Valley Wildlife Management Area to offer public viewing via a webcam of a pair of nesting Osprey. In 2010, this nest successfully raised two young. This season held promise when three eggs were incubated and hatched. The first two chicks had a 2-3 day head start on the youngest one which was quite apparent in the size disparity. At five days of age the runt expired as its older siblings were able to out compete for food. In early July, the remaining two chicks were more active in the nest and many times were observed close to the edge. The adults continued to add materials to build up the rim. Unfortunately on July 6th one of the two young disappeared. The lone chick continued to slowly develop and by July 13th was looking less reptilian with feather tracts emerging on the tail and wings. Tragedy struck on July 16th when the chick, left unattended by the adult was attacked and killed by a member of the corvid family (likely a raven). Faithful observers of the webcam noted the male was less active in delivering fish resulting in the female doing the fishing and leaving the chick unattended.*

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

**Sheila Reynolds**, in her sixth season, writes: *Nine nests were checked with 7 nests being active. Adult birds were seen on and around the nests but only 3 young were visible. Many nests are very deep and this makes it hard to see the young. The number of young did seem to be low, possibly weather related.*

***North Kootenay Lake (Woodbury area)***

**Lorraine Symmes** writes: *The osprey nests here at Woodbury/Florence and Twin Bays both appear to have failed. The one at Florence (just south of the Woodbury Marina) was doing fine--eggs laid around May 14th and hatched about a month later, but on July 2nd the nest was attacked (as reported by my neighbour) perhaps by another osprey, or more likely a Bald Eagle. My neighbours witnessed one osprey at the*

*nest with two attacking from the air. There were two chicks in the nest at the time. In the malay, both chicks were lost (one fell overboard and not sure what happened to the other). For the next few weeks a forlorn pair or a singleton would sit on the most northerly dolphin staring at the nest but not tending to any chicks. Empty nest syndrome indeed!*

*The other pair, closer to Twin Bays, had disappeared by the end of June, so I suspect they had a run-in with the Bald Eagle pair nearby. Hopefully things will go better next summer.*

***Kelowna (Okanagan Valley)***

Often companies supplying various forms of energy to people are faced with the challenge of having Ospreys and other birds of prey nest on infrastructures. Not only can this be costly for management when there are power outages or fires, but birds can be electrocuted. Often mitigation in the form of providing an alternate nest can be installed.

In early spring 2011, FortisBC, a large energy company, activated a web cam at an Osprey nest site on Benvoulin Road in Kelowna as part of their nest management program which also relocated threatened nests. People enjoyed the live video from April when the birds returned until August when the fledglings were airborne.

For more information visit www.fortisbc.com. Also see page 86 in this report for details of a Telus stewardship project.

***Thompson - Nicola Region***

Raptor nests, mostly Osprey and Bald Eagle, were recorded by **Wayne Campbell** during nest-finding excursions in the vicinity of Merritt, Quilchena, Nicola Lake, Douglas Lake, Stump Lake, Kamloops, South Thompson River, and Shuswap Lake.

Forty-four nests were checked, including four new sites. Three Osprey nests that have been active since 1973 near Nicola Lake were vacant and two others had adults present but were not used in 2011. Ranchers suggested that unusually high water levels made many of the waterways unavailable for fishing due to the murkiness of the water.

**Bald Eagle**

**Figure 149.** Bald Eagle adults and their nests are large and visible and can be easily monitored from a distance. *Photo by R. Wayne Campbell, Victoria, BC, 19 April 1990.*

***West Kootenay (Balfour to Castlegar)***

**Janice Arndt** continues to monitor the breeding activity of Bald Eagles (Figure 149) in a segment of the West Kootenay region and has summarized the season: *I monitored 15 territories in 2011 from Balfour/Procter to Castlegar. All 15 were occupied with at least one adult ob-served at or near the nest. Only four pairs were confirmed successful. Two young were raised in each of three nests and one young was raised in the fourth nest. Pairs at nine other nests failed to breed successfully despite observations of copulation and/or incubation early in the season. Reproductive outcome was not determined with certainty at two nests which are not easily monitored, but lack of activity during several visits suggests that these failed also.*

*There are ten known eagle territories between Balfour and Nelson but only one of the successful nests was from this section. This is the same stretch of water that had very poor breeding success for Ospreys in 2011* (see page 69). *The chick in this nest fledged nearly a month behind the others.*

*The nest near our home discovered by Bethany Arndt in the previous year allowed some insight into timing of key events in 2011, despite eventually failing. The pair brought sticks to the nest between March 19 and April 5 and were observed copulating March 24. Incubation behaviour began April 7. It's impossible to look into the nest because it is upslope from our house but based on the behaviour of adults, hatching*

*occurred between May 11 and 15. Chicks were believed to be present in the nest until May 21, but by May 23 it was clear that something had happened to them. The adults were occasionally seen at the nest during the summer.*

### *Creston Valley*

The 11 active nests monitored this season (Figure 150) are built in the riparian black cottonwoods along the Kootenay River system adjacent to wetlands. **Linda Van Damme** tracked the more accessible nests from different vantage points on land. Early in the season **Cyril Colonel** solicited his pilot friend Bill Piper to check the more inaccessible nests at the north end of the valley for occupancy. Cyril did a river trip to follow-up near fledging time.

Three of the 11 nests were abandoned. Two new alternate nests were built in known territories but viewing was restricted at one nest once the tree leafed out so the outcome was unknown. Eleven young were observed in seven nests with nine surviving to fledgling stage.

**Figure 150.** Although this Bald Eagle nest was built in 2008, it was not used until 2011. Two young were produced but only one fledged. *Photo by Linda M. Van Damme, Six Mile Slough, Creston, BC, 18 March 2011.*

### *Thompson - Nicola Region*

Of 11 Bald Eagle nests visited by **Wayne Campbell**, all but one was not in use. This nest (Figure 151), opposite Separation Lake south of Kamloops, seemed to become inactive with the deterioration of the marsh below it. In the past, prey remains at this site included American Coot, gosling Canada Geese, a female Barrow's Goldeneye, and fishes.

**Figure 151.** This Bald Eagle nest, not a long traditional site, was not active in 2011. Water levels in the cattail marsh below the nest had dropped significantly and few waterbirds were nesting. *Photo by R. Wayne Campbell, Separation Lake, BC, 24 April 2006.*

### *Bald Eagle Webcams*

Webcams placed at Bald Eagle nests in southern British Columbia were popular again this season. Due to video technology, images of the bird's family life are transmitted over the Internet to a world-wide audience.

The addresses for two such webcams are: **Hornby Island** by Doug and Sheila Carrick, Wildearth TV at www.hornbyeagles.com. The Hornby Island nest was successful in fledging two young.

The **Sidney** webcam, sponsored by Hancock Wildlife Foundation, can be viewed at www.hancockwildlife.org. Four webcams in the Lower Mainland and one at Sidney on southern Vancouver Island allowed viewers the opportunity to watch triplets in two nests. At one nest with twins, one of the chicks fell out, was rescued and taken to OWL (Orphaned Wildlife Rehabilitation Society) in Delta where it was successfully reared. On July 22nd the juvenile was released back into the wild.

**Red-tailed Hawk**

**Figure 152.** Red-tailed Hawk is the second most prominent diurnal raptor in the Creston valley and is strongly associated with open farmlands. *Photo by Linda M. Van Damme.*

***Creston Valley***

**Linda Van Damme** checked 57 **Red-tailed Hawk** (Figure 152) nests; of these five were new for the season. The majority of nests were situated in black cottonwoods while ponderosa pine and Douglas-fir were less commonly used. The season started with 25 active nests but only 14 remained active with 23 young observed. A pair of Bald Eagles which refurbished an old hawk nest in 2009 continued to use that nest in 2010 and 2011. Canada Geese and Great Horned Owls occupied 12 of the hawk nests while 19 remained un-occupied.

## Monitoring Nest Box Routes

The value of nest boxes has long been recognized as a useful tool for research, management, and conservation of cavity-nesting species where natural holes are scarce. For 57 years, volunteers have been checking nest boxes and sending cards to the BCNRS. A major use of the accumulated information was published in the four-volume set *The Birds of British Columbia* (1990-2001). The authors were able to summarize species occupancy, nesting materials, clutch initiation and size, incubation period, hatch date, fledging dates, nest success, and predation. Very few other regional bird books had such a strong database to work with.

While nest boxes are used to enhance habitat for many species of birds, including nonpasserines, the following discussion includes those species using nest boxes throughout the province on established routes. These are the true "nest box trails." All of the species are cavity-nesting passerines.

In 2011, nest boxes on routes were used by **Black-capped Chickadee**, **House Wren**, **Mountain Bluebird**, **Mountain Chickadee**, **Tree Swallow**, **Violet-green Swallow**, and **Western Bluebird**.

Nest boxes were checked by **Carla Ahern**, **Darrell Ashworth**, **Vicky** and **Lloyd Atkins**, **Beverly Butcher**, **Wayne** and **Eileen Campbell**, **Eleanor Christensen**, **Alex** and **Luanne Coffey**, **Kathie Davis**, **Ralph** and **Elsie Gerein**, **Sally Hofmeier**, **Pat Huet**, **Orie** and **Gloria Kolenchuk**, **Vi** and **John Lambie**, **Sharon Laughlin**, **Adrian Leather**, **Barbara Lucas**, **North Okanagan Naturalists Club**, **Mark Nyhof**, **Dirk Pidcock**, **Jeff Piwek**, **Sandy Proulx**, **Anna Roberts**, **Marv** and **Lorna Schley**, **Lorraine Scott**, **Verena Shaw**, **Gail Spitler**, **Doris Whittman**, **Gerda Whittman**, **Williams Lake Field Naturalists**, and **Samuel Woodman**.

In total, contents in 1,062 nest boxes were reported from five regional districts across the southern interior of the province in 2011 (Table 2). The Cariboo region accounted for nearly half (45%) of the total. The Thompson-Nicola and Central Kootenay regions, however, were also well represented. The 11 occupied **House Wren** boxes checked in the Thompson-Nicola region were all from locations adjacent to, or close to, mixed coniferous forests. **Mountain Chickadees** prefer boxes in the Cariboo while most **Western Bluebird** nests were recorded in the Central Kootenay region (Table 2). Together, **Tree Swallow** and **Mountain Bluebird** accounted for **97%** of all nest boxes reported and are discussed separately.

**Table 2.** Number of nest boxes used by seven species of cavity-nesting birds in monitored "nest trails" in four regional districts of British Columbia in 2011.

| | Species[2] | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Regional District[1]** | **BCCH** | **HOWR** | **MOBL** | **MOCH** | **TRSW** | **VGSW** | **WEBL** | **Total** |
| **Central Kootenay** (Castlegar-Duncan-Creston) | 1 | – | 20 | – | 154 | – | 7 | 182 |
| **Fraser-Fort George** (Mackenzie-Fort George) | – | – | 20 | – | 61 | – | – | 81 |
| **North Okanagan** (Vernon-Lumby) | 1 | 3 | 5 | – | 123 | – | 2 | 134 |
| **Thompson-Nicola** (Merritt-Kamloops) | – | 11 | 108 | – | 57 | 7 | – | 183 |
| **Caribou** (Quesnel-Williams Lake) | – | – | 195 | 4 | 283 | – | – | 482 |
| **Total** | 2 | 14 | 348 | 4 | 678 | 7 | 9 | 1,062 |

[1] British Columbia is divided into 29 regional districts, mainly to provide municipal services such as land use planning, building inspection, and fire protection.

[2] Four-letter species codes: BCCH – Black-capped Chickadee; HOWR – House Wren; MOBL – Mountain Bluebird; MOCH – Mountain Chickadee; TRSW – Tree Swallow; VGSW – Violet-green Swallow; and WEBL – Western Bluebird.

### Tree Swallow

**Figure 153.** Next to Barn Swallow, Tree Swallow is the most widely distributed member of its family in British Columbia. *Photo by R. Wayne Campbell.*

**Tree Swallow** (Figure 153) was the most numerous cavity-nesting species and accounted for 64% of the 1,062 boxes reported. Only in the Thompson-Nicola region was the species less abundant than its competitor Mountain Bluebird (Table 2).

In the past, breeding information was difficult to obtain from natural cavities and many of these sites were over water. The large and growing BCNRS files are contributing greatly to the species' breeding biology and population status.

**Mountain Bluebird**

**Figure 154.** As stands of mature trembling aspen in the interior of the province are being transformed by a variety of human activities, many Mountain Bluebirds have moved from the loss of natural nest cavities to adopting artificial boxes. *Photo by R. Wayne Campbell.*

Some of the earliest nest box routes in the province were established in the grasslands of the Cariboo region. Biologists and naturalists were concerned about the impact of grasshoppers on vegetation, especially in disappearing native grasslands, and they knew that the insect pest was eaten by **Mountain Bluebirds** (Figure 154). Decades later, the highest percentage of nest boxes occupied regionally for 2011 are from this shrinking habitat in the Thompson-Nicola (59%; n=183) and Cariboo regions (40%; n=195).

The entire nesting period, from starting a nest to young leaving the nest, may last up to 47 days depending on the number of eggs laid and weather. Data for Table 3, that summarizes chronology of a single nesting for a pair of Mountain Bluebirds raising four young, was extracted from nest cards in BCNRS files. The table will be a useful reference for timing visits to minimize disturbance and perhaps cause premature fledging.

**Table 3.** Nesting guide, from nest-building to fledging, for a pair of Mountain Bluebirds raising four young in British Columbia.

| Nesting Activity | Time Period | Comments |
|---|---|---|
| **Nest-building** | Days 1 – 4 | By female; averages 4 days in BC (range 3 – 7 days) |
| **Egg-laying** | | By female; one egg per day |
| 1 egg | Day 5 | |
| 2 eggs | Day 6 | |
| 3 eggs | Day 7 | |
| 4 eggs | Day 8 | |
| **Incubation** | Days 9 – 21 | By female; averages 13 days in BC (range 11–17 days) |
| **Nestlings** | | By female and male; averages 18 days in BC (range 17 - 21 days) |
| | Day 22 | Hatching; eyes closed; sparse black down on body |
| | Day 23 | Eyes closed; weight doubles |
| | Day 24 | Eyes closed |
| | Day 25 | Eyes closed; feathers develop under skin |
| | Day 26 | Eyes closed; feathers show breaking through skin |
| | Day 27 | Eyes closed |
| | Day 28 | Eyes open as slits; feathers start to emerge from sheaths |
| | Day 29 | Eyes wide open; feathers continue to unsheathe |
| | Day 30 – 32 | Feathers continue to grow |
| | Day 33 – 34 | Nestlings are active |
| | Day 35 – 39 | Nestlings may be fed from outside of box |
| | Day 40 | Nestlings leave nest box |
| **Fledglings** | Days 41 – ? | Fledged young dependant on parents for weeks |

## Nest Box Notes

Many contributors checked individual nest boxes installed on private property, and adjacent to wetlands and forested habitats, where a good variety of additional cavity-dependent species benefited from human help in 2011. These 23 species of birds and mammals included: **Wood Duck**, **Bufflehead**, **Common Goldeneye**, **Barrow's Goldeneye**, **Hooded Merganser**, **American Kestrel**, **Northern Flicker**, **Barn Owl**, **Flammulated Owl**, **Western Screech-Owl**, **Northern Saw-whet Owl**, **Purple Martin**, **Violet-green Swallow**, **Chestnut-backed Chickadee**, **Red-breasted Nuthatch**, **Bewick's Wren**, **House Wren**, **European Starling**, **House Sparrow**, **Deer Mouse**, **Red Squirrel**, **Eastern Gray Squirrel**, and **Northern Flying Squirrel**.

A few people passed along their experiences while checking nest boxes to share with BCNRS participants. Here are a few:

### *Canyon (Creston valley)*

**Linda Van Damme**, while driving the rural roads of Canyon, spotted a Black-capped Chickadee with a bold white left wing and a predominantly white-feathered tail (Figure 155). The chickadee was carrying food which it delivered to a nest box on an old fence post bordering a farm field. One feathered nestling was waiting at the entrance for food delivery (Figure 156). Pat Huet checked the box two days later and the adults were still feeding young. A couple of weeks later, while walking in a forest about 200 m from the nest box, Linda and Pat heard begging calls from fledged chickadees and were able to quickly identify this family based on the adult's unusual plumage.

**Figure 155**. Recording value-added information while checking nest boxes, such as odd-plumaged birds, is useful as adults returning to nest boxes in subsequent years can be easily identified. *Photo by Linda M. Van Damme, Canyon, BC, 13 June 2011.*

**Figure 156.** When checking nestlings of parents with unusual plumage, it is worth noting whether any of the brood inherited the traits. *Photo by Linda M. Van Damme, Canyon, BC, 13 June 2011.*

**Pat Huet** relays an experience from this season: *I monitor about a dozen nest boxes – swallows and chickadees – at my home in Canyon. In early July, I opened one box and found all the young Tree Swallows dead. We were expecting company, so I just grabbed the nest and contents with bare hands to dispose of it. At another front-opening box, a baby swallow was against the front and started to fall out when I opened it. I caught it (again with bare hands) and put it back in.*

*The next morning I noticed some bites on my torso, but thought nothing of it as we have lots of little biters here. The following morning I had about 30 bites, all itchy. The third morning, I had even more bites all over the upper part of my body. We had spent a night in a motel at the end of June, so I thought "oh no, bedbugs!" I saw no evidence of them however, and my husband had no bites at all. I washed all the bedding including the dog's bed. Still more bites.*

*My daughter happened to be talking to a bedbug expert about my experience, and he said it didn't sound like bedbugs. He asked her if I had anything to do with birds, and when she said yes, he said "bird nest mites." These are blood-sucking critters related to ticks and spiders. Apparently when their main host dies, they will crawl onto any bird or mammal, even humans if they are available. Although I had washed my hands after touching the nest, I think they had crawled up my arms into my T-shirt, which I had carelessly put on the bed later.*

*Mites are very tiny, about the size of large pepper grains. They are not known to transmit diseases to humans, and cannot reproduce on human blood. They eventually die. But the bites itch worse than those of mosquitoes, and for me lasted over a week. Little is known about their effect on nestlings, but it is suspected that if they occur in large numbers, the baby birds could die or at least be weakened.*

*From now on, I will use gloves when checking nest boxes, and put all my clothes in the laundry afterwards. This was a scary experience – not because of the mites, but because bedbugs are everywhere these days.*

***Corn Creek Marsh (Creston valley)***

**Carla Ahern** and **Pat Huet** again monitored Tree Swallow nest boxes at the Corn Creek Marsh in the Creston Valley Wildlife Management Area (CVWMA). This is their fourth consecutive year and Pat provided a brief overview of their findings as follows:

*In 2011, we had help from naturalists at the Interpretive Centre: Stephanie McDowell, Jenny Wallace, Andrew Dil, and Miles Minichiello. This was wonderful, as both Carla and Pat were unavailable at a critical time during the season. Dave Huet was also dragged out on a couple of occasions to help (he loved it).*

*The weather was good in the spring, and birds were busy building nests in the 66 boxes by mid-May. By the end of May, most boxes contained eggs. In mid-June, lots of eggs had hatched, and most fledging occurred the last week in June and first week of July. Food was plentiful during this time, and it amazed us how quickly the young grew* (Figure 157*).*

**Figure 157**. Unlike many other nest box routes reported in 2011, Tree Swallows seemed to be less affected by the weather at Corn Creek Marsh in the Creston valley. *Photo by Pat Huet, 12 July 2011.*

*The number of eggs, young in the boxes, and fledged young were high this year, unlike the situation in 2010, the worst year so far, with its gloomy, rainy, cold spring. In fact, even though more young hatched per box in 2009 than in 2011, the average number fledged per box this year was slightly higher. Predation was minimal except for a few boxes along one section of the loop.*

*For about 20% of the boxes, we had problems with them falling down, lids off, and inaccessibility due to high water in June (and a huge wasp nest;* see Figure 158*). The birds nested anyway in most of these boxes.*

*Even though we did get data for a lot of these, we decided box maintenance was overdue. This past autumn, we replaced several boxes with new ones, replaced a lot of the zip ties holding the boxes, and moved a few to higher ground. Before the 2012 nesting season, we will go out and re-check ties on all the boxes and straighten the metal poles holding them.*

*We are already excited about next year's monitoring program and as in 2011, intend to get out there at least once a week to make sure we don't miss anything.*

Each nest box brings its own surprises inside, but when wasps build their own nest attached to the box outside, there are issues about human and swallow safety. Pat writes: *On June 7, at the last box (#66) on the Corn Creek Marsh loop (nearest West Creston Road), we found four eggs in the nest and on June 20, four newly hatched young. On June 28, all the young were dead. Two of the CVWMA naturalists (Jenny Wallace and Stephanie McDowell) checked the box on July 6, and noticed that vespid wasps were building a nest underneath the box. Jenny attempted to open the box and was stung. After this we decided that this box was off limits to all of us, especially as Pat has had problems with wasps before. Each time we walked by, the nest was bigger. By the end of summer it was very impressive* (Figure 158). *We didn't destroy the nest because we all thought that it was pretty cool looking. If it's there next year the naturalists can give a little talk about it.*

**Figure 158.** In late summer, vespid wasps, a social family of stinging insects, built a nest on the underside of a Tree Swallow nest box. As the huge "paper" nest was being completed, nest box checking ceased! *Photo by Carla Ahern, Corn Creek Marsh, Creston, BC, September 2011.*

### *Coldstream (Okanagan Valley)*

**Lloyd Atkins** was suddenly surprised while monitoring his nest box route: *While opening one of the nest boxes, I had an adult mouse jump directly towards my face but my reaction time wasn't fast enough to get a picture of the gymnastic mouse which must have aspirations of joining Cirque Du Soleil*. Here's a photo of other rodent squatters (Figure 159).

**Figure 159.** Infrequently, Deer Mouse uses nest boxes set out for swallows and bluebirds to raise their family. These baby mice are only a few days old. *Photo by Lloyd Atkins, Coldstream, BC, 10 June 2011.*

### *Oyster River (Vancouver Island)*

Many individuals are putting up nest boxes around the province for larger cavity-nesting species such as waterfowl, falcons, and owls. On Vancouver Island, there is some concern about the future of Western Screech-Owl and the impact that habitat loss, and hence available nests sites, and invasion of Barred Owls is having on the insular population. Biologist Bryan Gates decided several years ago to help the owls and put up boxes in a mixed second-growth forest near Oyster River on Vancouver Island. His research is planned long-term and to date only Northern Saw-whets Owls are using the boxes (Figures 160, 161, 162, and 163).

**Figure 160.** Habitat of second-growth Douglas fir-western hemlock-western red cedar forest frequented by Northern Saw-whet Owl near Oyster River, BC, in 2011. *Photo by Bryan R. Gates, 7 May 2011.*

**Figure 161.** Adult female Northern Saw-whet Owl observing as nest box is checked. *Photo by Bryan R. Gates, near Oyster River, BC, 7 May 2011.*

**Figure 162.** Northern Saw-whet Owl nest containing four eggs and prey items that included a single fresh, but headless, *Peromyscus* sp. and feathers from a variety of songbirds. *Photo by Bryan R. Gates, near Oyster River, BC, 7 May 2011.*

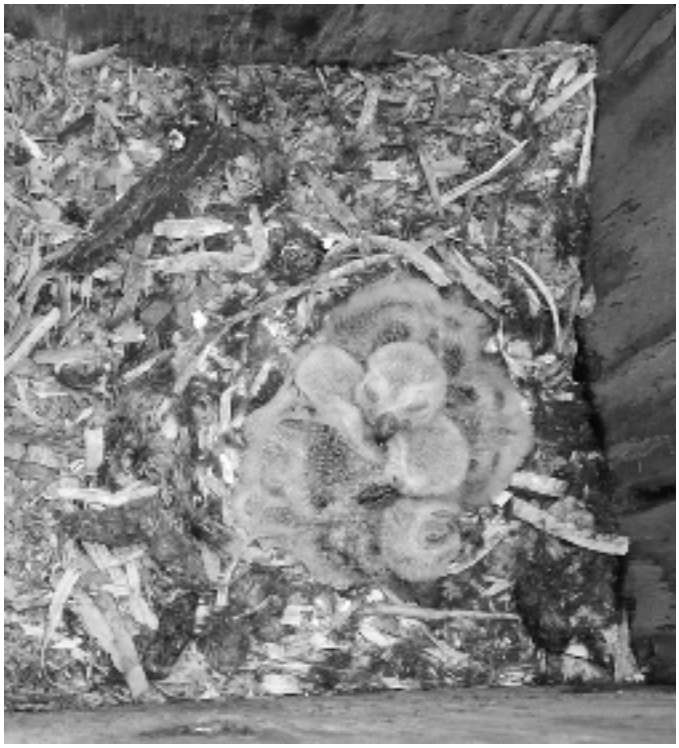


**Figure 163.** Four newly hatched Northern Saw-whet Owl chicks. One nestling is significantly smaller than its siblings. *Photo by Bryan R. Gates, near Oyster River, BC, 1 May 2010.*

## Northern Flicker Reproduction in 2011

Professor Karen Wiebe (Figure 164) has been monitoring between 81 and 167 Northern Flicker nests annually since 1998. Last spring (2011) seemed to be one of the wettest and coldest recorded on the Riske Creek study area in the last 14 years, although 1999 also stands out as being an unusually wet summer. The reproductive performance of flickers in both these years was lower than average. The average egg-laying date for 159 nests monitored last year was 20 May (the first egg in the population was laid on 4 May). This was the second latest year recorded, with 1999 having the latest average laying dates over the 14 years of the study. Although laying was delayed, the average clutch size in 2011 was not smaller than other years (average 7.87); however, the survival of nestlings after hatching was reduced. On average, of those nests which hatched successfully, only 4.89 nestlings fledged per brood in 2011 which was tied with 1999 as having the lowest fledging success.

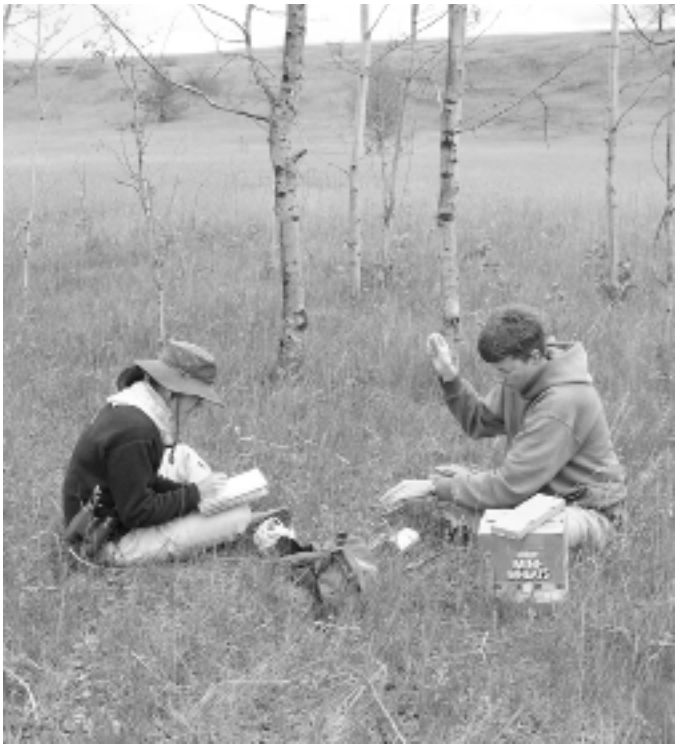


**Figure 164.** Karen Wiebe (right) and assistant Midori Mitsutani prepare to weigh and band nestling Northern Flickers on their Riske Creek study area in the Cariboo region of British Columbia. *Photo by R. Wayne Campbell, near Riske Creek, BC, 24 June 2011.*

Our observations suggest that flickers do not forage much in cold, wet conditions because the activity of ants, their main prey, is probably reduced in such weather. A lack of food may cause a delay in egg-laying for female flickers in spring. Prolonged periods of wet weather after the nestlings hatch are also associated with high nestling mortality, probably because parents have difficulty provisioning the nestlings, or because nestlings have higher thermoregulation costs in damp or flooded tree cavities.

Karen has published many academic and popular articles on her research and some will be of interest to BCNRS contributors. Here are few:

**Elchuk, C.L. and K.L. Wiebe.** 2003. Home range size of Northern Flickers (*Colaptes auratus*) in relation to habitat and parental attributes. Canadian Journal of Zoology 8: 954-961.

**Wiebe, K.L.** 2001. The microclimate of tree cavity nests: is it important for reproductive success of flickers? Auk 118: 412-421.

_____**.** 2004. New information on Northern flickers. Interpretive Birding Bulletin 5: 34-36.

_____. 2006. Egg composition in Northern Flickers. Condor 108: 977.

**Wiebe, K.L.** and **G.R. Bortolotti**. 2001. Variation in colour in a population of hybrid northern flickers: a new perspective on an old hybrid zone. Canadian Journal of Zoology 79: 1046-1052.

_____ and _____**.** 2002. Variation in carotenoid-based colour in Northern Flickers in a hybrid zone. Wilson Bulletin 114: 393-400. (Figure 165)

**Wiebe, K.L.** and **C.L. Elchuk.** 2003. Correlates of parental care in Northern Flickers do the sexes contribute equally while provisioning young? Ardea 91: 91-101.

**Wiebe, K.L**. and **T. Swift.** 2001. Clutch size relative to tree cavity size in Northern Flickers. Journal of Avian Biology 32: 167-173.

**Wiebe, K.L.** and **W.S. Moore.** 2008. Northern Flicker (*Colaptes auratus*). *In* The Birds of North America Online (A. Poole, ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/166a

**Figure 165.** The plumage of nestling Northern Flickers, including under wing colour, is recorded in detail before the young bird is returned to its nesting cavity. *Photo by R. Wayne Campbell, near Riske Creek, BC, 24 June 2011.*

# Notes from the Field

***Welcome Company in the Wilderness***

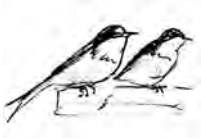
Wildlife artist and naturalist **Mark Hobson**, who built a float house in a remote corner of **Lemmens Inlet** east of Tofino, followed a pair of **Barn Swallows** which nested on his studio and raised a family in 2011. The following personal glimpses and sketches were extracted verbatim from his notebook:

**June 7** – *A pair of Barn Swallows spent the evening flying around the float house – I think they might be interested in nesting.*

**June 12** – *Pair of Barn Swallows arrived at the flats at 7:30 – stayed into the evening roosting at the # 1 house.*

**June 13** – *Barn Swallows flying around all day – roosting at night and occasionally during the day. Looks like they will nest above tool box.*

**June 16** – *Barn Swallow pair started twittering from their roost under the tool shed roof.*



**June 18** – *Barn Swallows twittering away – perched above the kitchen window@ 5:00 am. Looks like they might be cleaning out the old nest from the 1990s. Sadly, the Barn Swallows looked like they abandoned the float house. I was using the work bench at 6:30 pm (below their potential nest site), I thought the swallows were away but in the middle of working they returned – then vanished. They did not stay through the night.*

**June 19** – *Change of fortune! @ 12:30 both swallows returned. They stayed for ½ hour then vanished for the whole afternoon coming by 7:30 and into the evening.*

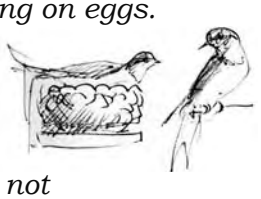
**June 20** – *The Barn Swallows spent the night above the work bench. They started rebuilding the old nest that was used in the early 1990s next to the kitchen window. They were picking up pine needles from the sea surface.*

**June 21** – *Barn Swallows did not spend the night at the nest – not sure where they roosted. At 7:30-8:00 am they were picking fine twigs from the basket and taking them to the nest.*

**July 9** – *When I arrived there were 4 eggs in the nest and the swallows were not around. Later in the afternoon the pair returned and it looks like they are starting to sit on the new eggs. I am not sure if they have added another egg before they started sitting. Sadly, any work by me at the kitchen sink or at the work bench is a disturbance to them.*

**July 10** – *Barn Swallows were disturbed on nest by me when I awoke but they return fairly quickly and appear to be sitting on eggs.*

**July 12** – *Barn Swallows very vocal at first light.*



**July 13** – *Barn Swallows not flying very much in the cooler weather.*

**July 15** – *Swallows on their nest at first light.*

**July 18** – *I checked the swallow nest @ 7:30 pm; 4 chicks in the nest. They look like they hatched at least a week ago.*

**July 19** – *Barn Swallows regularly visiting their nest.*

**July 22** – *Barn Swallows feeding their young.*

**July 24** – *Barn Swallow parents working hard to look after their young taking the droppings out of the nest.*

**July 25** – *4 youngsters in Barn Swallow nest – doing well.*

**July 26 to August 3** – *All 4 Barn Swallows have fledged and are flying around the float house. Lots of chatter with 6 swallows. At night and during the day the youngsters were roosting near the nest under the roof over the work bench.*

**September 5** – *No swallows. Lots of droppings below nest area of swallow nest – looks like the youngsters spent some time after fledging at the float house.*

**September 25** – *One egg found in the nest.*

### *A Rail in the Hand*

**Janne Perrin** sends this story of a timely encounter with a large Virginia Rail chick (Figure 166). On August 29: *This little fellow, that I believe to be a* ***Virginia Rail*** *chick, was being herded by cats on a property on Whorly Road,* ***Agassiz*** *this morning. We released it into the long grass beside a small pond. It immediately disappeared into the vegetation. I have no idea of the outcome for the chick.*

**Figure 166.** Virginia Rail chick ready for release after being rescued from cats. *Photo by Janne Perrin, Agassiz, BC, 29 August 2011.*

### *Wading for Waxwing*

While scanning a flooded swamp for Red-winged Blackbird nests, **Wayne Campbell** noticed splashing at the bottom of a spindly willow that had a very exposed nest higher up. He identified a bird in trouble and jumped into the water, waist deep, and picked up a well-feathered **Cedar Waxwing** nestling. The chick was dried off with tissue and returned to its nest that held two similar-sized nestlings. Three days later, the nest was checked with a pole-mirror and all three siblings were doing fine.

### *Gotta Get the information for the BCNRS*

**Ron Jakimchuk**, who lives in **North Saanich**, describes his "harrowing" experience in a quest to get details of an **American Robin** nest (Figure 167) for the BCNRS. On 29 April he wrote: *Weaving unsteadily at the top of the ladder, scotch whiskey in one hand and camera in the other, our intrepid biologist reaches around the trunk of the tree to blindly snap evidence of the new season's fecundity. Finally able to synchronize his unsteady legs with the rhythm of the swaying ladder he gets his shot! With an impressive display of skill and agility, he manages to avoid an imminent fall into a tangle of blackberry vines and dead branches at the base of the tree, dismounting the ladder amidst curses of exasperation at the tangle of blackberry vines, gripping his legs and ladder. The only comment from his bemused lady is: "You do suffer for your art, don't you".*

**Figure 167:** A pin-feathered nestling American Robin begging for food in its nest among the ivy leaves. *Photo by Ron Jakimchuk, Victoria, BC, 22 April 2011.*

### *Obstacle to Access*

It is not uncommon to find boxes on bluebird routes riddled with pellets from shotguns and slugs from rifles. While there is not much that can be done, the box is still useable. In some instances, however, natural nesting sites in snags, dead trees, and stumps are covered by a paper target and used for practice. In May 2011, **Wayne Campbell** noticed such a situation with a male **Mountain Bluebird** perched atop a stump. The target was removed and later in July he found droppings at the nest entrance suggesting bluebirds had used the site.

### *Thanks for the Accommodation*

**Rita Wege** writes on 27 July: *While out checking for Osprey nests in late July, I stopped at* ***Waldie Island*** [Castlegar] *to check the nest used every year on the railway bridge. An adult Osprey was present but no young were visible, so I thought I would wander over to the new trail kiosk that Castlegar Friends of Parks and Trails had erected* (Figure 168). *You can imagine my surprise to see a nest built under the roof but on top of the sign. A very obvious and conspicuous place for a nest! I got a bit closer to check it out and suddenly realized there was a bird on the nest. She was so camouflaged that I didn't see her at first. She flew off so I quickly took a photo of the nest to see if there were any eggs. Sure enough, there were 5 eggs* (Figure 169). *I decided the bird was a* ***Pacific-slope Flycatcher*** *as they will often build on man-made structures. Also, the eggs were spotted whereas most other flycatchers have creamy white eggs. Without the bird actually singing, it's often hard to tell species apart. It wasn't until I got home and looked at the photo again that I noticed two of the eggs were Brown-headed Cowbird eggs. They are the larger, darker eggs.*

**Figure 168**. Waldie Island Interpretive sign where a Pacific-sloped Flycatcher built its nest under the protection of the roof. *Photo by Rita Wege, Waldie Island, Castlegar, BC, 26 July 2011. See Castlegar Friends of Parks and Trails website@ www. friendsoftrails.org*

**Figure 169.** Pacific-slope Flycatcher nest with three of its own eggs and two Brown-headed Cowbird eggs. *Photo by Rita Wege, Waldie Island, Castlegar, BC, 26 July 2011.*

### *A Lease on Life*

A webcam installed at a **Great Blue Heron** nest in **Prince Rupert** during the 2009 breeding season had some interesting natural history observations posted on the **Northwest Community College Blog**. *Five eggs were laid in May but only four chicks hatched in early June. The fifth egg was infertile. The last heron chick to hatch lived only three weeks. On June 19th, the three remaining chicks were observed flapping their wings. On July 1st there was an evening attack by a Bald Eagle pair and all three heron chicks jumped out of the nest to avoid predation. One landed on the ground and was rescued and cared for at a wildlife shelter. One leg became infected and was drained by a veterinarian before the young heron was flown courtesy of Hawk Air to a bigger rehabilitation facility on Salt Spring Island. A Bald Eagle was observed eating the infertile egg and the dead three week old chick in the nest.*

*The second chick which jumped from the nest landed on a tree branch and fell down a day or two later but did not survive. The third chick fell from the tree from where it had landed, three days later when it too was rescued and taken to a local wildlife shelter. It was cared for until August 28th when it was released back into the wild – flying strongly away.*

***Single Parenting – Raising a Family Alone***

**Janice Arndt**, from **Nelson**, writes: *In mid-July, my son Justin noticed a* ***Pacific-slope Flycatcher*** *carrying nest material just outside his bedroom window. We left for a three-week holiday right after that, but on our return discovered the flycatcher nest on the light fixture beside the back door, where this species has occasionally nested in the past. An adult was incubating three eggs.*

*By August 8 the three had hatched. We soon realized that there was only one adult flycatcher taking care of the nestlings. We assumed the parent was the female, because the young were occasionally brooded, a role not normally played by the male.*

*We often watched the adult foraging in the backyard and taking repeated trips to the nest with food* (Figure 170). *She was aided in her efforts by ideal weather - hot and dry throughout the nestling period except for one day. This allowed her to forage efficiently and reduced the need for the nestlings to be brooded for warmth. The position of the nest under the roof overhang gave the young constant shade from the hot sun.*

**Figure 170**. Adult Pacific-slope Flycatcher with food ready to feed its nestling. *Photo by Justin Arndt, Nelson, BC, 13 August 2011.*

*The single parent managed to raise all three chicks to fledging age* (Figure 171) *but in the end the absence of the second adult had unfortunate consequences. I discovered that two of the fully feathered chicks had died in the nest. Apparently when the first chick fledged the adult had accompanied and continued attending to it while neglecting the two still in the nest. This is normal behaviour in many songbirds where one parent cares for the first fledging or fledglings and the second parent hangs around for the later chicks to fledge. But in this case the loss of one parent resulted in the eventual loss of part of the brood as well.*

*The single fledgling left the nest on August 21 or 22 and was heard and seen near the house again about a week later.*

**Figure 171.** A female Pacific-sloped Flycatcher, on her own, managed to successfully raise one young from her initial brood of three from this nest. *Photo by Bethany Arndt, Nelson, BC, 14 August 2011.*

***Maybe Next Year?***

Last season we reported on how members of the **Quesnel Birding Club** lobbied to have a new, de-energized pole installed at All-West Glass for a nesting pair of **Osprey**. Things looked promising, when on April 14th two Ospreys were observed at the new nest. **Adrian Leather** comments: *A pair was present on and off throughout the nesting season but there didn't appear to be any young birds. We're wondering if it's a fairly young and inexperienced pair of Ospreys. Hopefully they'll return to try again in April [2012].*

### *Hanging by a Thread – of Grasses*

**Marcia Long** shares this unusual discovery: *On one of my many rambles along the mountainside close to my home at **Arrow Creek**, I spotted a **Chipping Sparrow** nest high up on a sweeping outer branch of a Douglas-fir tree. The adult was busy adding nesting materials. A few days later I was in the area again and discovered the nest hanging from the branch. To my surprise there was an intact egg visible. Not sure what happened to this nest, the wind or a predator? After all the work of nest-building, it was unfortunate to see it fail* (Figure 172).

**Figure 172**. Dislodged Chipping Sparrow nest. *Photo by Marcia Long, Crackerjack Creek, BC, 11 July 2011.*

### Sad End

**Mark Nyhof** writes: *While searching for nests along the Kettle River near Midway I discovered the dried remains of a male Hairy Woodpecker hanging from some sort of fine thread, possibly "hip chain"* (Figure 173). *The tragic death for this unfortunate woodpecker was even more poignant as he was hanging mere inches from a nest cavity. I couldn't help but have visions of the struggling victim thrashing desperately to free himself as his mate tended to the young. I couldn't find the typical wear marks on the tree from frequent feedings, however, so my guess is that this nest probably didn't make it to that stage.*

**Figure 173**. Dead Hairy Woodpecker found near nest cavity in a trembling aspen. *Photo by Mark Nyhof, Midway, BC, 10 July 2011.*

***Two Men and an Osprey Nest***

This story (Figure 174), by Sam Van Schie, is reproduced with permission from *Goldstream News Gazette – Black Press.*

*A nesting osprey kept a watchful eye on workers scaling the Telus cellphone tower in Colwood this week.*

*A nest was blown off the tower in a March windstorm, and the lone male raptor seemed eager to reestablish his home in Belmont Park. The osprey circled the tower with twigs in his beak and squawked at the workers. Little did the bird know the workers intend to help him make up for lost time.*

*Work to add 4G technology to the tower is complete, and an extension was attached to the top of the pole with a ready-made nest for the osprey.*

*Telus had planned to upgrade technology on the tower a few years ago, but when we saw the nest, work stopped, Telus spokesperson Shawn Hall explained.*

*Osprey nests are protected year-round by the B.C. Wildlife Act. To remove one requires a permit, which Telus was in the process of obtaining. When the nest was blown down naturally, workers were free to climb the tower.*

*Wildlife biologist Sean Pendergast with the BC Ministry of Forests, Lands and Natural Resource operations said if the nest hadn't fallen, it's likely a permit would have been granted. "Osprey are notorious for nesting on man-made structures. They like to be on the highest, most exposed point in an area so they can watch for predators, "he said. "It's unfortunate when they choose something that needs regular maintenance." He said Telus, because it didn't actually remove the nest, is under no obligation to replace it. "They've gone above and beyond to accommodate the osprey, " Pendergast said. Hall estimates the company will spend $15,000 to $20,000 ensuring the osprey can continue to nest around its tower. The new nest extension going on the pole is a temporary fix – Telus intends to eventually erect a stand-alone tower with a platform for the bird. "We want him to have a permanent home, off our active towers, so our guys don't need to worry about disturbing the nest, "Hall said. "We're in a situation now that if we need to do emergency maintenance during the months the birds live there, we wouldn't be able to access the tower, we'd have to wait" Pendergast said ospreys are quite resilient and don't seem to mind when humans move their nest to a new structure when they've gone south for the winter. "Often if you just put a few sticks from the nest onto the new platform, when they return they'll take to the new location, "he said. "They're not picky". Site foreman John Switzer*

**Figure 174.** John Switzer and Kyle Cronin of West Tower Communications look over the nest they built for an Osprey that lives on a Telus communication tower in Belmont Park, in Colwood, on southern Vancouver Island. *Photo by Sam Van Schie, Colwood, BC, 13 April 2011.*

*of West Tower Communications, the contractor working on the Telus tower, is proud of the nest he and his co-worker Kyle Cronin built for the osprey, which they've affectionately nicknamed Daren. "It's my first time building a nest. I think he'll like it, "Switzer said. "We collected up the sticks that had fallen from his other nest and grabbed some bigger branches from the bushes. "While his crew was working, some residents accused them of destroying the osprey nest, but Switzer said if people saw an osprey nest on the tower recently, it was only the one they built. The crew had mounted their handmade nest on the tower for a few hours last week, but found the bird started acting territorial around it, endangering the workers. "We're rushing through this work, working seven days a week , so we don't upset the osprey more than we have to, "he said. "We'll put the nest back up when we're finished."*

*Ospreys are migratory birds that come to the Island and other parts of Canada to mate each spring. Males arrive in March, April or May to build a nest near a water body. They often re-use old nests, adding new material to them each season. Females arrive later, moving into the nest where the pair will remain for five months, raising two to four young on a diet of fish.*

***Nature's Food Chain***

**Linda Van Damme** writes from Creston: *There is nothing more tragic than the loss of one's offspring, and watching the following scenario one day while out birding was heart wrenching. I heard a female* ***Bullock's Oriole*** *uttering alarm calls while flying down into the grasses. Repeatedly she would fly back to a perch then drop down and hover over the grasses. Something was going on down there but I couldn't see what, so I climbed onto the roof of my pick-up truck and scanned with binoculars. I watched as a* ***Common Gartersnake*** *writhed about with a recently fledged young oriole. This explained the behaviour of the distraught parent. The snake was moving around a small area and appeared to be seeking a place to take its prey but the deceased baby oriole got hung up on fallen branches causing the snake to often reverse direction. At one point I decided to walk over and have a closer look. The snake was about 24 inches long, and its jaws were wide open, firmly holding its prey* (Figure 175). *The skin of the young oriole was torn, exposing the breast. It is likely the newly fledged young was attacked by the snake while perched on a low branch, as evidenced by fresh fecal droppings on the ground. Although the fledgling was dead the female oriole was still calling when I left the scene over an hour later.*

**Figure 175.** A Common Gartersnake with a fledgling Bullock's Oriole firmly in its jaws. *Photo by Linda M. Van Damme, Creston, BC, 16 July 2011.*

### *Timing was Perfect*

The 2011 season was a year with strong winds and at some sites, fallen trees littered the landscape. At one site, **Wayne Campbell** was searching dirt banks along road cuts for Townsend's Solitaire nests when he noticed a pair of agitated **Northern Rough-winged Swallows** flying near the top of a bank. No predators were seen or heard and soon it was apparent that a branch of a recently fallen dead tree was covering their nest entrance. Immediately after the branch was sawed off, the pair entered the nest hole and several days later were feeding nestlings.

### *The Odd, but not Ugly, Duckling*

**Joanne** and **Bruce Clayton** of **Chilliwack** posted photos of a **Mallard** family on their website http://www.butterflyonmyshoulder.ca/which was intriguing. Joanne offers an explanation: *The adult female that had the little yellow duckling* (Figure 176) *in her brood was a hybrid cross between an escaped domestic white duck and a Mallard. She has a clutch of eggs every year that usually includes one yellow duckling. It is probably a throwback to the little white domestic duck which was her parent. When a Mallard has hybridised they are often referred to as Manky Mallards.*

### *Human Scare Crow?*

**Mike Wisnicki** writes from **Grand Forks**: *My good friend Iain, a vegetable grower extraordinaire was recently adopted by this pair of crows. Totally unbidden they will hop up and perch on him and even fall asleep as in this shot (*Figure 177*). He never tried to tame them at all. Go figure. Ps. If you're ever through Grand Forks, BC, check out Deanne Farms for some of the tastiest melons you've ever had.*

**Figure 177.** Two fledged American Crows find a friend. *Photo by Mike Wisnicki, Grand Forks, BC, 30 July 2011.*

**Figure 176.** Beautiful in its own right, this odd-plumaged duckling appeared in a brood with normal-coloured siblings. *Photo by Bruce Clayton. Great Blue Heron Reserve, Chilliwack, BC, 19 May 2011.*

# Publications in Short

Many fascinating articles that are of relevance to BCNRS participants were published recently by ornithologists. Some of these help explain items we have noticed or wondered about for years, some are eye-opening and announce disturbing trends in wild bird populations, and some advance our knowledge of the nesting biology of birds. This year we have listed them under the following headings.

## Beak Deformities in Wild Birds

In 2011, there were several nest cards submitted that included observations of one of the attending parents with a deformed bill. The species included **Northwestern Crow** and **Black-capped Chickadee**. The bills were not as grossly deformed as has been previously reported in British Columbia for Northern Flicker (see *Wildlife Afield* 6(2):62-64). All nests successfully fledged young.

Wild birds showing bill deformities is an increasing trend being reported in various regional populations throughout North America. This disturbing situation was recently highlighted in a thought-provoking paper, **Epizootic of Beak Deformities among Wild Birds in Alaska: An Emerging Disease in North America** by C.M. Handel, L.M. Pajot, S.M. Matsuoka, C. Van Hemert, J. Terenzi, S.L. Talbot, D.M. Mulcahy, C.U. Meteyer, and K.A. Trust (Auk 127(4):882-898, 2010). While most of the abnormality records (2,160) were from Alaska, the authors noted other reports south along the Pacific coast and throughout the northeastern United States.

In their study, about 6.5% of the wild population was affected with the disease, raising concerns that perhaps there has been a significant change within the ecosystem the birds are found in. Deformities appear to affect the outer keratin layer of the beak (rhamphotheca) and in some birds there were additional lesions on the body and legs. The underlying cause of the keratin disorder is presently being investigated.

As we all know, the beaks of birds are critical for eating, grooming, manipulating items, defense, fighting, and feeding young.

Another study, **Beak Deformities in Northwestern Crows: Evidence of a Multispecies Epizootic** by C. Van Hemert and C.M. Hadel (Auk 127(4):746-751, 2010), also in Alaska, showed that the prevalence of beak deformities in adult Northwestern Crows was 16.9 %, the highest rate for any wild population. Most of the beaks were elongated and crossed

## Brown-headed Cowbird Parasitism

Some hosts of Brown-headed Cowbird parasitism are known to eject the foreign eggs while other species continue to incubate and raise the adopted young to fledging. It was not known if a species with a great variation in the pattern in their clutch was more likely to accept a cowbird egg. B.D. Peer, S.I. Rothstein, and R.A. McCleery, in their paper **Intraclutch Variation in Egg Appearance Constrains Rejection of Brown-Headed Cowbird (*Molothrus ater*) Eggs in Common Grackles (*Quiscalus quiscula*)** (Auk 127(4):759-764, 2010), showed with Common Grackle that the more variation within their clutch (Figure 178) the more likely they will not eject the foreign egg.

**Figure 178.** The pattern on individual eggs in a clutch of Common Grackle varies considerably, which may be a reason that Brown-headed Cowbird may be able to use grackles as a successful host. *Photo by R. Wayne Campbell.*

## Common Loons and Nest Disturbance

Thousands of lakes are scattered throughout British Columbia and many of these are used for aquatic recreation and human habitation as well as nesting grounds for Common Loons. Increasing use of human-related activities on lakes coincides with the summer breeding

period of loons which may impact their breeding success. A recent study, **Effects of Spatial Disturbance on Common Loon Nest Site Selection and Territory Success** (Journal of Wildlife Management 75(2):289-296, 2011), suggests that breeding loons are often forced to select sub-optimal nesting habitat due to human disturbance. As a result productivity is reduced. The authors, K.P. McCarthy and S. Destefano, suggest that management efforts should focus on limiting disturbance at the best nesting territories.

## Herring Gull Chick Survival

In British Columbia, Herring Gull may nest as isolated pairs (see *Wildlife Afield* 5(1): 49-51, 2008) or in small dense colonies. Studies have shown that chick survival (Figure 179) depends on hatch weight, hatch date, and hatch order but the effect of nest density on survival was not well understood. In a study in Maine, **Nesting Density is an important Factor Affecting Chick Growth and Survival in the Herring Gull** (Condor 113(3) 565-571, 2011); biologists M.S. Savoca, D.N. Bonter, B. Zuckerberg, J.L. Dickinson, and J.C. Ellis showed that chicks reared in a dense colony had a greater probability of survival than those in isolated situations.

**Figure 179.** There are few dense Herring Gull colonies in British Columbia. As a result, the probability of chick survival may be lower in BC than in other parts of the species' range, based on research in the northeastern United States. *Photo by R. Wayne Campbell, Fraser Lake, BC, 5 June 1977.*

## Nest-Site Fidelity in Gyrfalcons

A growing number of people are concerned about the often invasive methods used by biologists and others to study birds. When a method is developed to provide the necessary information for protection and management that is non-obtrusive, the research should be encouraged and expanded.

For many years, biologists have assumed that Gyrfalcons remain faithful to traditional nesting sites during their life. Most of the information comes from aerial surveys, usually by helicopter, without landing at the site (Figure 180). Authors T.L. Booms, S.L. Talbot, G.K. Sage, B.J. McCaffery, K.G. McCracken, and P.F. Schempf recently published an important paper **Nest-Site Fidelity and Dispersal of Gyrfalcons Estimated by Noninvasive Genetic Sampling** (Condor 113(4):768-778, 2011) in which they collected and analyzed moulted feathers collected at sites by genetic sampling. Since each feather is unique, they were able to determine that only 22% of birds returned to the same nest site the following year but that pairs remained faithful to nesting territories. Additional information from this noninvasive approach was obtained for juvenile dispersal, mean tenure at territories, and long-term nest-site fidelity.

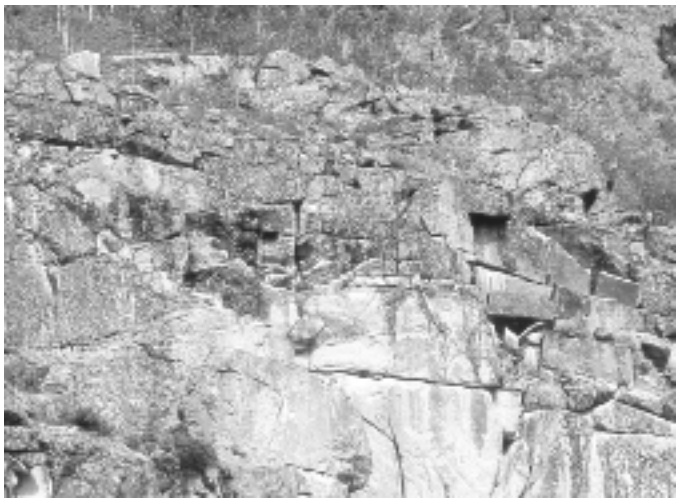


**Figure 180.** By collecting moulted feathers at Gyrfalcon nests sites and analyzing them genetically in a laboratory, researchers can obtain by noninvasive methods, information on the bird's dispersal, longevity, nest-site fidelity, and other topics that may help in understanding mechanisms for their behaviour. *Photo by R. Wayne Campbell, near Gladys Lake, BC, 5 July 1996.*

# Requesting & Submitting Cards

### Please Note Our Current Mailing Address

BC NEST RECORD SCHEME
3825 Cadboro Bay Road
PO Box 55053
Victoria, B.C. V8N 6L8

*Tel\Fax*: (250) 477-0465
*e-mail*: bcfws@shaw.ca

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

Two kinds of cards are available: **single nesting species** with spaces for multiple visits and **colonial cards** for species that breed in groups, usually close together. An **Instruction Manual** is also available, at no charge, from the address above. Due to fieldwork by the authors we suggest that you request material before mid-May.

The BCFWS website (www.wildlifebc.org) presently has instructions and materials available to participants for downloading.

The data summaries, writing, and compilation of the annual report actually begins with the new year as volunteer time allows so that the report can be published and distributed in the spring of the following year. We prefer to have nest cards completed and submitted by October 1 so the task of compiling the breeding records can be completed by the end of the year.

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

Other species, including some waterfowl, are also parasitized during the nesting season. For example, it is not uncommon to find **Ruddy Duck** eggs in **Redhead**, **Lesser Scaup, or American Coot** 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 such as **Canada Goose** (Figure 181), **Mallard**, **California Quail**, **Northern Flicker**, **Barn Swallow**, **Black-billed Magpie**, **Northwestern** and **American Crow**, **American Robin**, **Song Sparrow**, **Dark-eyed Junco** and **House Finch** and introduced species such as **Rock Pigeon**, **European Starling**, and **House Sparrow** are still important to record. Often, these are the only species, because of numbers, that researchers can analyse with some statistical confidence.

Please use a dark ballpoint pen or dark ink (not pencil) and write clearly.

We appreciate receiving completed cards as early as possible. This gives us a "jump start" on the report.

**Figure 181.** Documentary photographs for common and widely distributed species are valuable additions to BCNRS files. In 2011, Rite Wege found eight Canada Goose nests on a small island in the Kootenay River, four of which shows placement of nests. *Photos by Rita Wege, Gold Island, BC, 22 April 2011.*

## Acknowledgements

**Eileen Campbell**, with the help of her 96 year-old father **James McCammon** (Figure 182), sorted incoming nest record cards for efficient electronic data entry. The task started in late July 2011 and continued into March 2012 when a few late cards were received. Eileen entered all records (*e.g.*, species code, map grid, year, number of breeding records, and name(s) of contributors) into an Excel spreadsheet for use in preparing various sections of the report. Individual data summaries were completed by **Patricia Huet**.


**Figure 182.** Eileen Campbell and her 96-year old father James McCammon sorting nest cards by contributor, species, and map grid in preparation for electronic data entry. *Photo by R. Wayne Campbell, Victoria, BC, 1 September 2011.*


Gathering and submitting breeding records through preparing and publishing the annual report is entirely a volunteer effort. There are no government or industry subsidies. Therefore, we sincerely appreciate the efforts of many individuals who also volunteered time to contribute text, provide additional information when asked, send photographs, edit text, and provide encouragement. Our regulars, along with a few new individuals, contributed written items that were incorporated into the report:

*Long-term Inventory and Monitoring Projects*: Janice Arndt, Monica and Ed Dahl, Gary Davidson, Ted Hillary, Sheila Reynolds, Laurie Rockwell, Lorraine Symmes and Karen Wiebe.

*Nest Box Notes and Notes from the Field*: Carla Ahern, Janice Arndt, Lloyd Atkins, Joanne and Bruce Clayton, Pat Huet, Ron Jakimchuk, Adrian Leather, Marcia Long, Janne Perrin, Laurie Rockwell, Rita Wege, and Mike Wisnicki.

*Incidental Events*: Mark Hobson kindly shared a copy of his original field notes on nesting Barn Swallows and Kevin Knight provided a write-up on Tennessee Warbler.

We have been told that when the report arrives, the first thing that people do is look at the pictures. These are a major addition each year and in 2011 there are over 200 to look at. While we appreciate receiving all images, there are a few individuals who regularly submit substantial numbers of photographs fully labelled, which allows flexibility for selection in various sections when preparing the annual report. These photographers include Vicky and Lloyd Atkins, Kevin Atkins (Figure 183), Vi and John Lambie, Marcia Long, Marcus Womersley, and Nancy Krueger. Photographers are acknowledged throughout the report with figure captions.

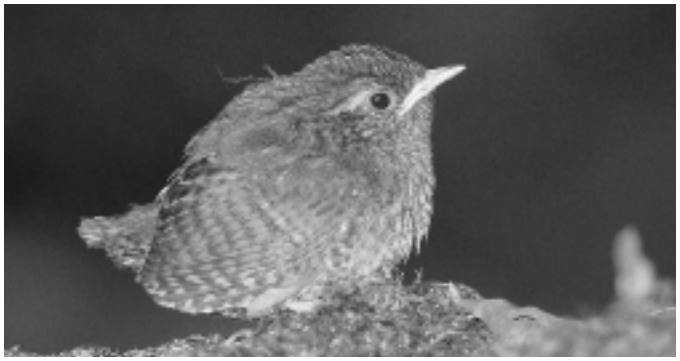



**Figure 183.** A newly fledged Pacific Wren, with yellow gape and wisps of down waits to be fed by a nearby parent. *Photo by Kevin Atkins, Vancouver, BC.*


The entire publication, from cover photos and design, preparing the photographs, and layout, was completed by **Mark Nyhof**, a task that took over a month of volunteer time.

Finally, we had hoped to have this report mailed in spring 2012. We were on track until one of the compilers had personal health issues during the winter and early spring. In late November, 2011, Wayne rushed out in the dark to save his cat from a raccoon and tripped over a garden hose. This unfortunate incident required major surgeries including bone transplants and replacement of front teeth!

Our commitment to publish a thorough and quality report is further enhanced by the efforts of others so we appreciate the support of BCNRS participants in 2011 and hope the 2012 season is equally as fulfilling.


**Have a great season of discovery!**

# Appendices

## Appendix 1. Plumage Development of Young Waterfowl

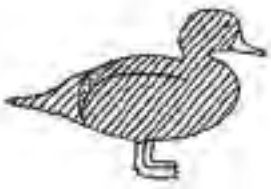
*Class I A, young are down-covered, 1-7 days of age*

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

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

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

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



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

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

*Adult Dabbling Duck*

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

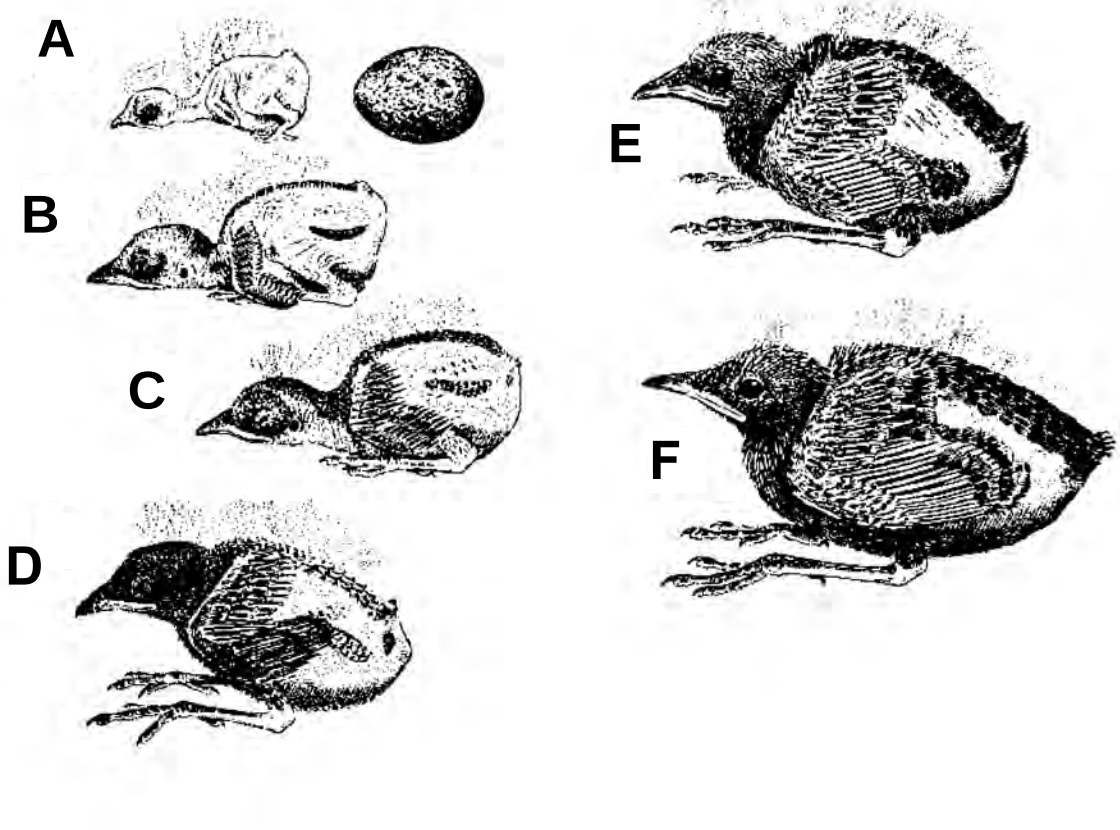
| Contents of nest when found or last visited | Next visit should be | Notes needed at next visit |
|---|---|---|
| Nest under construction | 2-4 days later, to determine laying schedule | No. of eggs, warm or cold; parent at nest or not |
| 1-3 eggs | 3-5 days later, to confirm completion of clutch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

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

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

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

## Appendix 3. Stages of Nestling Songbird Growth




**Stages of Nestling Songbird 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 and still does not show all of the adult features. Do you call it an immature, a young, or a sub-adult, or to be more precise a second-year winter bird?

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

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

### *Young*

*A general term used while the adults protect and feed their offspring from the time of hatching to independence.*

It usually includes both the nestling and fledgling periods but is frequently used to refer to a bird in all stages of growth to maturity (Figure 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 large and well feathered in the nest, they still remain nestlings until their first trip out of the nest (Figure 3).

**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. *Photo by R. Wayne Campbell, Victoria, BC, 27 June 2007.*

**Figure 2**. The nestling period for an American Robin, from hatching to leaving the nest (*i.e*, fledging), is about 14-15 days. *Photo by Marcia Long, Creston, BC, 29 June 2006.*

### *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 different species. For example, young American Kestrels depend on their parents to feed them

**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). *Photo by R. Wayne Campbell, near Copper Island, BC, 26 May 1996.*

for 12-14 days after fledging while young Prairie Falcons may continue to be fed by their parents for up to 35 days. Some young songbirds leave the nest before they are capable of sustained flight and beg for food, often from a concealed location which is why we sometimes observe adults carrying a large billful of food into the grasses or shrubs.

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

**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. *Photo by Kevin Atkins, near Vernon, BC, 8 July 2007.*

Fledglings may have certain identifiable characteristics such as tufts of down on the head, a yellow or pink gape at the corner of the mouth, stubby or bob-tailed versus short or long tail, inability to fly well or not at all, or a spotted breast.

Please fill out nest 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 a while, but is being fed by its parents, is noteworthy. These observations can be used to calculate a bird's full breeding period. More information can be found in the BCNRS instruction manual, which is available free-of-charge from the Biodiversity Centre for Wildlife Studies at bcfws@shaw.ca.

### *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.

**Figure 5.** This juvenile Glaucous-winged Gull left its natal colony in late July and a month later is feeding independently of its parents. *Photo by R. Wayne Campbell, Esquimalt Lagoon, BC, 30 August 2006.*

### *Immature*

*A young bird that has completed its post-juvenal moult (e.g., starts soon after independence) and until it acquires its adult plumage.*

For some groups of birds (*e.g.*, eagles and gulls; Figure 6) this stage may last from two to five years.

**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. *Photo by R. Wayne Campbell, Esquimalt Lagoon, BC. 31 August 2006.*

**Figure 7.** This Bald Eagle is actually a sub-adult because it has remains of brown feathers in its head and tail. Between 4 and 5 years these areas become pure white. *Photo by R. Wayne Campbell, Sechelt, BC, 4 June 1996.*

### *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.

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

## 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-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-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. *Photo by R. Wayne Campbell, Tunkwa Lake, BC, 30 June 2008.*

**Figure 2.** A female Barrow's Goldeneye was observed flying into a hole, 10.6 m above ground, in this live black cottonwood tree (dbh 28 cm). *Photo by R. Wayne Campbell on the shore of Bridge Lake, BC, 7 June 1996.*

### *Ducks*

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

**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). *Photo by Linda M. Van Damme, Creston, BC, 6 May 2008.*

**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. *Photo by R. Wayne Campbell near Riske Creek, BC, 3 July 2002.*

### *Owls*

The smaller owls, such as **Flammulated**, **Northern Saw-whet**, **Boreal**, **Northern Pygmy** (Figure 5), 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 or after the owls 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 owner's permission if it is required, and search for potential cavity nest sites.

If you scratch the tree trunk with a stick or lightly tap 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 when last observed. Owls fledge within 22-32 days after hatching.

**Figure 5.** A near fledging Northern Pygmy-Owl looks out from a nest cavity that contained another six owlets. *Photo by Mark Nyhof, near Rock Creek, BC, 9 June 1984.*

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

**Figure 7.** Northern Saw-whet Owl adult peering out of old woodpecker cavity. A later visit may confirm nesting. *Photo by Linda M. Van Damme, Creston, BC, 21 April 2007.*

The summary in Table 1 gives average periods of incubation and fledging for British Columbia (from *The Birds of British Columbia*).

**Table 1.** Average incubation and fledging periods for five cavity-nesting species of owls in British Columbia.

| Species | Avg. Incubation Period (days) | Avg. Fledging Period (days) |
|---|---|---|
| Flammulated Owl | 22 | 22 |
| Western Screech-Owl | 26 | 35-42 |
| Northern Pygmy-Owl | 28 | 29-32 |
| Boreal Owl | 27 | 28-36 |
| Northern Saw-whet Owl | 27 | 27-34 |

**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. *Photo by Marcia Long, Creston, BC, 13 May 2006.*

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.

**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 feathered |
| 13 | 05 | 06 | | 2 | appeared at opening 1 larger than other |

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

(did not tap on tree) was there 3 hr.

NEST DESCRIPTION

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

Materials:

Position:

Height above ground/cliff-base/water 7 m

UTM Zone 11 UTM Easting: 538835 UTM Northing: 5427586

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

### *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 one time (Figure 11).

Nestlings fledge approximately 30 days after hatching.

**Figure 10.** Female American Kestrel looking out nesting cavity in broken dead trembling aspen snag when male gave food delivery call. Prey delivery consisted of grasshoppers and small rodents. *Photo by Marcia Long, Creston, BC, 7 June 2008.*

**Figure 11.** Nestling American Kestrel, close to fledging is peering out cavity near top of 6 m tall dead black cottonwood tree, 5.9 m from ground with a dbh of 43 cm. *Photo by Linda M. Van Damme Creston, BC, 26 June 2008.*

### *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 bill full of wood chips, this is an ideal time to locate nest sites. Gather more specific information relating to the tree at a later time once the woodpeckers 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 13a and b).

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.

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

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

**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. *Photo by R. Wayne Campbell, near Houston, BC, 23 June 1997.*

**Figure 13.** The shape of some cavities, with a little experience, can lead to the identification of a woodpecker species. The holes of sapsuckers (a) are perfectly round (*near Oliver, BC, 15 May 1996*) while those of a Pileated Woodpecker (b) are oval (*near Cawston, BC, 15 June 1996*) in shape. *Photos by 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 bill full of "mushy feces". This behaviour also indicates nestlings are present. *Photo by Sharon Laughlin, Creston, BC, 19 June 2008.*

### *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 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.

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

### *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 than 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 laid 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 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.

**Figure 16.** Spotting an adult Mountain Chickadee with food in its bill and following it in stages will eventually lead to its nest. *Photo by Mark Nyhof Oliver, BC, 30 May 1994.*

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

**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 wood chips 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 with nestlings in the Creston valley by Linda Van Damme in 2008.

### *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 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.

**Figure 19**. Three nestling European Starlings being fed at nest entrance in a natural cavity in a mature black cottonwood tree. *Photo by Linda M. Van Damme, Creston, BC, 16 May 2006.*

**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. *Photo by R. Wayne Campbell, Osoyoos, BC, 3 August 1998.*

### *House Sparrow*

Generally speaking House Sparrows (Figure 21) tend to nest in urban and rural residential and farmland areas and will use any structure that allows access, so not necessarily a tree cavity. Their nests are a bulky structure which appear messily built. As common as sparrows are in some parts of the province, they are not a commonly reported nesting species. They readily take over nest boxes set out for other species and the majority of our records come from nest boxes or fledged young being fed. The same documentation applies to this species as the ones described above.

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

**Figure 21.** In city and residential areas, House Sparrows are quick to take over any suitable crevice that provides some depth for a nest and protection from wind and rain. *Photo by Mark Nyhof, Delta BC, 4 December 2010.*

## General Tips for Inspecting Cavity-nesting Birds

(1) Re-visit known nesting trees for species such as **Lewis's Woodpecker** (Figure 22), **Western Bluebird**, **Mountain Bluebird**, **European Starling**, and **Mountain Chickadee** which 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**.

**Figure 22.** A natural cavity in an old ponderosa pine snag near Nicola Lake was used by a pair of Lewis's Woodpeckers for nesting for at least 27 years before it finally fell down. *Photo by Mark Nyhof, Newgate BC, 1 July 1997.*

(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 (Figure 23) 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 exits without food, one can generally assume that small young are being fed. The size of the food items increases as does the amount carried in the bill as the young are growing bigger.

**Figure 23.** This Hairy Woodpecker, not fully entering its nest, suggests that sizeable young are being fed. *Photo by Mark Nyhof, Christina Lake BC, 23 May 1980.*

(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 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 position where the cavity can be safely checked (Figure 24). Obviously a ladder is best, or a climbable tree, but sometimes the "prop" technique may be the only way to examine the contents.

**Figure 24.** Adam Nyhof using a piece of wood found nearby as a prop to get closer to a cavity for inspection. *Photo by Mark Nyhof, Gang Ranch, BC, 6 July 2007.*

## Appendix 6. Ageing Bald Eagle Chicks: Colour, Size, and Estimated Age

This brief guide will aid contributors in ageing Bald Eagle chicks while checking and monitoring nests.

The late Rick Davies, a provincial government biologist, developed a chart for ageing nestling Bald Eagles that he referred to during aerial nest surveys of the south coast. Although most of us never get to peer into a Bald Eagle nest, descriptions of later stages of nestling growth is helpful to have on file.

**Table 1.** Determining the age of Bald Eagle Nestling Using Colour, Size, and Estimated Age.

| **Bald Eagle Nestling** | | |
|---|---|---|
| **Colour** | **Size** | **Estimated Age** |
| White | Small | 1 week old or less |
| Grey[1] | Small | 2 weeks old |
| Grey | Larger | 3 weeks old |
| Grey and brown | Larger | 4-5 weeks old |
| Mostly brown | Mid-size | 6 weeks old |
| All-brown | Large | 6-8 weeks old |
| Brown (Figure 1) | Full size | 9-12 weeks old |

[1]See Appendix 4.

**Figure 1.** These nestling Bald Eagles are 10-11 weeks old. *Photo by R. Wayne Campbell, Joseph Island, BC, 28 June 1976.*

# BCNRS Participant Profile

### Marcia Long

Marcia was raised in the pulp mill community of Woodfibre located near Squamish on the south coast of British Columbia. The isolated site no longer exists, as the mill was closed in 2006. She and her siblings enjoyed the freedom of the outdoors with only boat access to the outside world. As a child, Marcia had a deep curiosity about the natural world and was always looking for unusual things. Her formative years were spent exploring the local landscape, looking at birds, rocks, shells, and wild flowers, collecting wild mushrooms, berries, and other edible foods her mother taught the family to identify.

Her interest and initiation into photography happened early, at age nine, when she was given her first camera, a Brownie box. Marcia had a tendency to look for the minutia in nature and the camera helped capture it.

She married Tom Long, her husband of 46 years, and raised a family. Due to Tom's employment, they lived in many communities in Alberta, New Brunswick, Washington, and British Columbia. And because of the many moves, there was always a new place to explore from rain coast forests to deserts and so the outdoors remained a constant interest throughout her life.

In retirement, Tom and Marcia settled in Creston, where her interest in birding was further developed due to the abundance of bird life. She joined the Creston Field Naturalists and goes on scheduled bird walks and participates in the annual Audubon Christmas bird count. Her interest in breeding birds was piqued when she met local birder Linda Van Damme, who introduced her to the British Columbia Nest Record Scheme. Since 2005, Marcia has contributed nest cards annually for a variety of species, including some of the less commonly seen breeding birds of the Creston valley, such as Northern Saw-whet Owl (see *Wildlife Afield* 4(1) 80-82, 2004), Dusky Flycatcher, Cassin's Finch, White-winged Crossbill, and Evening Grosbeak.

Marcia is never without her camera and has captured many common and unusual wildlife events. She regularly contributes photos to the Biodiversity Centre for Wildlife Studies for their bi-annual natural history journal *Wildlife Afield*, the annual BC Nest Record Scheme report, and the BC Photo File for Wildlife Records. Recently, her colour image of a tom Wild Turkey was chosen as the back cover of the latest issue of *Wildlife Afield.*

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