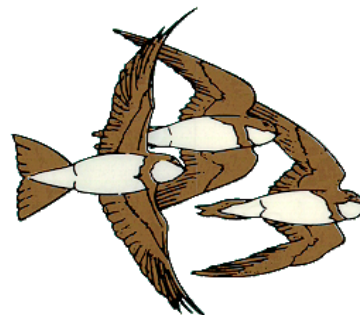


BBS CANADA



A Newsletter for Cooperators in the Breeding Bird Survey of Canada

Canadian Wildlife Service, National Wildlife Research Centre, Ottawa, Ontario K1A 0H3

WINTER 2003

Dear BBS participants,

As I write this in the deep freeze of an Ottawa winter (-28° C today!) it is hard to imagine those spring days out on my BBS routes.

The 2002 coverage of BBS routes was up in some provinces and territories and down in others (see page 5.) It is hard to know what causes these fluctuations but they are at least partly related to bad weather in some areas of the country. In other cases we are still waiting for some data sheets to be returned to our office so the final 2002 coverage may rise as these late data are received. We still strive for that ever elusive goal of 500 routes in Canada!

Our office, along with the Canadian Wildlife Service's National Wildlife Research Centre, has moved from Hull, Québec to the Carleton University campus in Ottawa. Please note the new mailing address and phone/fax numbers listed on this page. Our website has been revised and is or will soon be live at the address given on page 14.

This year we continued our efforts to collect geographic coordinates for BBS stop locations. Thank you very much

to everyone who helped with this. Running a BBS route is already a huge contribution, though. Please only help with these extra tasks if you have the inclination, time and energy.

Sixty routes were done by volunteers either using their own GPS units or borrowing them from provincial coordinators. With volunteer help from Carleton University students we are in the process of entering the GPS data for those participants who handed their data in on paper. . See *BBS Canada*, Winter 2002, for more information on the stop location database.

Since 1997 we have been routinely entering data for all 50 stops on the BBS routes but, prior to that, the data were entered in five 10-stop subtotals. This year we entered all the historical stop-by-stop data for Saskatchewan. We are now starting data entry on the Alberta historical dataset and plan to make our way across Canada, as time and money permit, until all the provinces are completed.

As always I wish you fair weather and good birding on your routes this year.

Sincerely,

Connie Downes

Breeding Bird Survey Coordinator
National Wildlife Research Centre
Canadian Wildlife Service
Carleton University
1125 Colonel By Dr. (Raven Road)
Ottawa, ON K1A 0H3 (post)
K1S 5B6 (courier)

tel: 613-998-0490
fax: 613-998-0458
email: Connie.Downes@ec.gc.ca

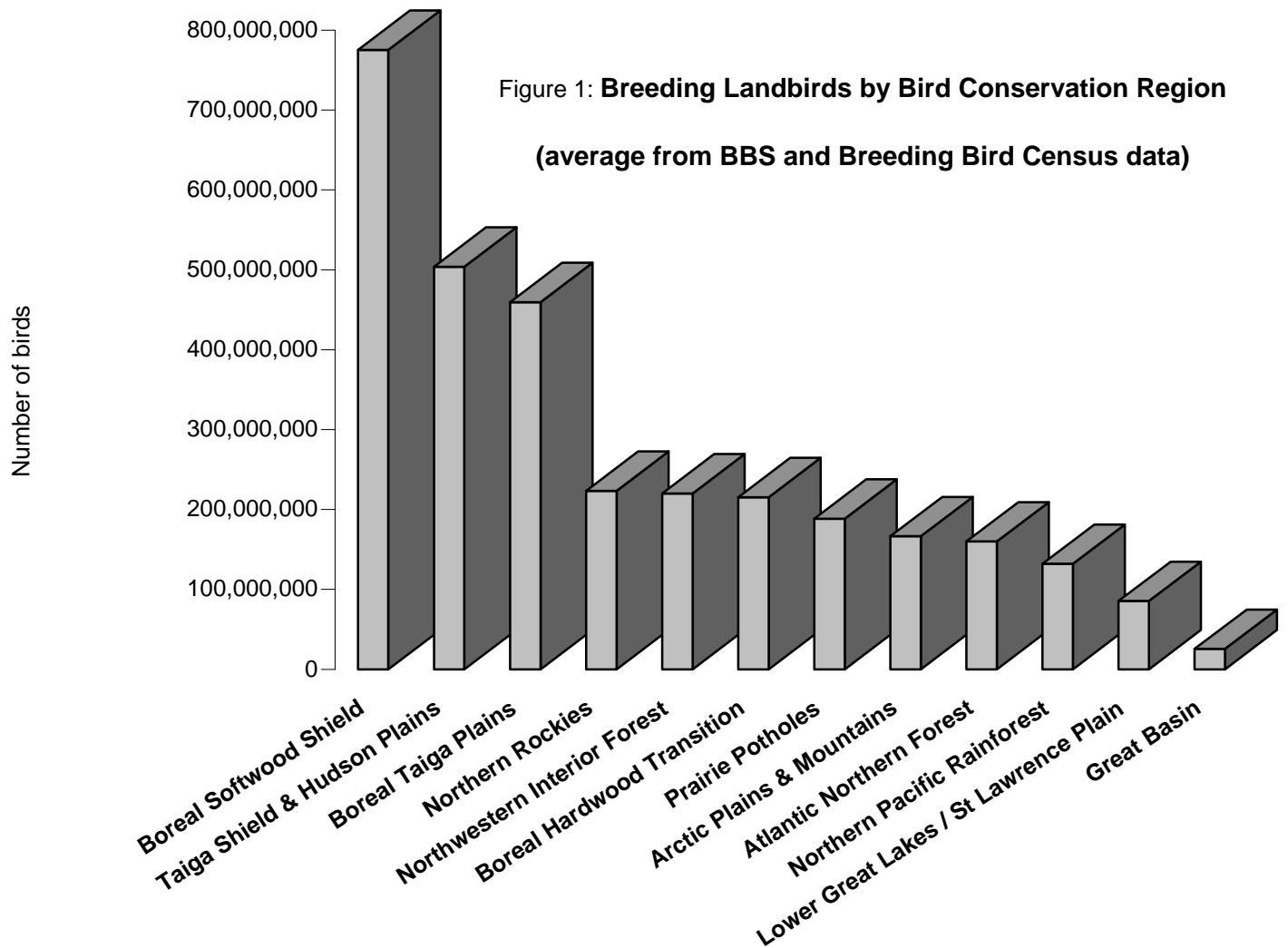
You can also contact Bev McBride at 998-0492;
Bev.McBride@ec.gc.ca

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How many birds are there?

Adapted in part from P. Blancher, BirdWatch Canada, Summer 2002, publication of Bird Studies Canada

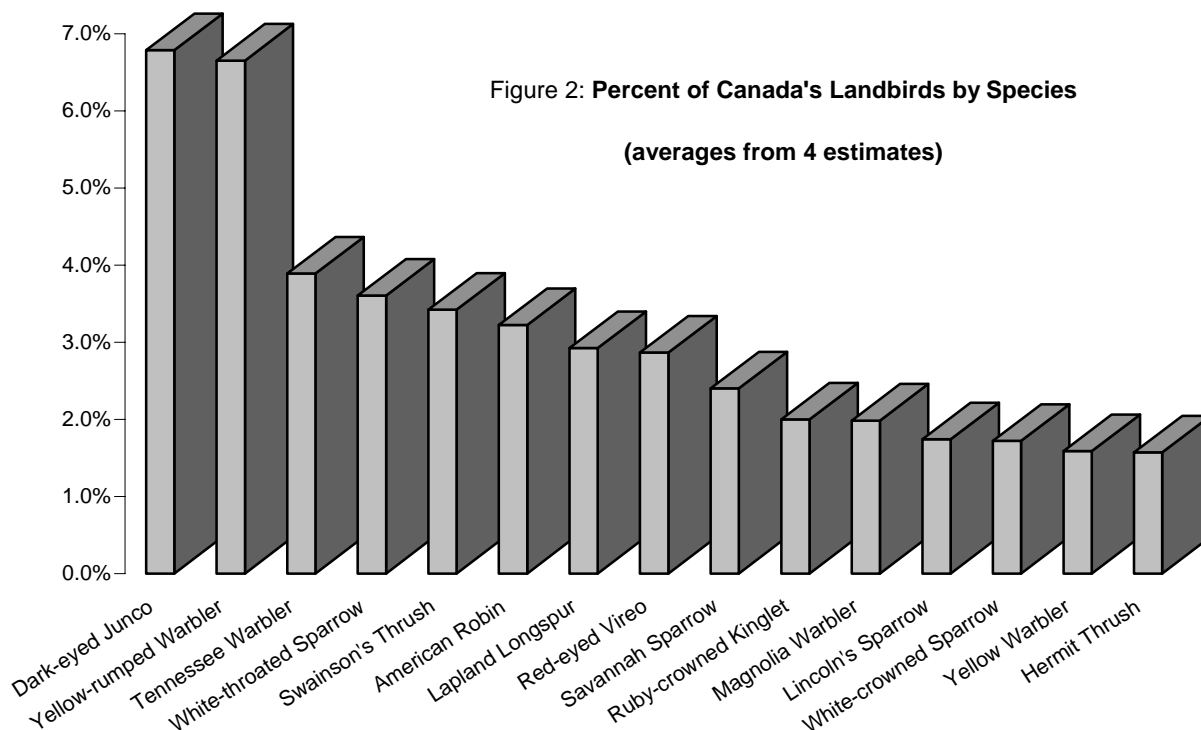
Breeding Bird Survey data provide an index of bird population abundance that can be used to estimate population trends. In our three-minute BBS count we don't expect to record every individual bird at each stop. Instead these counts are used as an index to detect relative changes in bird numbers from year to year and region to region. But, with some simple assumptions and adjustments, it is also possible to use BBS counts to estimate how many breeding landbirds there are in Canada. The numbers are in the billions, according to the latest estimates, and many species are almost completely dependent on breeding habitat in Canada.



Peter Blancher, Partners in Flight scientist at Bird Studies Canada, has been working with Ken Rosenberg at the Cornell Lab of Ornithology to estimate landbird numbers across North America. Relying heavily on BBS data, Blancher estimated how many landbirds of how many species breed in Canada and then migrate to other countries. To do so he used data from the BBS, as well as the Breeding Bird Census (BBC), checklist survey data from the Northwest Territories and Nunavut, breeding bird atlas data from Ontario and the Maritimes (where volunteers categorized species by abundance as well as presence/absence), and range maps.

Landbirds are a large and diverse group. There are 274 species of landbirds from 40 families that regularly breed in Canada, and of these at least 78% are migratory. Blancher's estimates suggest somewhere between two and four billion breeding adults, with perhaps double that number of birds prior to fall migration.

Although these estimates are not very precise, some important conclusions can be drawn from the data. For instance, well over half of Canada's landbirds breed in boreal and taiga forests (see Figure 1), suggesting these areas are high priorities for research and conservation.



Warblers and sparrows stand out as the most abundant families, each including close to 30% of all Canadian landbirds. Thrushes contribute another 10%, with flycatchers, vireos, finches, blackbirds and kinglets adding a further 2-5% each. Dark-eyed Junco and Yellow-rumped Warbler topped the list as the most abundant Canadian landbirds. Many of the most abundant species are those characteristic of northern forests (see Figure 2.) At least a few of these species are estimated to have upwards of 100 million breeding adults. The Lapland Longspur, the most abundant breeding bird in the arctic tundra, is among Canada's top 10 landbirds. The most abundant landbirds all have three things in common: high breeding densities, breeding ranges covering at least 30% of Canada, and all are migratory.

Blancher's work demonstrates how valuable Canada is as a breeding ground for migratory birds. He used range map files from **Wildspace**TM (see CWS Ontario Region website <http://www.on.ec.gc.ca/wildlife/wildspace/intro-e.html>) to estimate the proportion of each species that leaves Canada after breeding. Using these proportions and his estimates of individual bird numbers he determined that Canada "exports" four to seven billion landbirds each fall! Of the most abundant landbird families mentioned above, almost all (more than 99% of) warblers, flycatchers, and vireos leave Canada after breeding. Finches, on the other hand, mostly remain in Canada for the winter with about 25% migrating further south. Blancher estimates that 90-100% of the global population of each of the following species breed in Canada and then migrate elsewhere: Harris's Sparrow, Tennessee Warbler, Palm Warbler, Philadelphia Vireo, Cape May Warbler, Bay-breasted Warbler, Smith's Longspur, Connecticut Warbler, Yellow-bellied Flycatcher, Magnolia Warbler, Sprague's Pipit, White-throated Sparrow, Mourning Warbler, and Lincoln's Sparrow.

Extending this analysis to the Bird Conservation Regions (BCRs) of Canada (see *BBS Canada*, Winter 2001 for map of Bird Conservation Regions), he showed that certain species are highly dependent on particular BCRs for their hemispheric (and often global) population. For example over 90% of Harris's Sparrows migrate out of the Arctic Plains and Mountains Region, close to 90% of Smith's Longspurs are linked to the Taiga Shield and Hudson Plains, and a similarly high proportion of Sprague's Pipits come from the Canadian Prairie Potholes. The Boreal Shield is a source of more than 50% of many warbler populations. Even very small BCRs

are hemispherically-important sources for some species; the Canadian portion of the Great Basin Region has only 0.1% of the hemispheric land mass, but exports 10% or more of the global populations of Red-naped Sapsucker and Calliope Hummingbird.

Results from this sort of research contribute to a better understanding of the numbers of birds Canada shares with other countries and the percent of populations dependent on habitat here. Such knowledge assists in the development of more effective conservation strategies both at home and internationally and is very useful for public education purposes. This research would not be possible without the data from the Breeding Bird Survey and other surveys that volunteers like you collect. ♣

Your route on the Internet

Did you know that you can use the Internet to get interesting historical information about your own BBS routes? Visit the US-hosted North American Breeding Bird Survey site given on page 14. Click on the "Raw Data" heading. After you read and accept the Disclaimer you will see several data search options. All of these query the BBS database, but the first three give results listed by English common name. The others list results only by the five-digit species code so you need to refer to a list that matches the code to the species name. "Species List for a Route" will show you each species ever recorded on your or any other route you ask about. "Species Total for a Route by Year" lists the count by year for every species for the range of years you select. "State Summary" gives a species total for any province or territory for a range of years.

Other search options allow you to retrieve weather data for surveys, geographic coordinates of starting points, and to search by species and for groups of up to 42 individually selected routes. These may be more of interest to researchers. If you plan to use BBS data for a study please heed the disclaimer and read the information about the ongoing revision and correction of the database. ♣

BBS Training CD-ROM program

The BBS office has developed a training program on CD-ROM to teach new observers the standardized protocol for conducting BBS routes. The CD program covers procedures for locating stops, counting birds, timing and recording data. It explains what equipment is needed, how to deal with weather problems and safety issues. Because BBS participants must already have excellent bird identification skills the program does not include training on species identification.

Beginning in 2003, all new observers will automatically receive a copy of the CD with their BBS package. The training program takes about one hour to complete and includes a series of short quizzes on the techniques. Upon successful completion of the program participants receive a certificate that they can then register with the BBS via the Internet. (See "Training Registration" link under the "Data Entry" section of the N.A. BBS web site (see page 14 for address.)

Although aimed at new observers the training program will also be an excellent refresher course for veteran BBS participants. However, our supply of CDs is limited and we need these for people who have never run a BBS route. We ask that veteran BBSers await the Internet version (coming soon to your BBS website!) of the program. We will let you know when this is available. Alternatively, provincial coordinators will each have a few copies of the CD ROM that they can lend to any interested participants. ♣

Field Notes

Observers often point out noise problems along their routes. **Lenora Flynn's** Legend, Alberta route had an interesting one in 2002. As she tried to survey stop 36, nine Marbled Godwits took flight one or two at time until all were circling overhead and calling. The noise made counting other birds just about impossible. However, not a single vehicle came along during the whole route. In fact, she has never had more than five vehicles.

At stop 15 on Minago River, Manitiba, **Peter Taylor** experienced three Bonaparte's Gulls mobbing a pair of screaming Red-tailed Hawks. Meanwhile a Greater Yellowlegs scolded Peter from 20 metres away before taking off to chase one of the hawks. How's that for a ruckus?

Mark Bradley and assistants **Jane Chisholm** and **Sharon Irwin** had a record high number of vehicles on the Little Buffalo, Northwest Territories, route: eight! Only two came by during count periods, though. (We know many of you deal with lots of traffic on your route and can only dream of a survey with so few cars.)

Bill Taylor of the Alberta Keoma route reports that 2002 was the first time in his 10 years when wind was not a factor effecting his run.

Darlene Salter runs two rugged routes in northern Ontario back country. Both of them presented problems with washed out roads. Regarding Ghost Lake she writes, "*Due to the heavy rains during June all roads in our area including paved roads experienced washouts. Many areas were declared disaster sites and bush travel was impossible. I left this survey route as late as possible knowing it wasn't a priority road for repair. By July 4th all washouts along the route had been repaired except the middle section at stop 25. Currently no harvesting is taking place on this section so it wasn't repaired.*" The only way to continue the survey beyond stop 25 was to drive out and around and pick up at stop 26 the next day. Darlene and assistant **Cheryl**

Dzida found a Least Bittern on the nearby Barren Brook route.

Madelon Schouten, who reports every year from her six routes in BC, had lots of surprises in 2002. She found Golden Eagles on both the Lower Nicola and Bromley routes. It's unusual to see the eagles on two routes in a season, she says, but she knows there's a nest near Bromley that she can't see from the road. Also unexpected was an American Redstart on Osprey Lake. On Princeton a Three-toed Woodpecker in a burn was good find, although it wasn't a coveted White-headed Woodpecker.

For 23 years **Muriel Carlson** has hoped to hear an Upland Sandpiper on the Brightsand, Saskatchewan route. She has always known they were there but until 2002 none had ever spoken up during her BBS.

Among reported firsts were Northern Pygmy-Owl, Eastern Kingbird and Cliff Swallow for **Andrew Slater** on Highwood River, Alberta and Pine Siskin for **William Korolyk** on Sheep Coulee, Alberta. **Harvey Mead** found the first-ever Mourning Dove for Québec's St-Urbain route. Caspian Terns were new for **Margaret Arnaudin** on Lacolle, Québec.

In the "other animals" department, **Nick Escott** saw two live moose while doing the Marathon, Ontario survey, and then one dead on his way home. **Monique Blais** reported a pack of wolves from the Rivière Gatineau route in Québec. William Korolyk saw a badger on Sheep Coulee in Alberta. **Rosamund Pojar** and assistant **Mick Murphy** heard a wolf howling right near the side of the road at stop six on the Mt. Morice route in BC.

On St-Antoine in Québec **Ronald Lepage** watched a Merlin capture a starling from amid a flock. **Marion Porter** saw a Bald Eagle harassing a river otter on BC's Saltspring Island route. ♪

BBS Participation

Increases in Manitoba, Newfoundland and Labrador

BBS observers made a strong showing in 2002, keeping our Canadian total runs up above the 400-route mark. Thank you to everyone! We have dropped off a bit since our grand peak of 461 in 2000 (see Figure 1.) Manitoba and Newfoundland and Labrador increased their number of routes returned in 2002 while other regions were close to the previous year's totals (see Table 1.) Numbers in the chart could vary from those given in coordinators' reports. Sometimes data come in after the coordinator has written the report. Other times their totals include routes they know were run but for which we haven't received data.

Please submit your data!!

A little field scouting tells us that a significant number of people run their routes but don't get around to turning in their data! We know it's great fun to do the survey, but why not add value to your time and effort? Please make your BBS contribution count. The BBS requires certain numbers of individuals in order to include a species in a trend analysis. We can't count your route as run until we have your data.

Your route could make the difference!

If you have data that you've put off sending in, now is the time to do it. No matter how old it is, we will eventually get it into the database. (We promise not to notice who you are.) However, your data are more useful if turned in by the data submission deadline. Late data could be left out of the current year's trend analysis. ♣

Figure 1: **BBS Participation 1966-2002**

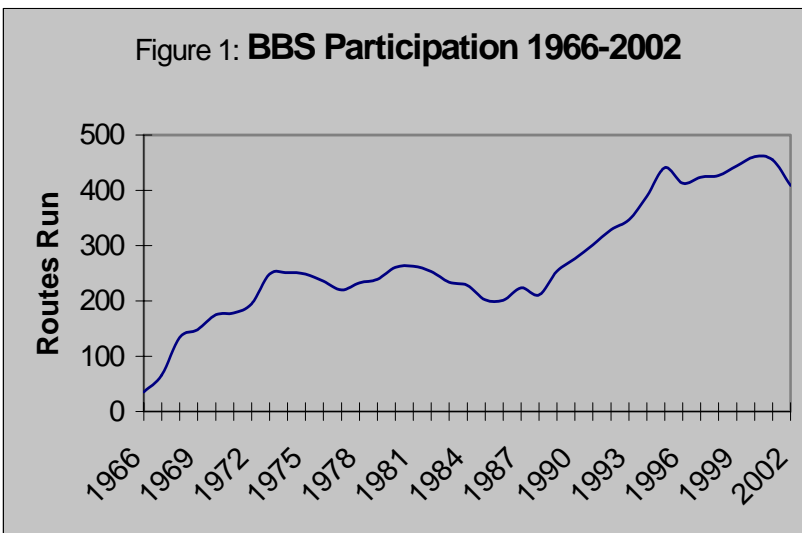


Table 1:
BBS Participation 1998-2002

Province or Territory	2002	2001	2000	1999	1998
Yukon	11	11	16	11	12
Northwest Territories and Nunavut	6	7	5	5	4
British Columbia	68	75	72	69	62
Alberta	79	92	87	83	85
Saskatchewan	30	40	36	34	27
Manitoba	48	44	47	38	45
Ontario	69	77	85	90	83
Québec	43	50	58	56	57
New Brunswick	22	23	22	18	17
Nova Scotia	23	25	25	29	26
Prince Edward Island	1	3	3	3	2
Newfoundland and Labrador	9	8	5	8	7
Total	409	455	461	444	427

Coordinators Report from the Provinces and Territories

Northwest Territories and Nunavut

Five routes were run in the NWT in 2002, along with the lone Nunavut route. The usual gaggle of species was peppered with a couple of unusual observations during what could be described as a fairly normal year.

The late spring had many birders wondering if their feathered friends would ever return. After several spring snowstorms, the survivors of this year's migration arrived a bit late. Numbers of most species seemed comparable to previous years' totals. Blue-headed Vireos were more prevalent than usual on the Fort Liard and Fort Simpson routes in southwestern NWT. Canada Warblers were also more common on the Fort Liard route than in the previous four years. **Dave Wilderspin** continues to find more Yellow-rumped Warblers every year on his Norman Wells route since starting eight years ago.

Mark Bradley recorded a Rufous Hummingbird on his Little Buffalo route near Fort Smith. Hummingbirds still have vagrant status in the NWT, and most "sightings" turn out to be hawk moths, so a confirmed record is unusual. Connecticut Warblers were seen again on the Fort Liard route, and (during other work) a female was observed trying the broken wing trick. It may become the next new breeding species added to the NWT list.

Michael Settingington ran his Maguse route again along the Hudson Bay coast. It appears as though he has the first King Eider sighting on a BBS route. Herring Gulls were the most common species on his route, and he only recorded five passerine species out of the 28 species noted.

- *Craig Machtans*

Yukon

This year, 12 routes were completed by seven dedicated observers. Species totals ranged from 18 on **Dave Mossop's** Arctic Circle route (this remote route on the Dempster Highway features "northern specialties" such as Long-tailed Jaeger and Common Redpoll) to 35 species on both **Ted Murphy-Kelly's** Finlayson Lake route and **Cameron Eckert's** Mt. McIntyre route. For the Mt. McIntyre route, which spans a wide range of elevations and features a high diversity of habitats and birds, numbers of species and individuals were both record lows this year.

Overall, numbers of birds recorded ranged from 161 individuals on **Helmut Grunberg's** Wigan route, which goes right through Whitehorse, to 372 individuals on Ted Murphy-Kelly's Simpson Lake route in the lush southeast forests. In southwestern Yukon, which has been home to large numbers of spruce bark beetles in recent years, **David Henry** is still recording Three-toed Woodpeckers on both the Jarvis River and the Klukshu route. **Mary Whitley** was lucky enough to encounter a magnificent Great Gray Owl on her Little Salmon River route. Dave Mossop's Eagle River route carries the distinction of having the most individuals of a single species this year, thanks to 62 obliging Fox Sparrows. Thanks to everyone for their participation in 2002!

- *Pam Sinclair*

British Columbia

A total of 77 routes were run in BC in 2002, the same as last year's record high, although we have data for only 65 of these routes as I write this. **Madelon Schouten** again did six routes and **Krista de Groot** did five; **Jack Bowling** and **Wayne Weber** also deserve mention with their three routes. **John Woods** took on a new route at Fletcher Lake and produced the only BBS White-winged Scoters in the province in doing so. We tallied 213 species in British Columbia in 2002, up from last year's 207 and the same as the year 2000 total.

Several observers noted a decline in the numbers of common species. American Robin is perhaps the best example of this; although it topped all species in total numbers (2,879 on 65 routes) these numbers were well down, with an average of only 44 birds per survey compared to 54 last year. Swainson's Thrush was second once again with 2,042 birds on 62 counts and didn't suffer the same percentage drop as did the robin, with 31 birds per survey compared to 34 last

year. Last year's third place species, Pine Siskin, slumped to sixth place this year, with only 11 birds per route (22 last year). Warbling Vireo took its place in third with a total of 1279 birds on 61 surveys.

Chris Siddle again had the high species total, but this year he shares that honour with **Robert Ferguson**. They both recorded 84 species on their Mabel Lake and Spillimacheen surveys respectively. Thirty species were seen on only one route, with **Bruce Bennett's** Pennington route (American Tree Sparrow, Bohemian Waxwing, Gray-cheeked Thrush and Lesser Yellowlegs) and **Laurie Rockwell's** Park Rill route (Yellow-breasted Chat, Lark Sparrow, Brewer's Sparrow, Grasshopper Sparrow) having the most "unique" species.

Swallows have been a group of concern over the past few years. It is heartening to note that only Bank and Northern Rough-winged Swallows showed declines this year in BC. The most frequently mentioned species with a perceived decline is Barn Swallow. However, this year an average of 3.8 were seen per survey versus only 2.6 last year.

- *Dick Cannings*

Alberta

The common complaint this year was the extreme dryness due to lack of rain, unusual low snowfall in the winter of 2001-02, and the low numbers of individuals on some routes. I too had expected most routes to have a significant reduction of numbers so I compared the three-year average of the routes run in 2002 to previous years. I found that while some routes had significantly fewer individuals, some routes had an increase in individuals.

Routes that had been run many times had new species. Of the 73 routes I have recorded, 41 of those had new species. Most dramatic was route 149, Sandy Lake, with six new species, and an increase of individuals. On average the route has 521 individuals but this year had 727. Route 139, Pickardville, had five new species. Routes with four new species were 116 Wigwam Creek, 141 Freeman Lake, 204 Twin Butte and 302 Legend. Five routes had three new species, 11 routes had two and 19 routes had one. Twelve routes had an increase of individuals, 58 routes were down and three were excluded, having been run only three years or less. No pattern seemed evident. Routes that had increases and decreases were nearly side by side.

Observers had the opportunity to use the GPS equipment sent out by CWS but it seems that many people have their own units or were too busy. I GPS'ed my route at the same time as it was run and found no difficulties. Next year I will do Windfall and of course remind others that the GPS equipment is available.

We say a fond farewell to **Bob Carroll** as he and his wife Jan have migrated to Victoria, BC Thanks for the years of service Bob, especially your work on Elk Island. Sadly, a long time participant passed away this year.

Lloyd Lohr ran his route Rowley for 25 years. He will be missed as a leader in the naturalist world. **Glen Rowan** has dropped out due to hearing problems. Thanks to all for your efforts in maintaining the BBS routes you have run.

Stefan Jungkind reports on his route at Warburg: *"The ever expanding coal mine is once again encroaching on the route. Stop #32 which last year was still possible to do (it was stop #33 that had to be changed), was now eaten up - quite literally - by the coal mine. The swamp, the woods and everything have disappeared and there are large 'mouthfuls' of the ground removed." On his Martin River route Stefan reports noise problems with logging and transformers along with habitat changes from the clear cutting: "A bigger impact is the logging that has already taken place. A number of stretches which used to be along mature mixed wood forest now run along this strip of tall trees (20 to 50 metres in width) bordering clearcuts that stretch for many acres. It is hard to tell from the road how extensive this is but recent aerial photos might give an indication of the degree of habitat change over the past few years."*

Teresa Dolman who runs the route at Waterton Lakes National Park reports: *"As you are aware, southern Alberta was hit by a series of snow and rain storms this spring. A snowstorm on May 22 caught many songbirds at the height of their migration. There were widespread reports of distress and mortality from Medicine Hat through to the mountains. On June 8-10 southern Alberta received 8 to 10 inches of rain, and in the mountains this precipitation came as heavy wet snow, 3 to 5 feet deep! In the previous 12 years that we have run the Waterton BBS route, the average number of species recorded has been 60. This year we recorded 59. The average total numbers of individuals has been 467; this year we had 266 (56% of normal.) The woods are quiet! Some species of songbirds were notably absent or low in number on our survey - Yellow-rumped Warbler, House Wren, Chipping Sparrow, Vesper Sparrow, Ruby-crowned Kinglet, Swainson's Thrush, MacGillivray's Warbler, Wilson's Warbler, Savannah Sparrow, Song Sparrow, junco - it will be very interesting to see if numbers can rebound in coming years. Let's hope so!"*

Ian Halladay gave comments on his route: *"The Brooks BBS was run successfully on June 6 (continuously from 1968 as was Thunder Lake - jp.) We had tried for the 2nd but were rained out. We had gone to Brooks in the evening of June 1 and stayed overnight. After we had dinner we stepped outside to find the air was completely calm and the sky rather grey. We must have been the only two people in Brooks who were hoping it did not rain. It started about midnight and at 3:43, when the alarms went*

off, it was pouring down. We went back to bed. It was still raining hard as we drove out of Brooks at 10:00 am. I phoned the director of the horticultural station who had arisen in time to have unlocked their gates for us to tell him it had not worked that morning and that we would be back. In the background I heard his wife say 'if it rains like this when they come to do their survey they can come anytime.' We returned on the 5th and ran the route on the 6th. It rained the following weekend as well."

When **Pat Mitchell** (observer) and **Sandra Foss** (driver) were preparing to run their route Sandra was unscrewing a thermos of hot coffee. She spilled a fair amount on her thigh. The car stopped and there was much leaping about. Sandra was seriously burned. They ran the route, however, before delivering Sandra to emergency. Sandra is now recovering from rather grim third degree burns. Tough bunch down here!

Beth MacCallum on her Mountain Park route reported grizzly bear, white-tailed deer, several least chipmunks and red squirrels.

- **Jack Park**

Saskatchewan

Only 30 BBS routes were completed this year down from the record high of 40 routes in each of the last two years. Although the reason for the decline was not readily apparent, the adverse weather that has recently plagued the Prairie provinces may have played a part.

Sandhill Cranes and Common Ravens continued their expansion onto the plains of Saskatchewan with one or more cranes on six routes and at least one raven on 15 routes. Grassland birds seem to be holding their own with Sprague's Pipits on 14 routes and Baird's Sparrows on nine. Although considered a "species of concern" by many, Clay-coloured Sparrows were recorded on all 30 routes.

All five species of Saskatchewan wrens were recorded, the rarest being a Rock Wren on **Harvey Johnson's** Gap Route. As usual **Mike Norton's** Dorintosh and Dore Lake routes hosted warblers both in variety and numbers. The Canada Warbler was, however, notably rare with only two on Dorintosh.

Out-of-range birds included a pair of Cinnamon Teal on **John Pollock's** Kenosee Lake route. The presence of a pair of these beautiful ducks suggests local breeding. A Prairie Falcon on the **Brenda Dale's** Dendron route was a good 100 km from the nearest known nesting area and is therefore be presumed a non-

breeding bird. The first Eastern Towhee in the history of the Saskatchewan BBS comes from **Ron Hooper's** Edenwold route. This bird was at the western edge of its range that extends into southeastern Saskatchewan.

GPS readings and, in most cases, associated habitat and stop descriptions, have been obtained for 36 of the 84 routes that have been surveyed at least once since the BBS began in Saskatchewan in 1968. As stop-by-stop bird data have now also been computerized for all routes for all years, Saskatchewan may be one of the first jurisdictions in North America able to relate long-term bird population changes to habitat change on a stop-by-stop basis.

- **Al Smith**

Manitoba

A record 48 BBS routes were surveyed in Manitoba during 2002, including one done by boat (Benson Bay), one by trike in a national park (Riding Mtn.), and one beyond the treeline in northern Manitoba (Churchill). One new observer (**Ron Austin**) was recruited, but several observers took on extra routes including **Peter Taylor** (who managed to do an amazing seven routes), **Dan Chranowski** and **Ryan Porteous** (who each ran three routes.) Nine other observers completed two routes each.

2002 was also a banner year for total number of bird species (217) recorded on BBS routes in Manitoba (although not quite as high as last year's record 220 species). On the Churchill route, **Bonnie Chartier** recorded 49 species, but 23 of these were "unique" to that count (not found on any other Manitoba route.) They include Pacific Loon, Snow Goose, Tundra Swan, American Black Duck, Greater Scaup, Common Eider, Long-tailed Duck, Red-breasted Merganser, Willow Ptarmigan, American Golden-Plover, Semipalmated Plover, Whimbrel, Hudsonian Godwit, Red-necked Phalarope, Parasitic Jaeger, Arctic Tern, Gray-cheeked Thrush, Blackpoll Warbler, American Tree Sparrow, Fox Sparrow, Smith's Longspur, Pine Grosbeak and Common Redpoll. Five other species that were unique to this route in 2001 failed to show up this year (White-winged Scoter, Least Sandpiper, Dunlin, Short-billed Dowitcher and Hoary Redpoll). Other species that made the 2001 Manitoba list but were not recorded in 2002 included Great Egret, Northern Goshawk, Osprey, Ring-necked Pheasant, Short-eared Owl, Whip-poor-will, Willow Flycatcher, Northern Rough-winged Swallow, Rusty Blackbird and Red Crossbill.

Unique species recorded on other Manitoba routes in 2002 included Eared Grebe (Riverdale – **Jean**

Horton), Western Grebe (Delta Beach – **Bob Jones**), Yellow Rail (Grass River – **Harvey Schmidt**), Caspian and Forster’s Tern (Hecla Island – **Bob Shettler**), Chimney Swift (Tyndall – **Rudolf Koes**), Black-backed Woodpecker (Bird River – P. Taylor), Northern Shrike (Minago River – P. Taylor), Say’s Phoebe (Grand Clairiere – **Ken De Smet**), Northern Mockingbird (Pope – R. Porteous), Golden-winged Warbler (Braintree – **Rob Parsons**), Pine Warbler (Bedford Ridge – **Dennis Fast**) and Baird’s Sparrow (Elva – K. De Smet).

Species found on two routes included Horned Grebe (3 birds total – Riverdale and Crane River), Hooded Merganser (3 – Bird River and Springer Lk), Ferruginous Hawk (3 – Elva and Grand Clairiere), Spruce Grouse (2 – Springer Lk and Bedford Ridge), Lesser Yellowlegs (migrants at Holland and Brandon Hills), Common Tern (9 – Hecla and Crane River), Great Gray Owl (2 – Twin Creeks and Grunthal), Three-toed Woodpecker (3 – Twin Creeks and Minago River), Yellow-throated Vireo (4 – Holland and Graysville), Golden-crowned Kinglet (9 – Grass River and Riding Mtn.), Nelson’s Sharp-tailed Sparrow (3 – Minnewakan and Hecla), White-crowned Sparrow (Benson Bay and Churchill), Chestnut-collared Longspur (25 – Elva and Grand Clairiere), and House Finch (2 – Beulah and Gretna).

Traditionally uncommon BBS birds for Manitoba that were found on three or more routes during 2002 included Broad-winged Hawk, Solitary Sandpiper, Great Horned Owl (singles on 3 routes for each), Turkey Vulture (7; 3 routes), Cooper’s Hawk (5; 3), Greater Yellowlegs (28; 3), Wilson’s Phalarope (9; 3), Ruby-throated Hummingbird (5; 5), Loggerhead Shrike (11; 3), Boreal Chickadee (5; 3), Brown Creeper (6; 3), Bay-breasted Warbler (7; 5), Wilson’s Warbler (9; 3), Scarlet Tanager (4; 4), Eastern Towhee (6; 3) and Indigo Bunting (6; 3). Unusually low totals were also recorded for Lesser Scaup (17; 4), Northern Pintail (26; 8), Bufflehead (9; 3), Common Nighthawk (9; 5), White-breasted Nuthatch (7; 4), Sprague’s Pipit (25; 4), Lark Sparrow (13; 5), Grasshopper Sparrow (12; 3) and Purple Finch (6; 4).

Birds that seemed more common than usual included Red-necked Grebe (on 7 routes), Bald Eagle (5 routes), Gray Partridge (6 routes), Wild Turkey (4 routes), Sandhill Crane (15 routes), Bonaparte’s Gull (5 northern routes), Red-headed Woodpecker (15; 5 routes), Pileated Woodpecker (14 routes), Yellow-bellied Flycatcher (6 routes), Philadelphia Vireo (10; 4), Winter Wren (60; 11), Northern Parula (16; 5), Palm Warbler (38; 7), Canada Warbler (19; 5), Orchard

Oriole (18; 6) and White-winged Crossbill (110; 5 routes).

The most diverse counts in Manitoba during 2002 were Hecla (B. Shettler) with 89 species, Crane River (D. Chranowski) with 87, Ruthenia (**Ken Kingdon**) with 84, and Beaconia (**Brad Carey**) with 81. Six other counts had 70 or more species (Holland – 79; Meleb – 78; Grand Clairiere – 77; Traverse Bay – 75; Graysville – 72; Braintree – 70). Crane River had the highest number of total birds (1,406), followed by Grand Clairiere (1,346), Grunthal (1,297), Elva (1,248), Beaconia (1,138), Hecla (1,092) and Kulish (1,020).

Many people wrote regarding challenges with roads, weather or traffic. **Rob Berger** (Meleb) and Peter Taylor (Traverse Bay) both ran their entire June 23rd routes in a blanket of fog -- didn’t seem to affect the singing, but not many birds were seen. Bonnie Chartier had snow blocking access to stop # 1 when she ran the Churchill route on June 20! And **Doug Barry** wrote to express his frustration at having his windshield broken by a truck pulling a boat that roared past near the end of his Bissett route. If that wasn’t bad enough, the same thing happened in 2001!

Brenda Schmidt (Grass River) wrote about an incident that many of us can relate to “...*we had to get up before 3:00 am to drive an hour to get to the starting point, and that is my excuse for the dumbest thing I have ever done. Well into the route, between stops, I left my treasured binoculars on the roof of the car! By the time I realized it we were almost at our next stop. Luckily enough they were right where I'd left them*”.

And for a different twist to the one that got away -- **Luc Blanchette** was happy to come up with 73 species on the Graysville route, but was disappointed to find out that after he left his wife was woken up by a Whip-poor-will calling just outside their Winnipeg residence – undoubtedly would have been a new bird for his yard list! Lastly, it took two mornings for **Ted Wilson** to get his Benson Bay route done. Weather wasn’t the problem, it was a lack of roads. Consequently, they do their entire route by boat!

But there were also many BBS triumphs. Peter Taylor recorded a total of 110 bird species, a black bear, and a moose on three routes in southeastern Manitoba, and felt so enthused he proceeded to do four more boreal forest routes in central Manitoba. On Minago River he was rewarded with an unusual record of a Northern Shrike (at stop # 33), and while searching for it after the count spotted a Northern Hawk Owl. He also came up with northerly records for Western Meadowlark (on Muddy Bay), Gray Catbird and Sharp-tailed Grouse (on Minago R.) and American Woodcock

near Grand Rapids. A “black morph” red fox on Minago River was interesting, but his “best-ever mammal sighting for a BBS” was a woodland caribou at Stop # 36 on Twin Creeks.

Bonnie Chartier also came up with a caribou at stop # 25 of the Churchill route, but this one was a barren-ground caribou. Rudolf Koes recorded Common Ravens at two stops along the Tyndall route and notes that the species has recently increased in farmland, parkland and prairie regions. Indeed, single ravens were also noted on the Brandon Hills and Grand Clairiere routes in southwestern Manitoba – well removed from boreal forest or northern areas where the species was formerly restricted to during the nesting season.

My thanks to all volunteers who contributed by observing or assisting on BBS routes in Manitoba during 2002. It is encouraging to see increased interest in the BBS in southern Manitoba, but especially gratifying to see improved coverage of BBS routes in northern and central Manitoba. And, with the type of unusual sightings coming from these remote areas, I only hope more people will take up the challenge of doing routes in central and northern Manitoba.

- *Ken De Smet*

Ontario

A spring to remember!

The spring of 2002 was definitely one to remember. It started out well as neotropical migrants arrived back to the breeding grounds on schedule, but a prolonged cold spell in mid-May left many wondering how this would affect breeding birds. I am sure those of you that visited local woodlots during this cold snap sure will agree that the woods were eerily quiet. The newly arrived warblers were hunkered down close to the ground, attempting to conserve energy. Many of the insects that birds rely on for food had died in the cold leaving many species in trouble. There were many reports of Tree Swallows and Purple Martins dying in their nest boxes.

Unpredictable climatic events such as these highlight the importance of long-term bird monitoring programs such as the BBS. Data collected by BBS participants allow biologists to assess the impact of these weather events on bird populations. It will be interesting to see whether numbers of insect-eating breeding birds declined in 2002 or if they were able to survive the cold spell (I hope so!).

In 2002, we welcomed **Tyler Hoar** who took on the Ashdad route near Ottawa, and **Kurt Hennige** took on a second BBS route (Picton). **Gert Trudel** offered to take on some northern Ontario routes. At the time that I am writing this report, data have been submitted for 62 routes, and a few more will likely trickle in.

When examining the 2002 data, I did notice that some of the more common species of breeding birds were recorded in low numbers this year. Golden-crowned and Ruby-crowned Kinglets, for example, were recorded on only six and eight of the 62 routes, respectively. Tennessee Warbler is another species that seemed to be present in low numbers; only four routes recorded this species. There were several warbler species that appeared on only one route in 2002.

Darlene Salter was fortunate to record the only Northern Parula and the only Palm Warbler on her Barren Brook route, and **Michael Enright** picked up an Orange-crowned Warbler on his Petawawa route! In southern Ontario, **William Lamond** observed the sole Blue-winged Warbler of 2002.

Several species with extreme southern or northern distributions were also absent this year, including Prairie and Hooded Warblers in the south and Blackpoll Warblers in the north. Also missing this year was the ever-mysterious Connecticut Warbler. In the most commonly recorded warbler category, top honours goes to the Common Yellowthroat (95% of routes), followed closely by Yellow Warbler (92% of routes) and Ovenbird (87% of routes). The mean number of species recorded per route was 62, and mean number of individuals was 754. There was no one species that was recorded on all routes, but Chipping Sparrow and American Robin came close, being recorded on 60 routes.

Long-term surveyor **Peter Middleton** has decided to retire from BBS this year. Peter surveyed his Woodford route for 21 years (1980-2001), and took on a second route (121, Rock Mills) in 1990, which he surveyed for 11 years. Even more remarkable is the fact that he only missed one year in the 21 years of running the Woodford route. Thanks Peter, for your extraordinary dedication to the Breeding Bird Survey! Thanks to all 2002 surveyors – keep up the good work!

- *Debbie Badzinski*

Québec

Once again I wish to welcome all new participants along with their assistants. And thank you to everyone who completed one or more surveys. In

2002 we completed only 43 routes compared to 51 in 2001. **Monique Blais, Jean Piuze, and Claude Roy** each ran three routes. **Pierre Bannon and Philippe Blain** each ran two. The highest number of species this year (84) was on the Bolton route with observer **Vincent Létourneau**, while the highest number of individuals was on **Michel Larrivée's** Cap d'Espoir route.

A new route, Lac Charland, was established north of Saint-Michel-des-Saints. Observer **Claude Arbour** found an Osprey, a Bald Eagle, three Bicknell's Thrushes and a Connecticut Warbler.

Pierre Bannon reported a lone Gray Partridge on the Verchère route. Sandhill Cranes were on two routes: five individuals on Amos (**Jacques Lemieux**) and another on Grand Lac Victoria in the La Vérendrye wildlife reserve (**Serge Lehouiller**.) Two Solitary Sandpipers were also on the route. **Margaret Arnaud** reported five Caspian Terns on the Lacolle route. On Bolton, Vincent Létourneau observed a rare Red-headed Woodpecker and a Yellow-throated Vireo.

Our only Northern Rough-winged Swallow was on the Glen Almond route in the Outaouais (**Michel Lalancette**.) Palm Warblers were on the Grand lac Victoria route (1 - Serge Lehouiller) and on St-Adelme, east of Matane (**Denis Desjardins**) **Jacques Lemieux** reported a Field Sparrow from the Amos route.

This year we were able to lend Geographic Positioning System (GPS) units to volunteers who wanted to record the geographic coordinates of their BBS route stops. The Québec BBS coordinators have three units you can borrow for this.

- *Daniel St-Hilaire*

Maritimes

For the 2002 season, Maritimers once again had to endure unpleasant weather during peak survey time. Wet, cool and windy weather caused many ardent volunteers to postpone plans to run their routes. Several simply ran out of time and were unable to complete the task. But in the large scheme of volumes of data and statistical analyses these anomalies iron themselves out and give little cause for concern.

Although there may still be a few outstanding routes to be entered into the database, here are some interesting statistics on the 2002 season:

- Highest number of species recorded – 88 Hampton, NB
- Lowest number of species recorded – 35 Dungarvon River, NB
- Highest number of individual birds recorded – 1245 Alberton, PEI
- Lowest number of birds recorded – 210, Dungarvon River, NB
- Species recorded on most stops on one route – Robin, 43 stops Londonderry, NS
- Most abundant species on one route – Herring Gull, 592, Richfield, NS

As for the rarest birds recorded on all routes, there was a 12-way tie for these species that were recorded only once:

Green-winged Teal – Joggins, NS
Northern Harrier – Cloverdale, NB
Sharp-shinned Hawk – McAdam, NB
Northern Goshawk – Walden, NS
Virginia Rail – Hampton, NB (only fifth time recorded on a BBS route in Maritimes)
Greater Yellowlegs – Larry's River, NS
Great Horned Owl – Trafalgar, NS
Whip-poor-will – Minto, NB
Pine Grosbeak – Pleasant Bay, NS
Warbling Vireo – Minto, NB
Field Sparrow – Minto, NB
House Finch – Grand Falls, NB

Looking back over the past 20 years there are some interesting differences and similarities in the abundance of birds on all Maritime routes combined:

House Sparrow, 1982 – 337; 2002 – 42
Canada Warbler, 1982 – 97; 2002 – 36
Brown-headed Cowbird, 1982 – 116; 2002 – 39
Double-crested Cormorant, 1982 – 154; 2002 – 154
Mourning Dove, 1982 – 6; 2002 – 335
Bobolink, 1982 – 932; 2002 – 97
Routes done, 1982 – 34; 2002 – 38 (to date)

And now I would like to thank two long-time veterans who are retiring from their routes in Nova Scotia – **Bernard Forsythe** and **Marc Adam**. We also have two new volunteers – **Mike LeBlanc** who will be running the Richibucto route and **Roy Lapointe** who will be running the Grand Falls route. Welcome both!

Dan Busby

Newfoundland and Labrador

First of all, I would like to thank our new participants in the province: **Jon Joy**, **Diane Burton**, **Nick Soper**, and **Siân French**. As more and more people become interested in birding in Newfoundland and Labrador, the easier it has become to find new volunteers to pick up on our dormant routes. Thank you to everyone who ran routes, and I sincerely hope that you will be available for next year and the years to come.

While only nine of 29 routes were run in 2002, it is an increase over past years, and we are hopeful that this number will increase even more in 2003. The month of June was somewhat dismal this year – cold and wet – and often times it was difficult to coincide a free day with a nice day to do the survey. Nonetheless, we persevered and even managed to come away with some interesting sightings.

There were some standouts for 2002. A Nashville Warbler was seen on the Burgeo Road. The Nashville is considered *Rare* in Newfoundland and Labrador with very few breeding records. Two Chipping Sparrows were seen, on the Burgeo Road route and the O'Regan's route in the Codroy Valley. Chipping Sparrows are listed as *Very Uncommon* in the Province, and it was a treat to have the BBS pick up on two. A Philadelphia Vireo was noted on the O'Regan's route as well, and they too are listed as a *Very Uncommon* species, with no, or at least very few, breeding records. Another point of interest was on the Bonavista route. A total of 21 American Bitterns were

noted along the roadway, in an area of the Province that I would not normally associate with American Bittern. Just goes to show how much more I need to learn.

On a final note about species, I would like to touch briefly on the Gray-cheeked Thrush. This is a species of special interest to me and my work. I have noted a drastic decline in numbers over the last several years in Newfoundland and Labrador. Once upon a time, I remember hearing the Gray-cheeks at dusk with regularity in many parts of the island, but now they are isolated and localized. You have to work to find a Gray-cheeked Thrush these days. Only two were observed this year, and both were in west-central Newfoundland. The Gray-cheeked Thrush is now worthy of note, and I would ask that anyone who sees or hears one around the Province to give me a call. I would be glad to hear about it.

There are still many available BBS routes here in Newfoundland and Labrador, and although we are working towards filling them, please pass this newsletter around among fellow birders, and have them give me a call if they are interested in a route of their own. Bill and I would not complain about the assistance. Until next year – Happy Birding!

- Peter Thomas

Do you have BBS action photos that you would like to share? The CWS site has an "Observer Contribute" section. Send in your poems, photos and anecdotes to share. The US BBS office has an Internet photo gallery and is collecting photos to use in publications and presentation. While the photos would be donated, the photographer will get full credit, of course! If you're interested, contact Keith Pardieck at Keith_Pardieck@usgs.gov, or phone (301) 497-5843.

Checklist changes

BBS data forms in Canada will soon have a different species name for the commonly-occurring **Common Snipe**. North American snipes were for many years considered to be the same species as their Eurasian counterpart. The American Ornithologists' Union's (AOU) Committee on Classification and Nomenclature has accepted evidence that the two should be separate species. The Eurasians keep the name **Common Snipe**. The AOU now names the North American breeding species **Wilson's Snipe**, a name which has historically referred to this group. ♪

West Nile Virus

This coming spring we are likely to hear more reports of the spread of West Nile Virus. Please remember to protect yourself from mosquito bites during your BBS runs. This Health Canada web site offers information on the disease's spread as well as personal safety advice and additional Internet links:
http://www.hc-sc.gc.ca/english/diseases/west_nile.html ♪

Volunteer Support for Surveyors

Many BBS volunteers have routes far from their homes. They drive long distances and sometimes must pay for overnight accommodation. Through Bird Studies Canada (BSC), surveyors can have the out-of-pocket expenses of running their routes treated as a charitable donation and thereby receive income tax receipts for them. BSC is a non-profit, non-governmental organization dedicated to the study and conservation of wild birds and their habitat in Canada.

Volunteers submit a record of their food, accommodation and mileage expenses directly to BSC, along with a cheque, payable to that organization, of an amount equaling the expenses. BSC then treats the cheque as a donation and issues the volunteer a tax receipt. Along with the tax receipt, BSC sends the volunteer a cheque equaling the amount of the donation. BSC ensures that the volunteer's personal cheque is not cashed until two weeks after issuing a BSC cheque to the volunteer. Although cumbersome, this process is required by Revenue Canada. The deadline to apply for tax relief is **December 1st** each year. BBS participants will receive Voluntary Support forms in their survey packages in the spring.

If you have questions regarding the program please contact:

Debbie Badzinski, Bird Populations Biologist, Bird Studies Canada, PO Box 160, Port Rowan, Ontario N0E 1M0. phone: (888) 448-2473. fax: (519) 586-3532. email: dbadzinski@bsc-eoc.org

Visit the BBS Web Sites!

Canada: http://www.cws-scf.ec.gc.ca/index_e.cfm (look for links to BBS)

Maritimes: <http://bbs.tantramar.com>

Ontario: <http://www.bsc-eoc.org/ontario.html>

North America: <http://www.mp2-pwrc.usgs.gov/bbs/>

PROVINCIAL AND TERRITORIAL COORDINATORS

Many thanks to the provincial and territorial coordinators for the efforts in 2002!

Please contact your provincial or territorial coordinator when:

- you want to take on more BBS routes,
- you want to pass your route on to someone else,
- you will not be able to run your route in a given year,
- you need advice on how to deal with a physical problem on your route, such as a bridge that no longer exists, or road construction, or
- you have questions about the species found on your route.

Yukon

Pam Sinclair
Canadian Wildlife Service
91782 Alaska Highway
Whitehorse, YT Y1A 5B7
(867) 667-3929
fax: (867) 667-7962
email: pam.sinclair@ec.gc.ca

**Northwest Territories and
Nunavut**

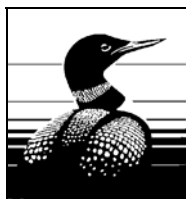
Craig Machtans
Canadian Wildlife Service
5204 50th Avenue
Suite 301
Yellowknife, NT X1A 1E2
(867) 669-4771
email: craig.machtans@ec.gc.ca

British Columbia

Dick Cannings
Bird Studies Canada
S11, C96, RR1
Naramata, BC V0H 1N0
ph/fax: (250) 496-4049
email: dickcannings@shaw.com

Alberta

Jack Park
10236-70 Street
Edmonton, AB T6A 2T4
(780) 469-8127
email: jlpark66@oanet.com



Saskatchewan

Alan Smith
Canadian Wildlife Service
115 Perimeter Road
Saskatoon, SK S7N 0X4
(306) 975-4091
fax: (306) 975-4089
email: alan.smith@ec.gc.ca

Manitoba

Ken De Smet
Wildlife and Ecosystems
Protection Branch, Manitoba
Conservation
Box 24, 200 Saulteaux Crescent
Winnipeg, MB R3J 3W3
(204) 945-5439
Fax (204) 945-3077
email: kdesmet@gov.mb.ca

Ontario

Debbie Badzinski
Bird Studies Canada
PO Box 160
Port Rowan, ON N0E 1M0
(888) 448-2473 (toll free)
fax: (519) 586-3532
email: dbadzinski@bsc-eoc.org

**Québec (east of St. Lawrence
River)**

Daniel Jauvin
67 Grande-terre
Saint-François-du-Lac,
QC J0G 1M0
(405) 568-2872
fax: (405) 568-0333
email: djauvin@sorel-tracy.qc.ca

**Québec (west of St. Lawrence
River)**

Daniel St-Hilaire
19 Connaught St.
Hull, QC J8Y 4C8
(819) 776-0860
fax: (819) 772-3974
email:
daniel.st-hilaire@mef.gouv.qc.ca

**Prince Edward Island, New
Brunswick, Nova Scotia**

Dan Busby
Canadian Wildlife Service
PO Box 6227,
17 Waterfowl Lane
Sackville, NB E4L 1G6
(506) 364-5037
fax: (506) 364-5062
email: dan.busby@ec.gc.ca

Newfoundland and Labrador

Peter Thomas
CWS - Environment Canada
Centre
6 Bruce Street
Donovans Industrial Park
Mount Pearl, NF A1N 4T3
Tel: (709) 772-4297
Fax: (709) 772-5097
email: peter.thomas@ec.gc.ca

THE 2002 TEAM

*Welcome to all first-year observers, farewell to retirees, and many thanks to everyone!
(If you submitted your data very late this year your name might not appear below -- but thanks anyway!)*

Newfoundland and Labrador: Lois Bateman, Diane Burton, J. Kevin Butler, Jonathan Joy, Jytte Selno, Neal Simon, Nick Soper, Gregory Stroud, Peter Thomas

Prince Edward Island: Sean Blaney

Nova Scotia: Paul Bogaard, Kathy Bunker-Popma, Sandy Burnett, Dan Busby, David Colville, Michael Crowell, David Currie, Albert Dean, James Elliott, Sylvia Fullerton, June Graves, Gerry Lunn, Blake Maybank, David McCorquodale, Ken McKenna, Richard Stern

New Brunswick: Christopher Adam, G. Marion Belyea, Roland Chiasson, Brian Dalzell, Marcel David, Tracey Dean, Roy Lapointe, Mike Leblanc, Michael Lushington, Ken Macintosh, Scott Makepeace, Dorothy McFarlane, Kent Orlando, Peter Pearce, Becky Whittam, James Wilson

Québec: Claude Arbour, Margaret Arnaudin, Pierre Bannon, Olivier Barden, Philippe Blain, Monique Blais, Peter Blancher, Roger Caissy, Jean Couchouron, David Covino, Donald Dallaire, Denis Desjardins, Alain Desrosiers, Constance Downes, Yves Gauthier, Bertrand Hamel, Daniel Jauvin, Michel Lalancette, Michel Larrivée, Robert Lebrun, Serge Lehouiller, Jacques Lemieux, Jean-Raymond Lepage, Ronald Lepage, Vincent Létourneau, Jean-Louis Martel, Harvey Mead, Desneige Perreault, Jean Piuze, Renaud Poulin, Claude Roy, Daniel St-Hilaire, Margo St-Louis, Christine Taylor, Claude Tremblay, Steve Wendt

Ontario: Marty Arnett, Christopher Bell, Lynda Bennett, Anthony Bigg, Peter Blancher, Albert Boisvert, Gerhard Bruins, Susan Bryan, Mark Chojnacki, Peter Coe, Floyd Cosby, Constance Downes, Larry Drew, Erica Dunn, Christopher Ellingwood, Michael Enright, Christopher Escott, Nicholas Escott, Karla Everard, Kathy Evoy, Donald Ford, Peter Good, Diane Haselmayer, Kurt Hennige, Joseph Johnson, Donald Kerr, William Lamond, Dan Lee, Simon Lunn, Douglas Martin, Hugh McArthur, Beverly McBride, Sheldon McGregor, Linda Melnyk-Ferguson, Drew Monkman, James Mucklow, Jean Niskanen, Lionel Normand, Sandra Parsons, Satu Pernenen, Steven Price, Peter Read, Sam Rosa, Darlene Salter, Mark Saunders, Ron Scovell, Rod Sein, Don Shanahan, Howard Shapiro, Doug Smith, Richard Tafel, Steve Thorpe, Rohan Van Twest, Van Waffle, David Wake, Ron Weir, Steve Wendt, Lori Wensley, Robert Whittam, Angie Williams

Manitoba: Ron Austin, Douglas Barry, Robert Berger, Luc Blanchette, Brad Carey, Bonnie Chartier, Daniel Chranowski, Andy Courcelles, Ken De Smet, Dennis Fast, Kenneth Gardner, Paula Grief, Chris Higgs, Jean Horton, Crawford Jenkins, Robert Jones, Ken Kingdon, Rudolf Koes, Wayne Neily, Robert Parsons, Raymond Pettinger, Ryan Porteous, Harvey Schmidt, Bob Shettler, Tim Sopuck, Peter Taylor, Adam Walley, Constance Will, A.E. Wilson, Margaret Yorke

Saskatchewan: P. Lawrence Beckie, Donna Bruce, Muriel Carlson, Philip Curry, Brenda Dale, Ronald Hooper, Stuart Houston, Brian Johns, Harvey Johnson, Suzanne Joyce, Maurice Mareschal, Mike Norton, Wayne Pepper, John Pollock, J. Frank Roy, Alan Smith, Guy Wapple, Don Weidl, Michael Williams

Alberta: James Allen, Peter Balagus, Reid Barclay, Barbara Beck, James Beck, Jenise Bidulock, Ron Bjorge, John Bovell, Duncan Bradley, Roger Brown, Robert Carroll, Linda Charest, Sheila Clark, David Cuthiell, Brenda Dale, Ross Dickson, Brenda Dobson, Teresa Dolman, Rodger Dunn, David Ealey, Gary Erickson, Janet Ficht, Lenora Flynn, Jim Goodwin, Stan Gosche, Graeme Greenlee, Robin Gutsell, Ian Halladay, Edmond Ted Hindmarch, Cedric Hitchon, Philip Horch, Jacques Hurabielle, Glen Hvenegaard, Stefan Jungkind, Joan Kerr, Jessie Kinley, Steve Knight, William Korolyk, Julie Lefebvre, Beth MacCallum, Avarad Mann, Mike McIvor, Gerald McKeating, Don Mills, Patricia Mitchell, Andrew Murphy, Mike Norton, Michael O'Shea, Ken Oakes, Jack Park, El Peterson, Jamey Podlubny, David Prescott, Richard Riddell, Blair Rippin, Michael Rogers, Irma Rowlands, Thomas Sadler, Andrew Slater, Darrell Smith, Milton Spitzer, Bill Taylor, Greg Wagner

British Columbia: Catherine Aitchison, David Aldcroft, Desmond Belton, Bruce Bennett, Ed Beynon, Jack Bowling, Richard Cannings, Chris Charlesworth, Kathleen Collins, Gary Davidson, Thomas Dickinson, Frank Doyle, Robert Ferguson, Steve Gniadek, Margo Hearne, Wendy Marshall, Ed McDonald, Carolyn McGhee, Ed McMackin, John McRuer, Pearl Morgenstern, Mark Phinney, Rosamund Pojar, Marian Porter, Allen Poynter, Evan Pye, Keith Riding, Anna Roberts, I. Laurie Rockwell, Greg Ross, Warren Schaffer, Madelon Schouten, Brian Scott, Chris Siddle, Darrell Smith, Elsie Stanley, Ray Sturney, Howard Telosky, Ruth Travers, William Tuck, Frances Vyse, Susan Walker, Michaela Waterhouse, Wayne Weber, Diane Weismiller, Allen Wiseley, John Woods, Ellen Zimmerman

NWT: Jamie Bastedo, Duncan Bradley, Craig Machtans, Michael Settingington, David Wilderspin

Yukon: Helmut Grünberg, David Henry, Dave Mossop, Edward(Ted) Murphy-Kelly, Pamela Sinclair, Mary Whitley



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