

BBS CANADA



A Newsletter for Cooperators in the Breeding Bird Survey of Canada

Canadian Wildlife Service, National Wildlife Research Centre, Hull, Québec K1A 0H3

WINTER 2001

Dear BBS participants,

The BBS leaped into the new millennium with a record participation rate of 455 routes run in 2000! Many thanks to all observers and their assistants. Special thanks to all the provincial and territorial coordinators and to Bev McBride for their work at recruiting new participants.

The computerized data-entry system continued to evolve and data entry went very smoothly this year. About 31% of observers entered their data over the Internet. This year we will be working on developing the French version of data-entry system. Of course, if you are not inclined towards the Internet you are always welcome to simply send in your data forms and we will enter the data in our office.

This year, with some brow-beating from Bev, we received quite a few data forms from previous years. Please remember that your data are always welcome in any format even if they are late!

Recommendations for improving BBS operations came from two sources in 2000. The first was the publication of the

report of the Peer Review Panel commissioned by the United States Geological Survey Patuxent Wildlife Research Center to review the scientific and operational aspects of the US Breeding Bird Survey. As a partner agency the Canadian BBS office participated in the review. In general, the BBS review was very positive and some 31 recommendations were made (for more details see page 6). During the last few months both the Canadian and the US BBS offices have been busy working on taskforces to implement these recommendations. We will keep you posted on our progress.

The second source of recommendations was the first ever US/CWS BBS Coordinator Meeting. Bev McBride was one of 30 persons who attended the meeting held at the Patuxent Wildlife Research Center in Maryland in August, 2000. The meeting generated much useful discussion that concentrated on the recruitment and training of BBS observers as well as other issues. The new ideas and feedback from the coordinators will help us improve the running of the BBS for coordinators and the volunteers (see page 6).

I'm looking forward to getting back to my BBS routes in spring 2001 and hope to hear from you then!

Sincerely,

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Recent Trends

Our statistician, Brian Collins, has been calculating population trends using the BBS data from 1967 to 2000. He has used a variety of time periods (e.g. 1990-2000, 1975-2000, 1967-2000), calculated trends for both individual species and for species grouped by both habitat and migratory pattern; and has grouped the data for Canada and for individual Bird Conservation Regions (BCRs, see page 7). In previous years we have used ecozones (see page 7) as the geographic units for analysis. However, in 1998 the North American Bird Conservation Initiative (NABCI) adopted the use of BCRs in order to develop a consistent spatial framework for bird conservation for North America. As more conservation groups use these boundaries we hope that the results among various datasets will be more comparable. In most cases, the BCR divisions are quite similar to the eight ecozones we have used as geographical units in Canada in the past.

Here we present the Canada-wide trends over the last 10 years for the 234 species for which there were sufficient data (Table 1). We hope to have the complete analysis available on the CWS website over the next few months. The number of species showing decreases and increases was approximately equal (52% declining) over the last 10 years. However only 77 of these showed statistically significant trends, meaning that for the other 157 species it is not possible to say definitively that the population changed. The proportion of population increases to decreases in the statistically significant group was similar with 55% of these species declining.

In most cases, these Canada-wide trends were similar to the species trends in each BCR or portion of the BCR within Canada. A few notable exceptions for those species that showed significantly increasing populations in their Canada-wide trends are: American Robins significantly declined in the Northern Pacific Rainforest; American Goldfinch declined in the Great Basin; and Mourning Dove declined in the Boreal Taiga Plains. Exceptions to species that showed significant population declines in their Canada-wide trends include: Orange-crowned Warbler significantly increased in the Northwestern Interior Forest; Western Wood-Pewee in the Great Basin, Killdeer in both the Northern Rockies and the Prairie Potholes; and Purple Finch increased in the Boreal Hardwood Transition. Similar to previous analyses, the grassland birds were the habitat group showing the greatest number of declines. Of the grassland species with statistically-significant trends, 87% were declining. Blackbirds stand out as the taxonomic group with the greatest number of declining species. All nine species for which Canadian trends were calculated (excluding orioles) showed declines, five of which were statistically significant.

Table 1: Trends for 233 Canadian Species, 1991 - 2000.

Species	# of routes used	trend	P ¹	Species		
Common Loon	224	-0.1		Lesser Scaup	114	-4.2
Pied-billed Grebe	89	3.6		Bufflehead	46	14.0 *
Horned Grebe	49	7.8		Common Goldeneye	53	9.4 *
Red-necked Grebe	51	-2.8		Barrow's Goldeneye	23	13.9
Eared Grebe	20	3.9		Hooded Merganser	23	-0.2
American White Pelican	25	2.50		Common Merganser	78	1.8
Double-crested Cormorant	65	19.3	*	Ruddy Duck	64	2.4
American Bittern	164	7.1	*	Osprey	69	6.6
Great Blue Heron	246	-4.6		Bald Eagle	53	1.7
Green Heron	22	-2.1		Northern Harrier	184	-2.6
Turkey Vulture	60	-6.1		Sharp-shinned Hawk	23	-3.5
Canada Goose	235	10.2	*	Broad-winged Hawk	42	7.3
Wood Duck	63	0.0		Swainson's Hawk	84	-7.4 *
Gadwall	106	-1.1		Red-tailed Hawk	272	1.5
American Wigeon	107	10.2	*	Ferruginous Hawk	18	-4.3
American Black Duck	62	8.9		American Kestrel	272	0.6
Mallard	338	1.6		Merlin	59	4.7
Blue-winged Teal	152	5.5	*	Gray Partridge	40	6.5
Cinnamon Teal	15	6.7		Ring-necked Pheasant	89	-1.6
Northern Shoveler	111	7.4	*	Ruffed Grouse	133	4.5
Northern Pintail	97	5.5		Sharp-tailed Grouse	24	-5.2
Green-winged Teal	100	5.9		Sora	182	0.2
Canvasback	43	9.5	n	American Coot	116	12.0 *
Redhead	58	-5.8		Sandhill Crane	51	41.5
Ring-necked Duck	58	2.8		Killdeer	399	-1.70 *
				American Avocet	42	3.6
				Greater Yellowlegs	18	0.7
				Lesser Yellowlegs	45	-6.9
				Solitary Sandpiper	21	-5.3
				Willet	94	4.5
				Spotted Sandpiper	213	-4.5 n

Upland Sandpiper	98	-3.5	n	Boreal Chickadee	97	2.9
Long-billed Curlew	30	2.1		Red-breasted Nuthatch	309	-5.1 *
<i>continued next page</i>				White-breasted Nuthatch	114	6.6 n
<i>Table 1 continued</i>				Brown Creeper	52	2.9
Marbled Godwit	102	2.9		House Wren	274	-1.5
Common Snipe	409	2.6	*	Winter Wren	274	1.5 *
American Woodcock	16	-18.6		Sedge Wren	65	12.1 *
Wilson's Phalarope	43	-0.1		Marsh Wren	69	3.4
Franklin's Gull	91	17.4	*	Golden-crowned Kinglet	197	-1.9
Bonaparte's Gull	16	7.7		Ruby-crowned Kinglet	287	0.6
Mew Gull	19	1.8		Eastern Bluebird	87	1.5
Ring-billed Gull	235	-4.9	*	Mountain Bluebird	89	2.3
California Gull	34	-5.8		Townsend's Solitaire	42	2.1
Herring Gull	134	-12.9	n	Veery	279	-1.9 *
Great Black-backed Gull	42	-5.8		Swainson's Thrush	325	-1.2 *
Common Tern	41	-27.3		Hermit Thrush	325	0.8
Black Tern	108	-8.1		Wood Thrush	113	2.6
Rock Dove	309	0.7		American Robin	552	0.8 *
Mourning Dove	351	2.7	*	Varied Thrush	87	-0.7
Black-billed Cuckoo	132	-1.7		Gray Catbird	262	0.0
Great Horned Owl	66	6.6		Brown Thrasher	172	-3.0
Common Nighthawk	73	-10.9		European Starling	432	-0.9
Chimney Swift	62	-7.8		Sprague's Pipit	51	-2.8
Ruby-throated Hummingbird	122	2.4		Bohemian Waxwing	16	-11.8
Calliope Hummingbird	19	-2.3		Cedar Waxwing	420	-0.1
Rufous Hummingbird	60	-9.0	*	Golden-winged Warbler	23	-9.8 n
Belted Kingfisher	198	-0.2		Tennessee Warbler	194	2.4
Red-headed Woodpecker	18	-2.9		Orange-crowned Warbler	146	-4.9 *
Yellow-bellied Sapsucker	226	4.2		Nashville Warbler	241	1.2
Red-naped Sapsucker	42	-6.4		Northern Parula	90	1.3
Red-breasted Sapsucker	24	2.1		Yellow Warbler	479	1.4
Downy Woodpecker	265	4.9	*	Chestnut-sided Warbler	219	-3.1 *
Hairy Woodpecker	273	2.3		Magnolia Warbler	229	3.0 *
Three-toed Woodpecker	16	-4.8		Cape May Warbler	74	8.7 n
Northern Flicker	482	-2.5	*	Black-throated Blue Warbler	103	3.4
Pileated Woodpecker	178	3.2		Yellow-rumped Warbler	379	-0.1
Olive-sided Flycatcher	197	-3.0		Black-throated Gray Warbler	16	-14.0 *
Western Wood-Pewee	143	-4.1	n	Black-throated Green Warbler	195	0.3
Eastern Wood-Pewee	175	-5.4	*	Townsend's Warbler	53	-0.9
Yellow-bellied Flycatcher	89	5.0	*	Blackburnian Warbler	151	0.3
Alder Flycatcher	379	-1.4		Pine Warbler	39	4.8
Willow Flycatcher	103	1.1		Palm Warbler	42	-0.9
Least Flycatcher	433	-2.3	*	Bay-breasted Warbler	74	-1.4
Hammond's Flycatcher	67	-2.4		Blackpoll Warbler	66	1.8
Dusky Flycatcher	58	-3.6		Black-and-white Warbler	249	-1.3
Pacific-slope Flycatcher	43	-3.1		American Redstart	311	0.0
Eastern Phoebe	253	-2.3		Ovenbird	303	-0.6
Say's Phoebe	17	-6.8		Northern Waterthrush	241	2.3 *
Great Crested Flycatcher	174	-2.4		Connecticut Warbler	44	-6.9
Western Kingbird	98	-6.7	n	Mourning Warbler	229	-4.3 *
Eastern Kingbird	323	-4.7	*	MacGillivray's Warbler	72	-1.9
Loggerhead Shrike	38	-1.7		Common Yellowthroat	467	0.6
Yellow-throated Vireo	19	-0.8		Wilson's Warbler	143	2.1
Cassin's Vireo	63	-6.0	*	Canada Warbler	116	-4.0 *
Blue-headed Vireo	181	3.3	n	Scarlet Tanager	83	0.2
Warbling Vireo	320	1.0		Western Tanager	98	3.3 n
Philadelphia Vireo	88	9.6	*	Spotted Towhee	51	-0.9
Red-eyed Vireo	438	2.1	*	Eastern Towhee	39	0.1
Gray Jay	161	-7.7	*	Chipping Sparrow	471	-0.5
Steller's Jay	39	-2.8		Clay-colored Sparrow	218	0.7
Blue Jay	305	4.4	*	Field Sparrow	61	-8.8 *
Clark's Nutcracker	17	5.6		Vesper Sparrow	264	-2.0 *
Black-billed Magpie	193	3.1	*	Lark Bunting	22	-17.4
American Crow	479	2.9	*	Savannah Sparrow	443	0.1
Northwestern Crow	21	-2.5		Grasshopper Sparrow	42	-13.5
Common Raven	403	0.1		Nelson's Sharp-tailed Sparrow	36	14.9 *
Horned Lark	167	-11.1	*	Baird's Sparrow	44	-9.2 *
Purple Martin	75	-0.7		Le Conte's Sparrow	119	2.3
Tree Swallow	454	-0.3		Fox Sparrow	74	6.9 *
Violet-green Swallow	59	-0.9		Song Sparrow	464	-0.6
Northern Rough-winged Swallow	88	-3.1		Lincoln's Sparrow	216	-3.6 n
Bank Swallow	181	-7.2	*	Swamp Sparrow	233	5.1
Cliff Swallow	267	-4.5		White-throated Sparrow	346	0.5
Barn Swallow	455	-5.1	*	White-crowned Sparrow	85	-4.0
Black-capped Chickadee	443	3.8	*	Dark-eyed Junco	233	-2.0 *
Mountain Chickadee	45	-1.1		McCown's Longspur	15	-8.1
Chestnut-backed Chickadee	28	-7.1		Chestnut-collared Longspur	29	-9.2 *

Northern Cardinal	57	6.0	n	Bullock's Oriole	21	-2.3	
Rose-breasted Grosbeak	274	-4.5	n	Baltimore Oriole	237	-2.0	
			<i>continued next page</i>	Pine Grosbeak	38	-14.7	n
<i>Table 1 continued</i>				Purple Finch	245	-6.0	*
Black-headed Grosbeak	34	6.0		Cassin's Finch	18	-1.6	
Lazuli Bunting	27	-1.1		House Finch	98	0.9	
Indigo Bunting	104	2.2		Red Crossbill	77	-0.7	
Bobolink	238	-4.3	*	White-winged Crossbill	105	4.6	
Red-winged Blackbird	471	-1.3	n	Pine Siskin	260	-5.2	*
Eastern Meadowlark	114	-1.7		American Goldfinch	408	1.8	*
Western Meadowlark	165	-2.1	*	Evening Grosbeak	213	-9.9	*
Yellow-headed Blackbird	131	-11.1	*	House Sparrow	331	1.0	
Rusty Blackbird	31	-21.6					
Brewer's Blackbird	216	-0.6					
Common Grackle	315	-0.5					
Brown-headed Cowbird	398	-4.4	*				

¹Statistical Significance: * indicates $P < 0.05$; n indicates $0.15 > P > 0.05$

What meets the eye ... and ear

Researchers rely on statistical analyses for a scientific look at how various species are faring. But how do bird numbers look to the casual observer, or to people who spend their time counting birds in the field? For a "snapshot" look at bird numbers, we include here some raw counts based on the BBS database. Table 2 shows the top 10 most frequently counted species on BBS routes for 1970, 1980, 1990 and 2000. Table 3 shows the species found on the most routes for the same years. These numbers do not necessarily reflect any real changes in population.

Table 2: Top 10 Species counted 1970, 1980, 1990 and 2000 (and number of individuals)

1970 (171 routes)	1980 (259 routes)	1990 (274 routes)	2000 (431* routes)
European Starling (12,041)	Red-winged Blackbird (13,977)	Red-winged Blackbird (12,259)	American Robin (17,819)
Red-winged Blackbird (8,822)	European Starling (12,193)	European Starling (11,200)	Red-winged Blackbird (16,194)
American Robin (7,350)	American Robin (10,913)	American Robin (10,576)	American Crow (14,879)
American Crow (6,042)	American Crow (6,042)	American Crow (7,837)	European Starling (13,399)
House Sparrow (5,465)	House Sparrow (6,404)	House Sparrow (6,404)	Savannah Sparrow (8,318)
Common Grackle (5,306)	White-throated Sparrow (5,905)	Song Sparrow (5,271)	Song Sparrow (7,761)
White-throated Sparrow (5,103)	Barn Swallow (4,944)	Savannah Sparrow (4,979)	Red-eyed Vireo (7,485)
Song Sparrow (4,567)	Song Sparrow (4,893)	Mallard (4,437)	House Sparrow (6,437)
Barn Swallow (3,998)	Common Grackle (4,622)	Barn Swallow (4,380)	White-throated Sparrow (6,393)
Savannah Sparrow (3,801)	Savannah Sparrow (4,479)	Horned Lark (4,137)	Mallard (5,617)

* While 449 routes were received for 2000, only 431 arrived and were entered by the 2000 data closing date. The rest will be processed with the 2001 data.

Table 3: Species found on the most routes, 1970, 1980, 1990 and 2000

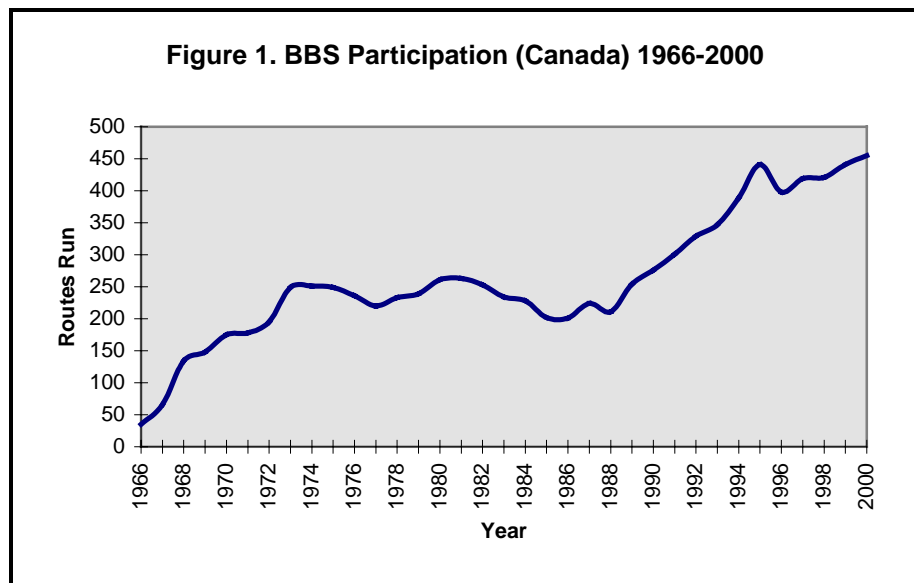
1970	1980	1990	2000
American Robin (167 routes)	American Robin (254)	American Robin (272)	American Robin (426)
American Crow (164)	American Crow (241)	Red-winged Blackbird (248)	American Crow (368)
Barn Swallow (163)	Barn Swallow (225)	Barn Swallow (241)	Yellow Warbler (357)
Song Sparrow (159)	Red-winged Blackbird (224)	Yellow Warbler (234)	Red-winged Blackbird (351)
Red-winged Blackbird (156)	Yellow Warbler (221)	American Crow (233)	Chipping Sparrow (248)
Tree Swallow (154)	European Starling (218)	Song Sparrow (228)	Song Sparrow (347)
European Starling (152)	Song Sparrow (216)	Tree Swallow (224)	Common Yellowthroat (340)
Common Yellowthroat (146)	Common Yellowthroat (216)	Chipping Sparrow (220)	Tree Swallow (328)
Savannah Sparrow (145)	Chipping Sparrow (212)	Savannah Sparrow (219)	Savannah Sparrow (322)
Brown-headed Cowbird (143)	Tree Swallow (210)	European Starling (217)	Red-eyed Vireo (314)

Table 4. Some infrequently-found species on the 2000 Canadian BBS (except those deemed to be migrants, vagrants or non-breeders). The number in brackets shows how many times the species is found in the database from 1966-2000)

One found	Two found	Three found	Four found	Six found
Common Moorhen (149)	Chukar (34)	Pigeon Guillemot (52)	Harlequin Duck (212)	Caspian Tern (146)
Carolina Wren (22)	American Dipper (58)	Great Cormorant (183)	Blue-winged Warbler (46)	Red-bellied Woodpecker (57)
Canyon Wren (7)	Spruce Grouse (72)	Black Oystercatcher (96)	Yellow-breasted Chat (52)	Yellow-billed Cuckoo (271)
Black Guillemot (79)	Least Bittern (18)	Prairie Falcon (27)	Red-shouldered Hawk (119)	Rock Wren (90)
Boreal Owl (7)	White-throated Swift (83)		Hutton's Vireo (140)	Northern Goshawk (150)
Sage Thrasher (1)	Mute Swan (6)			Blue-gray Gnatcatcher (35)
Willow Ptarmigan (50)	Rock Ptarmigan (4)			
Northern Saw-whet Owl (44)	Northern Hawk Owl (24)			
Burrowing Owl (50)	Great Gray Owl (38)			
Northern Pygmy-Owl (38)				
Red-necked Phalarope (86)				
Northern Bobwhite (680)				
Golden-crowned Sparrow (274)				

Some species are simply not readily detected on the BBS, either because there aren't very many of them in Canada, because they are very still and quiet during BBS hours, or because not many BBS routes go through their habitat. Table 4 shows species that were found only once, twice, three, four or six times on the Canada-wide BBS in 2000. There was no species found exactly five times. The table also shows the number of times the species was found in the database for all years. Of special note, **Peter Read** found a Northern Bobwhite on his Strathroy route in southern Ontario. This is the first time one has been reported on a Canadian BBS route since 1991. 🦋

A Great Turn-out for 2000!



Since 1996 we have gradually increased BBS coverage each year (see Figure 1). Now we have passed the peak that we reached in 1995 and 1999, with 455 routes received this year. In the last two years we received several late returns, so we have added to our totals for each year since 1996. Table 5 shows the number of BBS routes run in each province or territory since 1995.

The importance of being on time

In 1999 and 2000 we received quite a few BBS returns that were overdue by a year or more. We very much thank everyone who took the time to send in their late data. It can always be added to the database.

However, it is much better if we receive data by the specified deadlines for mailing or for Internet data entry. We put the data through a rigorous series of tests and error checks (see page 8) before releasing them to the public. Therefore, it

Table 5. Number of routes run per province/territory 1995-2000

Province or Territory	2000	1999	1998	1997	1996	1995
Yukon	16	11	12	14	13	15
Northwest Territories	5	5	4	2	1	1
British Columbia	67	68	62	59	58	64
Alberta	88	84	84	81	77	91
Saskatchewan	36	31	27	27	23	28
Manitoba	47	38	45	45	42	40
Ontario	82	90	82	83	90	96
Québec	58	56	56	62	52	60
New Brunswick	23	18	15	15	14	15
Nova Scotia	25	29	26	28	23	22
Prince Edward Island	3	3	2	2	2	2
Newfoundland	5	8	6	5	3	7
Total	455	441	421	423	398	441

takes several months for all data to be entered, processed and vetted. Ideally, a year's data would all be entered and processed at one time so that the data set for a given year would not change in the future. It is unlikely that the addition of one more route to a year's data set would actually change a population trend, but it could make the difference in whether or not a trend is statistically significant. It could also make the difference between whether or not a given species can be included in a set of trend analyses. A species must be recorded on more than 15 BBS routes in all years, with a total of at least 40 individuals, in order to be included in BBS trend analyses.

BBS Undergoes Peer Review

The BBS received a formal review by a panel of experts from Canada and the U.S. during 1999. The Peer Review Panel released their report, *A Programmatic Review of the North American Breeding Bird Survey*, in February 2000. Several recommendations apply specifically to the US BBS operations, others to the relationship between the Canadian and US BBS, and others to the whole program.

From the reports preamble: "The tremendous success of the BBS program, both in participation and in demand for BBS products, has necessitated adoption of modern information management methods. Because BBS has been accepted as the primary source of trend information for landbirds in North America, its results are increasingly considered in funding and management decisions, focusing greater attention than ever on the scientific quality and operations of BBS. A peer review of the entire program at this stage of its development is therefore particularly relevant."

The panel addressed and gave prioritized recommendations on such matters as:

- biases caused by doing BBS surveys from roadsides rather than away from roads,
- collection and use of habitat information,
- effect on trends when routes in populated areas are discontinued due to too much traffic,
- factors that might influence the probability of a species being detected,
- ways to increase observer participation in the BBS in preparation for its anticipated growth in scale and intensity,
- how Internet-based analysis tools should be presented and maintained,
- integration of BBS data with other data and research,
- handling "observer effects" - differences among observers and in the same observer over time - in relation to the data collected, and
- increasing BBS geographic coverage and extending coverage into Mexico.

We never doubted this for a moment, but here's something that should make everyone happy: the BBS was seen to provide "an extraordinarily high rate of return to American and Canadian taxpayers for the level of public funding expended."

The whole peer review report is available on the Internet at:

<http://www.pwrc.usgs.gov/bbs/bbsreview/> ♪

Do you have BBS action photos that you would like 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.

First North American Coordinators' Meeting

In August 2000 the US BBS office organized a meeting and workshop for BBS state, provincial and territorial coordinators. It was an excellent chance for coordinators, staff and a representative from the American Birding Association (ABA) to share experiences and to learn from each other.

Several main discussion topics resulted in some directions and recommendations for the coming years:

- BBS observers are already highly-skilled, but we should develop programs to help them maintain their excellence.
- Recruiting, keeping and recognizing volunteers is a very high priority.
- Provincial, territorial and state coordinators need support from the national BBS offices.
- We can benefit by working with birders' organizations such as the ABA.

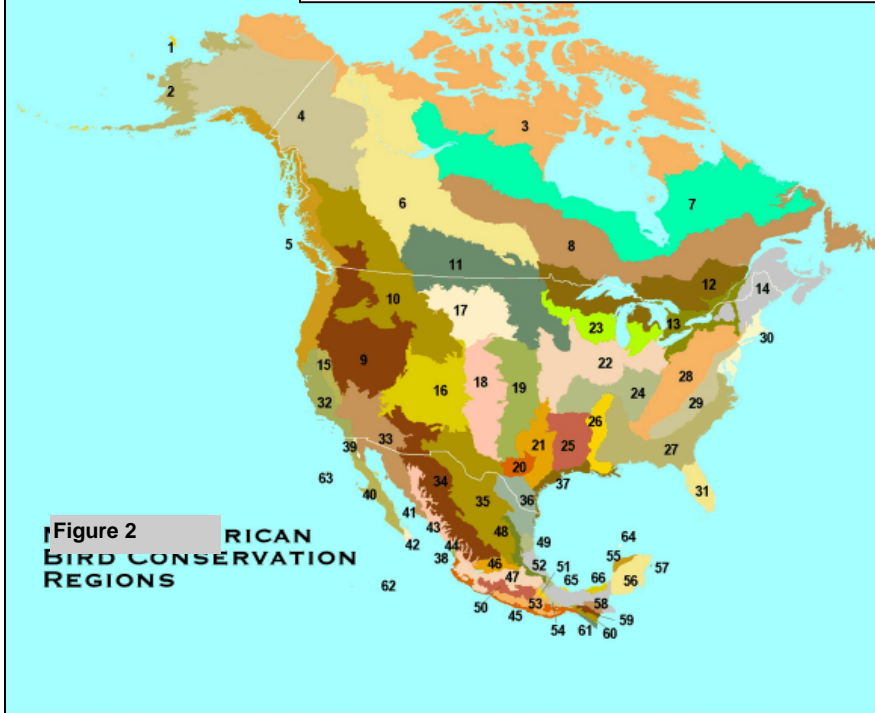
The meeting was well-attended: 27 participants included three Canadian BBS representatives. Al Smith (Saskatchewan) was the only provincial coordinator able to attend. Prairie region CWS songbird biologist Brenda Dale attended as well. Twenty-one US state coordinators represented most corners of that country. ♪

Bird Conservation Regions put Canada, Mexico and the United States on the same scheme.

The North American Bird Conservation Initiative (NABCI) is a coalition of Canadian, Mexican and U.S. organizations involved with bird conservation. Recognizing that bird distributions and movements cross international boundaries, they have developed a system of ecological designations to allow for comprehensive planning across species' entire range.

The BBS relies on such divisions to look at bird species in their relevant habitat and ecological context. In Canada, until recently, we have been using designated

Ecozones. The new Bird Conservation Regions (BCRs) are similar to, but not identical to, that system. The United States had previously used units called Strata. With the adoption of BCRs, both countries as well as Mexico will be using the same system of ecological zoning. Figure 2 shows the current version of the BCRs, many of which cross international borders. There are 12 BCRs in Canada.



KEY TO BCRs:

- | | | |
|--|--|--|
| 1-ALEUTIAN/BERING SEA ISLANDS | 24-CENTRAL HARDWOODS | 48-SIERRA MADRE ORIENTAL |
| 2-WESTERN ALASKA | 25-WEST GULF COASTAL PLAIN/OUACHITAS | 49-PLANICIE COSTERA Y LOMERIOS SECOS DEL GOLFO DE MEXICO |
| 3-ARCTIC PLAINS AND MOUNTAINS | 26-MISSISSIPPI ALLUVIAL VALLEY | 50-CUENCA DEL RIO BALSAS |
| 4-NORTHWESTERN INTERIOR FOREST | 27-SOUTHEASTERN COASTAL PLAIN | 51-VALLE TEHUACAN-CUICATLAN |
| 5-NORTHERN PACIFIC RAINFOREST | 28-APPALACHIAN MOUNTAINS | 52-PLANICIE COSTERA Y LOMERIOS HUMEDOS DEL GOLFO DE MEXICO |
| 6-BOREAL TAIGA PLAINS | 29-PIEDMONT | 53-SIERRA MADRE DEL SUR |
| 7-TAIGA SHIELD AND HUDSON PLAINS | 30-NEW ENGLAND/MID-ATLANTIC COAST | 54-SIERRA NORTE DE PUEBLA-OAXACA |
| 8-BOREAL SOFTWOOD SHIELD | 31-PENINSULAR FLORIDA | 55-PLANICIE NOROCCIDENTAL DE YUCATAN |
| 9-GREAT BASIN | 32-COASTAL CALIFORNIA | 56-PLANICIE DE LA PENINSULA DE YUCATAN |
| 10-NORTHERN ROCKIES | 33-SONORAN AND MOJAVE DESERTS | 57-ISLA COZUMEL |
| 11-PRAIRIE POTHoles | 34-SIERRA MADRE OCCIDENTAL | 58-ALTOS DE CHIAPAS |
| 12-BOREAL HARDWOOD TRANSITION | 35-CHIHUAHUAN DESERT | 59-DEPRESIONES INTERMONTANAS |
| 13-LOWER GREAT LAKES/ ST. LAWRENCE PLAIN | 36-TAMAULIPAN BRUSHLANDS | 60-SIERRA MADRE DE CHIAPAS |
| 14-ATLANTIC NORTHERN FOREST | 37-GULF COASTAL PRAIRIE | 61-PLANICIE COSTERA DEL SOCONUSCO |
| 15-SIERRA NEVADA | 38-ISLAS MARIAS | 62-ARCHIPIELAGO DE REVILLAGIGEDO |
| 16-SOUTHERN ROCKIES/COLORADO PLATEAU | 39-SIERRAS DE BAJA CALIFORNIA | 63-ISLA GUADALUPE |
| 17-BADLANDS AND PRAIRIES | 40-DESIERTO DE BAJA CALIFORNIA | 64-ARRECIFE ALACRANES |
| 18-SHORTGRASS PRAIRIE | 41-ISLAS DEL GOLFO DE CALIFORNIA | 65-LOS TUXTLAS |
| 19-CENTRAL MIXED GRASS PRAIRIE | 42-SIERRAS Y PLANICIES DEL CABO | 66-PANTANOS DE CENTLA-LAGUNA DE TERMINOS |
| 20-EDWARDS PLATEAU | 43-PLANICIE COSTERA, LOMERIOS Y CANONES DE OCCIDENTE | 67-HAWAII (not shown) |
| 21-OAKS AND PRAIRIES | 44-MARISMAS NACIONALES | |
| 22-EASTERN TALLGRASS PRAIRIE | 45-PLANICIE COSTERA Y LOMERIOS DEL PACIFICO SUR | |
| 23-PRAIRIE HARDWOOD TRANSITION | 46-SUR DEL ALTIPLANO MEXICANO | |
| | 47-EJE NEOVOLCANICO TRANSVERSAL | |

What happens once you send us your data?

It takes about six months from the day a BBS survey is run until the day we present the data on the BBS Internet site for public access. What happens in the interim? From late June to mid-July, most Canadian BBS returns for the year arrive at our office. During this time many observers also

What about ***?

Sometimes observers see a triple asterisk (***) beside one or more species on the verification version of their BBS data. This indicates a species that is out of its normal geographic range. At this time, a species will receive this designation if it is not normally expected in the given province or territory. We request that observers send us a report verifying that they did indeed encounter the species and how they identified it. If you have sent in such a report you do not need to send another one if the same species is flagged on your route again.

enter their own data over the Internet. This year they entered 31% of routes electronically compared to 25% last year. All of the BBS returns that arrive on paper are first sorted and reviewed. We check to make sure that the data forms are suitable for scanning. Scanning is a process whereby the forms are fed into a machine that reads the information off them and stores it in a computer database.

Meanwhile, if you enter your data over the internet, it is added to the same temporary database that holds scanned data and that entered from our office. the

Most of the filled-in forms we

receive are suitable for scanning. However, we have to enter your data over the Internet ourselves if scan forms are somehow messed up with spilled coffee or squashed mosquitoes (true!), printing is too faint for the scanner to read, data are given in tick marks or Roman numerals instead of Arabic numerals, - data are submitted on forms other than the standard scan forms, the cover page is missing, the corner registration marks have been obliterated by staples or tears, or receive it too late in the year. In 2000 40 routes were unsuitable for scanning and were entered over the Internet by the Canadian BBS office.

Then we review the forms to make sure all the information has been filled in correctly. We check that species written in by hand are legible and conform to the recent version of the American Ornithologists' Union (AOU) checklist or the BBS species list. If necessary we contact you for clarification. All the data forms are sorted numerically, that is, within each province by number and then by route number. We send them in a batch to our colleagues in the US who scan them for us. We also send along any explanatory notes the you might have sent, and any field notes that accompanied the final data. Later in the summer we send down another batch or two for any late-arriving routes.

The US office scans about 60 routes at a time. The scanner it looks like a small photocopier. A special software package using a technique called Optical Character Recognition interprets what is written on the forms. After scanning we need to verify the data have been read correctly. This process is governed by the software. When we verify data for a route at this stage we are presented with an image of your scan forms on our computer screen. Any character that caused uncertainty for the scanner software is highlighted in yellow. We go through all these highlighted records to compare them against the original data forms. We can manually enter what should appear in the space. We also enter the AOU numbers for written-in species at this stage.

There are many other data checking and verification mechanisms. Observers will recall that we ask them to proofread their entered data. People who mail in their forms wait until we have processed data to a certain degree and mail out verification forms in bulk. If we have an email address for you, we will send you an email notice saying that you can review your data over the Internet. It is extremely valuable and useful to us when observers take the time to double-check their data after they have been entered. In fact, while it is not yet formalized in our database system, entered data which have subsequently been verified by the observer are of a higher quality than those that have not.

Before it is finally released to the public, all BBS data are run through up to 20 different tests. We look for species that appear to be out of their geographic range, unusually large counts of a given species, and dates and weather conditions that do not fit into the allowable range. Each questionable item is reviewed by a BBS staff person to see if there has been a data entry error. This is why it is so important for observers to send us a copy of their field sheets when they enter data over the Internet. We need to look at the field sheets to see if we have the correct data in the database. ♪

Field Notes

While scouting a route in northern Ontario near Dryden, **Darlene Salter** saw a flock of Black Terns. Too bad they didn't reappear for the official survey. She also found an active Red-tailed Hawk nest.

A Willow Flycatcher was a rarity on **Richard Elliot's** Bedeque route on Prince Edward Island. Two individuals were present at two different stops. He and assistant **Tony Erksine** had opportunities to compare the calls with those of nearby Alder Flycatchers. The species does turn up in the province, but not often. The Maritimes Breeding Bird Atlas shows four records for PEI, one with confirmed breeding. On the Dundas, PEI route Richard and Tony lost 25 minutes when they got stuck in mud. A farmer came to their rescue, and they completed their stop while they waited for him to arrive!

Hank VanderPol and his assistant encountered lots of activity – and noise – when they did the Port Renfrew route. After struggling with noise from water run-off on most of the route they were rained out after stop 43. He mentions that traffic noise is increasingly a problem on this route because of hikers West Coast Trail hikers heading for the town. This sounds like a traffic situation that could be as bad or worse on Sundays than on weekdays. They also met three bears (*the* three bears?) which were, he says, “all friendly as west coast bears tend to be.”

Madelon Schouten knew that Say's Phoebes nested along her Princeton route in southern BC. In 2000 she finally saw them while doing her survey and was able to record them there for the first time. On the same route she was treated to a spectacular thunderstorm. She paused in her survey, per the BBS instructions, but noted that the birds continued to sing or call in spite of the storm. Gray Catbird was a first this year on her Bromley route.

Allen Poynter and assistant were a little apprehensive about heading out to the new Coombs, BC, route with binoculars and clipboards. It is a well-known marijuana growing area. However, all went well, and they were amused by full-volume roosters at 14 stops, peacocks at four stops and a turkeys at one stop.

Larry Drew sent along a photo of a snapping turtle he saw laying eggs on the roadside of his Kent Bridge route in southern Ontario.

BBSers who work in remote areas have challenges that many of us don't come close to having to meet. **Dave Wilderspin** does the Norman Wells route in the Northwest Territories by all-terrain vehicle (ATV). When his assistant had to cancel on him at the last minute this year he was concerned not only about getting all the data written down properly, but with what might happen if he were to get the ATV stuck in mud way out of town while all alone. Fortunately he found another helper at the last minute. Clay-coloured Sparrow was a new species for the route this year. Unlike most years, he counted more Hermit Thrushes than Swainson's Thrushes.

Clay-coloured Sparrow was also a new species for **Christopher Escott** on the Streetsville, Ontario route, as was Ruffed Grouse. He was pleasantly surprised by Northern Mockingbirds for the second year in a row. He recorded no Northern Flickers for the first time in 25 years, and it has been three years since he recorded Alder Flycatcher. Christopher points out this was the 32nd consecutive year that this route has been run. There have been only three observers in all those years – **Robert Bateman** for 17, **Bob Curry** for eight, and seven for Christopher.

Claude Roy reported a handsome adult Bald Eagle on the Lac Arnold route in southern Quebec. He says they have to be very careful on the quiet road approaching the lake. In the early morning there are dozens of hares, woodcocks and robins on the road. He and his assistant heard coyotes at two stops on the Lourdes route. ♪

Will you be working on a provincial or territorial breeding bird atlas this year? Remember that the BBS and the atlases are complementary sources of data. If you are atlassing, it's important to do your BBSs routes too.

Coordinators Report from the Provinces and Territories

Northwest Territories and Nunavut

The few talented souls capable of running BBS routes were out again in the NWT. There were no Elegant Trogons (should I stop hoping?) or other exotic species, but the usual collection of trillers kept everyone busy. No one reported anything out of the ordinary on their routes this year, so perhaps it would be interesting to describe what folks are typically hearing and seeing north of 60°.

We ran five routes this year, with five observers. We hope to increase this in future years given the necessity of boreal forest monitoring, but there is very small pool of observers to attract to the program. With luck we could run another three to four routes that have already been established.

Several species are detected on all the routes run in the NWT, spanning the Fort Smith/Yellowknife region west and north to Norman Wells. They include Common Snipe, Northern Flicker, Alder and Least Flycatcher, Gray Jay, Common Raven, Ruby-crowned Kinglet, Swainson's and Hermit Thrush, American Robin, Tennessee Warbler, Orange-crowned Warbler, Yellow-rumped Warbler, Chipping Sparrow, Fox Sparrow, Lincoln's Sparrow, White-throated Sparrow and Dark-eyed Junco -- a very "boreal" set of species.

There are usually 45 to 60 species identified on any one route in any one year. Most of the species and nearly all the numbers are from the landbird group. Typically the NWT routes have 450 to 700 individuals identified, and a recent high was 824 (near Yellowknife).

The overwhelming majority of birds seen on any route comes from a relatively small number of common species. The common species are the ones mentioned above and on all routes the thrushes and sparrows carry the day for totals. On individual routes, there are some other hotspots for species. Near Wood Buffalo National Park many Tennessee Warblers are usually seen. On the Fort Providence route Tennessees are again very numerous, but there is a high number of Yellow-rumped Warblers, as there is on the Norman Wells route. On the Ingraham Trail route near Yellowknife there are more ducks, given the prevalence of water bodies on the Canadian shield. There are also many Orange-crowned Warblers. Way out west in Fort Liard the Tennessee is enjoying a Spruce Budworm peak, and (interestingly) Magnolia Warblers are nearly ubiquitous.

- *Craig Machtans*

Yukon

This year the Yukon experienced a late spring followed by a cool, wet summer. The cool weather did not deter our seasoned surveyors, or the newcomers to Yukon

BBS routes. **Amélie Rousseau** found the land of Townsend's Solitaires (4 in total) this year on the Otter Falls route. **Mike Gill** found the heart of Yellow-shafted Flicker country with 13 of them on his Aishikik route. **Dave Mossop** was again treated to a Short-eared Owl on the Arctic Circle route. **Helmut Grunberg** once again found a Blue-headed Vireo on his Rancheria route, as well as an American Redstart. **Mary Whitley** topped the list for Orange-crowned Warblers – 11 on the Little Salmon route.

Pam Sinclair topped the total number of species with 50, including a MacGillivray's Warbler. **David Henry** had four species of woodpeckers on the Jarvis River route. **Del Buerge** was treated to a Merlin on his route in central Yukon, while **Ted Murphy-Kelly** turned up some exciting southeast species on the Simpson Lake route including Rose-breasted Grosbeak, Magnolia Warbler and White-throated Sparrow and, on the Finlayson Lake route, Swamp Sparrow. **Cameron Eckert** once again turned up a Townsend's Warbler on the Mt. McIntyre route, but the Nashville Warbler of 1999 was nowhere to be seen.

Thanks to all the participants in the Yukon BBS, especially the newcomers.

- *Wendy Nixon*

British Columbia

At least 75 routes were run in British Columbia in 2000, up again from last year's record high of 71. **Madelon Schouten** topped the effort list as usual with five routes, down one from her usual six--apparently her Coquitlam route was too noisy and dangerous to complete. Honourary mentions go to **Doug Leighton** who completed four routes and to **Gary Davidson** who did three.

With results of 66 routes in, a total of 213 species were reported, one more than in 2000. Two good species at opposite ends of the province are worth noting -- a Gray-cheeked Thrush tallied by **Bruce Bennett** in the far north at Pennington and a Sage Thrasher heard at Oliver by **Syd Cannings**. The top three species were again American Robin, Swainson's Thrush and European Starling, though numbers of the latter two species are down considerably from last year. American Robin was seen on all 66 routes reporting so far.

I've had a number of new observers step forward for routes in 2001, so we hope to see another increase in routes this coming year. Thanks again to all observers for your hard work.

- *Dick Cannings*

Alberta

Fifty-two participants responded to an occupational survey for this year's newsletter. The results are as follows: Biologist (8), Landscaper (1), Mathematics Instructor (1), Computer Instructor (1), Cabinet Maker (1), Church Caretaker (1), Civil Engineer (1), Computer Consultant (3), Ecological Consultant (1), Emergency Survival Instructor (1), Environmental Consultant (1), Environmental Field Technician (1), Environmental Research Technician (1), Farm Marketing Representative (1), Fisheries Technician (1), Geologist (1), Grounds Crew Foreman (1), Home Manager

(1), Lab Consultant (1), Lab Technician (1), Legal Assistant (1), National Park Warden (1), Non-committal (3), Non-game Biologist (1), Operations Team Leader (1), Park Planner (2), Pharmacist (1), Professional Musician (1), Professor and Department Chair, University (1), Program Chair, Northern Alberta Institute of Technology (1), Range Officer (1), Research Scientist (1), Resource Manager (1), School Librarian (1), Senior Administrator, Public Schools (1), Teacher (2), Teacher/Administrator (1), Telephone Installer (1), University Professor (1), Waterfowl Biologist (1), Wildlife Biotechnician (1), Wildlife Consultant (1).

If you add up these occupations you will find more than 52. Several observers have more than one vocation and change their jobs with the season. Retired people make up 21.2% of observers, while 1.9% are semi-retired and 76.9% are not retired. Observers who do their BBS with assistants all the time account for 59.62% of observers, while 7.69% have assistants most of the time, 9.62% sometimes and 23.07% never.

- *Jack Park*

Saskatchewan

Aside from providing important trend information, data from the Breeding Bird Survey furnish us with important distributional information. Shifts in distribution often indicate population changes in response to environmental factors such as change in climate or habitat. Some examples from the 2000 Saskatchewan BBS illustrate these points. The presence of our only Yellow-breasted Chats on the Biggar and Asquith Routes might be regarded by some as evidence of climate warming. The continued reconquest of the parklands and prairies by the Common Raven (eight birds on Asquith route and one well into the grasslands on the White Bear Route) may indicate habitat change. On the other hand, records of Eastern Towhee from the Theodore and Pleasantdale Routes helped further delineate the Saskatchewan range of this species which has only recently been split from the former Rufous-sided Towhee.

Forest birds seemed to be doing well in the main. Some of the warblers, however, showed more clumped distribution than usual. Although often more widespread, 13 Nashville Warblers on the Bertwell and 10 on the Hudson Bay routes (both on the east side of the province) were the only ones recorded on this year's BBS. Most of the province's 10 Connecticut Warblers were recorded on the other side of the province on the Brightsand Route.

Wetland birds appeared to be doing very well, with a good variety being recorded from most routes. More specifically, Nelson's Sharp-tailed Sparrow was well-recorded on a number of parkland/forest fringe routes, while an impressive 14 American Bitterns were recorded on the Tyvan route and 39 Soras were logged on the Paddockwood Route. A Sedge Wren and a Le Conte's Sparrow were present south of their normal ranges on the Dendron Route. For **Phil Curry**, however, the most noticeable factor on his Englefield survey was the absence of wetlands. He writes: "We had a warm, dry winter and spring with little or no runoff. Many of the semi-permanent and permanent wetlands even went dry. There was a lot of destruction of wetland habitat as a result by

farmers seeding more acres. The results were a reduction in wetland birds."

The news for grassland passerines was mixed. Six Baird's Sparrows on the Jansen Route is a good number, especially for a site on the northeast edge of its range. On the other hand, only one Western Meadowlark was noted on the Theodore route, and the Lark Bunting was restricted mainly to the south and west of Moose Jaw. Four of 12 Baird's Sparrows and all 3 McCown's Longspurs on Dendron were in cropland, but as the BBS was not designed to assess nest success, it is not known if these birds were successful in attracting mates, let alone in producing young.

While it is normal for northern-nesting shorebirds such as the Lesser Yellowlegs to be seen on BBS routes, a number of other northward-bound birds lingered past their normal spring departure dates. Snow Geese were recorded on the Theodore Route, and both Snow and Greater White-fronted Geese were found on the Marcelin Route. Most remarkable was a Glaucous Gull on the Edenwold Route.

As usual a number of records were broken or firsts were recorded. The 36 routes run in 2000 exceeds the previous record of 34 set in 1999. Apart from the aforementioned Glaucous Gull, records of the Rock Wren and perhaps the Brewer's Sparrow from the Cypress Hills Route were Saskatchewan BBS firsts. Another dubious record, and perhaps the most noteworthy aspect of the Hudson Bay route, was that stop #1 was at the site of the newest and possibly the largest oriented strandboard plant in Canada!

As for the weather in 2000, a number of observers commented on how cold it was. **Maurice Mareschal**, who has conducted three routes in central Saskatchewan for many years, could not "...remember when the temperatures were so cold or the wind so persistent." **Don Weidl**, in conducting his Prince Albert National Park Route in early July, "...required full winter gear including winter boots, wool mitts, winter jacket and toque. The birds, however, were singing as well as ever."

- *Al Smith*

Manitoba

With the return of **Peter Taylor** after a year's sabbatical in France, a record 46 BBS routes were completed in Manitoba during 2000. Peter spent a week's holiday time on the "northern loop" carrying out a total of seven routes. Eight other observers completed two or more routes (**Dan Chranowski** -3, **Dennis Fast**, **Jean Horton**, **Bob Jones**, **Ken Kingdon**, **Adam Walley**, **Renee Will** and **Ken De Smet**). Two new routes were done by first-time observers (**Cam Elliott** and **Kurt Mazur**), while another new observer, **Heather Hinam**, took over the Swan River route from **Hugh Hornbeck** who ran the route nine times since 1990.

The overall species summary for Manitoba during 2000 totaled 199 species. Probably the most unusual species found during 2000 BBS surveys was an Eastern Meadowlark found by **Luc Blanchette** on the Graysville route. Thompson, run for the first time by **Cam Elliott**, produced the only Black-backed Woodpecker, Blackpoll Warblers (2),

American Tree Sparrows (14) and White-crowned Sparrow. Another new route (Stony Hill – Kurt Mazur) had the only Black-crowned Night-Heron and Western Wood-Pewee that were recorded. Unique species found by Peter Taylor included Spruce Grouse (Muddy Bay), Common Tern (Grand Rapids) and Wilson's Warbler (Springer Lake). Other unique species included Horned Grebe (Crane River – **Bill Koonz**), American Black Duck (Grunthal – **Paula Grief**), Eared Grebe (Brandon Hills – Renee Will), Ring-necked Pheasant (Delta Beach – **Bob Jones**), Virginia Rail (Ruthenia – Ken Kingdon), Forster's Tern (Hecla Island – **Bob Shettler**), Short-eared Owl (Wattsville – Dan Chranowski), Whip-poor-will (Whitemouth Lake – **Robert Parsons**), Chimney Swift (Tyndall – **Rudolf Koes**), Loggerhead Shrike (Elva – Ken De Smet), Golden-winged Warbler (Swan River – Heather Hinam), and Pine Warbler (Bedford Ridge - Dennis Fast).

Species that are occasionally found on Manitoba BBS counts, but were not recorded in 2000, included Red-breasted Merganser, Northern Goshawk, Cooper's Hawk, Osprey, American Woodcock, American Avocet, Solitary Sandpiper, Long-eared Owl, Three-toed Woodpecker, Northern Rough-winged Swallow and Red Crossbill. Other "uncommon" BBS species that were found in low numbers on only two to four routes included Turkey Vulture (five seen on four routes), Wood Duck (7 – 3 routes), Bufflehead (2 – Ruthenia and Brandon Hills), Common Goldeneye (5 – 3 routes), Hooded Merganser (2 – Grand Clairiere and Elva), Bald Eagle (7 – 3 routes), Sharp-shinned Hawk (2 – Muddy Bay and Minnewakan), Broad-winged Hawk (6 – 4 routes), Ferruginous Hawk (3 – 3 routes), Wild Turkey (18 – 3 routes), Yellow Rail (3 – 3 routes), Greater Yellowlegs (12 – N. Two Rivers and Twin Creeks), Lesser Yellowlegs (8 – 4 routes), Spotted Sandpiper (9 – 3 routes), Bonaparte's Gull (8 – 3 routes), Caspian Tern (3 – Hecla Island and Traverse Bay), Barred Owl (2 – Bedford Ridge and Springer Lake), Red-headed Woodpecker (7 – Grunthal and Graysville), Willow Flycatcher (6 – 3 routes), Say's Phoebe (2 – Mather and Elva), Philadelphia Vireo (14 – 3 routes), Boreal Chickadee (5 – 3 routes), Brown Creeper (4 – 3 routes), Golden-crowned Kinglet (5 – 3 routes), Sprague's Pipit (4 – 3 routes), Northern Parula (14 – 3 routes), Bay-breasted Warbler (8 – 4 routes), Canada Warbler (23 – 3 routes), Scarlet Tanager (6 – 4 routes), Lark Sparrow (5 – 4 routes), Grasshopper Sparrow (14 – Graysville and Elva), Baird's Sparrow (6 – Elva and Grand Clairiere), Chestnut-collared Longspur (39 – Elva and Grand Clairiere), Indigo Bunting (6 – Whitemouth Lake and Beaconia), House Finch (6 – 5 routes) and White-winged Crossbill (9 – Twin Creeks and Grand Rapids).

What were the busiest routes in Manitoba during 2000? Hecla Island with 90 species had the greatest diversity of species, but two routes with 86 species had the greatest number of birds (Grand Clairiere with 1,843 total birds and Crane River with 1,703). Other counts with high species diversity included Minnewakan (84 species), Traverse Bay and Stony Hill (83), Holland (82), Zelena (80), Ruthenia and Meleb (78), and Elva (76). Eight counts had more than 1,200 total birds, including Elva (1,511), Mather (1,404) and four

with 1,200-1,300 birds (Beaconia, Croll, Hecla Island and Minnewakan).

My thanks to all volunteers who contributed by observing or assisting on BBS routes in Manitoba during 2000. It was especially encouraging to see some new observers, routes run for the first time, and to have increased coverage of routes in northern and central Manitoba. There has also been several requests from new observers who would like to try a route in southern Manitoba. Since all routes are currently assigned, one more route will be set up in many southern blocks to accommodate these new requests.

- Ken De Smet

Ontario

Despite one of the coolest and wettest breeding seasons in recent history, Ontario BBS surveyors were out in full force. So far, data have been received for 78 routes in Ontario and a few more are expected. **Heather Baines**, **Anthony Bigg**, **David Wake**, **Peter Middleton**, **Dan Lee**, **Nick Escott** and **Darlene Salter** each surveyed two routes each, **Lynda Bennett** surveyed three routes, and for the second year in a row, **Marc Johnson** completed five BBS routes. Thanks for your dedication!

This year Ontario BBS surveyors counted more than 12,000 individual birds of 185 species! The average number of species recorded per route was 62, and the maximum number of species per route was 108, once again recorded by Ron Weir on his very productive Roblin route in southeastern Ontario.

One very noteworthy sighting this year was a Lark Sparrow, observed for the second year in a row by **Larry Drew** on his Kent Bridge route in southwestern Ontario. The last confirmed record for breeding Lark Sparrows in Ontario was 1976, so we should definitely keep an eye on this route. Two new species were added to the St. Lawrence River Plain ecological zone – a Bay-breasted Warbler on **Mark Chojnaki's** Fraserville route and a Carolina Wren on **Lori Wensley's** Crooked Creek route (this was the only Bay-breasted Warbler recorded in Ontario). Marc Johnson was fortunate to see two species new to the Closed Boreal Forest ecological zone - Least Bittern and Eastern Towhee. Least Bittern was recorded on only one other route in Ontario (Birdsall route, run by Anthony Bigg). **Charles Francis** sighted a Hooded Warbler on his Springfield route, which is a new species for the Great Lakes Plain zone and the only one recorded this year. Lastly, Mute Swan was new to the Northern Spruce/Hardwoods region, recorded by **Hugh Currie** on his Haliburton route.

Several other species were recorded on only one Ontario route this year: American White Pelican (Stratton, **D. Lee**), Black-crowned Night-Heron (Borden, **D. Ford**), Gadwall (Manitowaning, **C. Bell**), Northern Pintail (Bourget, **S. Parsons**), Bald Eagle (Kenora, D. Lee), Sharp-tailed Grouse (Stratton, D. Lee), Northern Bobwhite (Strathroy, **P. Read**), Common Moorhen (Roblin, **R. Weir**), American Coot (Luther, **R. Scovell**), Common Tern (Manitowaning, C. Bell), Black Tern (Colpoys Bay, **J. Johnson**), Barred Owl (Roblin, R. Weir), Great Gray Owl (Eagle River, **R. Dawes**), Carolina

Wren (Crooked Creek, L. Wensley), Orange-crowned Warbler (Ghost Lake, D. Salter), Blackpoll Warbler (Wilfrid, **S. McGregor**), Yellow-breasted Chat (Strathroy, P. Read), Rusty Blackbird (Borden, D. Ford), and Orchard Oriole (Strathroy, P. Read).

Thanks to all Ontario BBS observers and their assistants – your hard work is appreciated, and I hope that the weather is more cooperative in 2001! Although coverage in southern and central Ontario is fairly high, there are still many routes in northern Ontario that need to be filled. Available routes will be posted on Bird Studies Canada's website early in 2001:

(<http://www.bsc-eoc.org/bscmain.html>). Please contact me if you know of anyone who might be interested or if you want to take on one of these routes. Good luck in 2001!

- *Debbie Badzinski*

Québec

First of all, I would like to welcome all our new participants and their assistants. Once again I thank everyone who ran their route(s), with a special mention for those who completed more than one route. I hope everyone will be available for the next season.

In 2000 we received 57 routes completed by 42 participants; in both cases two more than last year. Again this year **Jean Piuze** turned in the highest number of routes (five), and **Vincent Létourneau** had the highest number of species: 81 on the Bolton route in Estrie. Several routes (nine) had more than 70 species, mostly in southern Québec. Some participants had the good luck of finding these interesting species: one Red-necked grebe by **Michel Larrivée** on Cap d'Espoir; three Bald Eagles, one at Lac Andou in the La Vérendrye wildlife reserve (**Peter Blancher**), one at Lac Arnold (**Claude Roy**) and one at Bolton (Vincent Létourneau); two Cooper's Hawks, one at Eardley (Peter Blancher) and one at Bryson (**Hélène Lévesque**), both in the Outaouais region; two Red-shouldered Hawks, one at Eardley (Peter Blancher) and one at Lourdes (Claude Roy); one Wild Turkey at Châteauguay (**David Covino**); three Northern Mockingbirds, one at Rivière Rouge (**Monique Blais**), one at Fabre in the Témiscamingue region (**Jonathan Fréchette**) and one at Châteauguay (David Covino). Two particularly unusually species grabbed our attention this year: a Prairie Warbler on the Bolton route (Vincent Létourneau) and a Yellow-throated Warbler on the Montebello route (**Suzanne Maillé**).

We look forward to working with you all again next year, and wish you good weather and lots of birds.

- *Daniel St-Hilaire*

Maritimes

A special thanks to those volunteers who were foiled by poor weather in 2000. Persistent wet and windy conditions forced several people to abandon their efforts during the only times they had available to run their routes. We look forward to better luck next year.

We all know that our volunteer BBS efforts contribute to science and to our understanding of bird populations and distribution. But sometimes doing a BBS route can just be fun and interesting. One of the most interesting outcomes of running a BBS route is finding that rare or uncommon bird, perhaps even one that nobody else has found. So I looked through data submitted for the Maritimes and found some interesting single-record accounts for 2000. Some of the records are just single accounts of species that are difficult to detect but which we know to be fairly common. Others are on the periphery of their range for this region. But a few may represent the beginnings of changes in distribution and abundance.

New Brunswick can boast the largest number of these single-occurrence records in the Maritimes: A Black-crowned Night-Heron on the Balmoral route, a Common Goldeneye, a Sharp-shinned Hawk, a Baltimore Oriole and a Great-crested Flycatcher on the Hampton route, a Brown Creeper and a Black Guillemot on the Grand Manan route, a Northern Goshawk on the Washademoak route, an Eastern Bluebird on the Lauvergot route, a Pine Warbler on the Oak Hill route, and an Eastern Meadowlark on the Cloverdale route.

Nova Scotia had the second highest number of these records: Northern Gannet and a Greater Yellowlegs on the Pleasant Bay (Cape Breton) route, a Northern Pintail and a Green-winged Teal on the Joggins route, a Red-breasted Merganser and a Black-backed Woodpecker on the Pt. Michaud (Cape Breton) route, a Great-horned Owl on the Londonderry route, and a Northern Saw-whet Owl on the Gaspereau Lake route.

Prince Edward Island recorded only one single-occurrence species but it is an interesting one – a Gray Partridge on the Bedeque route.

I was heartened to see the Wood Thrush reappearing – on four routes for a total of 10 birds in the Maritimes. There had been a steady decline of the species until 1996 when there were no records on BBS routes in the Maritimes. I also note an extremely low number of Cape May Warblers, which were found on only three routes in 2000. This species is a well-known Spruce Budworm follower that may simply be responding to the low cycle of budworm.

And now, a good-bye and a welcome: Many thanks to **Azor Vienneau** who is retiring after 10 years on the Peggy's Cove route. And welcome to **Dorothy McFarlane**, who has agreed to take on two perennially-difficult routes.

There are, at time of writing, a few open routes in Nova Scotia and New Brunswick. If any of you know of people interested in becoming a BBS volunteer, please have them contact me. You can check out the status of routes in the Maritimes either by contacting me directly or by stopping by my new and improved regional BBS web site at **BBS.Tantramar.com**. Until next year, good birding!

- *Dan Busby*

You asked us about checklist order

Several observers asked us recently why we change the order in which species appear on our pre-printed data forms. It is a good question, and we should not make these changes without offering an explanation. Most noticeable to Canadian BBSers in the last two years was that the vireos moved from just before the warblers to just before the jays. The reason our list changed is that we follow any modifications the American Ornithologists' Union makes to their checklist order. These changes are based on evolving taxonomic research.

Most observers are aware that bird species names change occasionally for the same reason, and also to increase international standardization of bird names. In the Winter 1999 newsletter we published an article describing all such changes over the history of the BBS and how they are reflected in the database. In addition to changes described there, these recent changes will appear on Canadian BBS scan forms, if applicable:

- Oldsquaw will be renamed to Long-tailed Duck.
- Sage Grouse will be renamed to Greater Sage-Grouse.
- Bullock's Oriole will appear before instead of after Baltimore Oriole. ♪

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.ec.gc.ca/cws-scf/nwrc/bbs.htm>

Maritimes: <http://bbs.accra.ca>

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

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

and

<http://www.mp2-pwrc.usgs.gov/bbs/index.htm>

PROVINCIAL AND TERRITORIAL COORDINATORS

Welcome to new coordinators Debbie Badzinski who takes Becky Whittam's place in Ontario and to Peter Thomas who joins Bill Montevecchi as co-coordinator for Newfoundland and Labrador

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.

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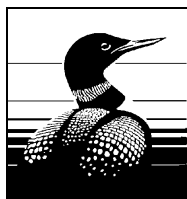
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THE 2000 TEAM

Welcome to all first-year observers, farewell to retirees, and many thanks to everyone!

Newfoundland: Lois Bateman, J. Kevin Butler, Jytte Selno, Neal Simon, Gregory Stroud

Prince Edward Island: Rosemary Curley, Richard Elliot

Nova Scotia: Marc Adam, Paul Bogaard, Sandy Burnett, Dan Busby, David Colville, David Currie, Albert Dean, James Elliott, Rebecca Ellis, Bernard Forsythe, Sylvia Fullerton, June Graves, Gerry Lunn, Roslyn MacPhee, Blake Maybank, David McCorquodale, Ken McKenna, Richard Stern, Azor Vienneau

New Brunswick: Christopher Adam, G. Marion Belyea, Roland Chiasson, David Christie, Marc d'Entremont, Brian Dalzell, Marcel David, Tracey Dean, Neville Garrity, Michael Lushington, Ken Macintosh, E. Mary Majka, Scott Makepeace, Dorothy McFarlane, Kent Orlando, Georgette Thibodeau, James Wilson

Québec: Margaret Arnaud, Pierre Bannon, Olivier Barden, Walter Bertacchi, Philippe Blain, Monique Blais, Peter Blancher, Roger Caissy, David Covino, Donald Dallaire, Denis Desjardins, Alain Desrosiers, Jonathan Frechette, Kathryn Freemark, Donna Gaudet, Claude Gauthier, Yves Gauthier, Bertrand Hamel, Daniel Jauvin, Michel Lalancette, Jacques Larivée, Michel Larrivée, Robert Lebrun, Luc Legaré, Serge Lehouiller, Jean-Raymond Lepage, Ronald Lepage, Vincent Létourneau, Hélène Lévesque, Suzanne Maillé, Jean-Louis Martel, Harvey Mead, Daniel Mercier, Reginald Ouellet, Jean Paquin, Desneige Perreault, Jean Piuze, Claude Roy, Daniel St-Hilaire, Margo St-Louis, Sylvain St-Onge, Christine Taylor, Claude Tremblay, Edith Vandewalle

Ontario: Heather Baines, Christopher Bell, Lynda Bennett, Anthony Bigg, Peter Blancher, Chris Blomme, Albert Boisvert, Gerhard Bruins, Susan Bryan, Donald Cavin, Edward Cheskey, Mark Chojnacki, Peter Coe, Floyd Cosby, Hugh Currie, Robin Dawes, Larry Drew, Erica Dunn, Christopher Escott, Nicholas Escott, Kathy Evoy, Donald Ford, Charles Francis, Kathryn Freemark, Peter Good, Brett Groves, Christopher Harris, Diane Haselmayer, Kurt Hennige, Brian Henshaw, Joseph Johnson, Marc Johnson, Donald Kerr, Dan Lee, Simon Lunn, Peter Mansfield, Douglas Martin, Hugh McArthur, Bev McBride, Sheldon McGregor, Peter Middleton, Drew Monkman, James Mucklow, Jean Niskanen, Mick Panesar, Nancy Parish, Sandra Parsons, Steven Price, Peter Read, Sam Rosa, Michael Runtz, Darlene Salter, Ron Scovell, Don Shanahan, Allan Sinclair, Richard Tafel, Ilmar Talvila, Karen Timm, Rohan Van Twest, Van Waffle, David Wake, Ron Weir, Steve Wendt, Lori Wensley, Robert Whittam, Angie Williams

Manitoba: Greg Barrows, Robert Berger, Luc Blanchette, Brad Carey, Daniel Chranowski, Ward Christianson, Andy Courcelles, Carolyn Curtis, Ken De Smet, Cam Elliott, Dennis Fast, Kenneth Gardner, Paula Grief, Heather Hinam, George Holland, Jean Horton, Crawford Jenkins, Robert Jones, Ken Kingdon, Rudolf Koes, William Koonz, Kurt Mazur, Wayne Neily, Robert Parsons, Raymond Pettinger, Bob Shettler, Tim Sopuck, Peter Taylor, Adam Walley, Constance Will, Margaret Yorke

Saskatchewan: P. Lawrence Beckie, Lionel Bonneville, Donna Bruce, Muriel Carlson, Philip Curry, Brenda Dale, Stephen Davis, Dale Hjertaas, Ronald Hooper, C. Stuart Houston, Brian Johns, Harvey Johnson, Maurice Mareschal, Wayne Pepper, John Pollock, J. Frank Roy, Al Smith, Lowell Strauss, Steve Van Wilgenburg, Guy Wapple, Rob Wapple, Don Weidl, Michael Williams

Alberta: Peter Balagus, Reid Barclay, Barbara Beck, James Beck, Jenise Bidulock, Ron Bjorge, John Bovell, D. Mark Bradley, Roger Brown, Audrey Burton, Robert Carroll, Sheila Clark, David Cuthiell, Brenda Dale, Ross Dickson, Brenda Dobson, Teresa Dolman, Chris Doupe, Rodger Dunn, David Ealey, Gary Erickson, Janet Ficht, Joy Finlay, Lenora Flynn, Jennifer Gammon, Stephen Glendinning, Jim Goodwin, Stan Gosche, Graeme Greenlee, Willis Hall, Ian Halladay, Cedric Hitchon, Philip Horch, Jacques Hurabielle, Glen Hvenegaard, Ted Johnson, Kasy Kaczanowski, Joan Kerr, Jessie Kinley, Tom Klein, Steve Knight, William Korolyk, Leonard Kozlowski, Lloyd Lohr, Beth MacCallum, Avarad Mann, Mike McIvor, Don Mills, Patricia Mitchell, Andrew Murphy, Michael O'Shea, Ken Oakes, Dan Osness, Mark Oxamitny, Jack Park, Brian Peers, Jamey Podlubny, Jo-Anne Reynolds, Richard Riddell, Blair Rippin, Michael Rogers, Irma Rowlands, Thomas Sadler, Dave Scobie, Andrew Slater, Ralph Smith, Milton Spitzer, Bill Taylor, Howard Troughton, Donald Watson, Kevin Wingert

British Columbia: Catherine Aitchison, David Aldcroft, Steve Baillie, Bruce Bennett, Jack Bowling, Richard Cannings, Sydney Cannings, Chris Charlesworth, Kathleen Collins, Gary Davidson, Krista De Groot, Thomas Dickinson, Wendy Easton, Robert Ferguson, Steve Gniadek, Ralph Heinrich, Phil Henderson, Doug Leighton, Wendy Marshall, Ed McDonald, Carolyn McGhee, Ed McMackin, John McRuer, Pearl Morgenstern, Mark Phinney, Rosamund Pojar, Allen Poynter, Evan Pye, Keith Riding, Reto Riesen, Anna Roberts, I. Laurie Rockwell, Greg Ross, Warren Schaffer, Rick Schortinghuis, Madelon Schouten, Chris Siddle, Elsie Stanley, Ray Sturney, Howard Telosky, Ruth Travers, William Tuck, Hank Vanderpol, Frances Vyse, Michaela Waterhouse, Wayne Weber, Diane Weismiller, Allen Wiseley, John Woods, Ellen Zimmerman

NWT: Jamie Bastedo, D. Mark Bradley, Craig Machtans, Bonnie Stout, David Wilderspin

Yukon: Del Buerge, Michael Gill, Helmut Grunberg, Todd Heakes, David Henry, Dave Mossop, Edward (Ted) Murphy-Kelly, Amélie Rousseau, Pamela Sinclair, Mary Whitley



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