

The Audubon Society of New Hampshire's Backyard Winter Bird Survey

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2002 Results

by Dr. Pamela Hunt, Consulting Ornithologist

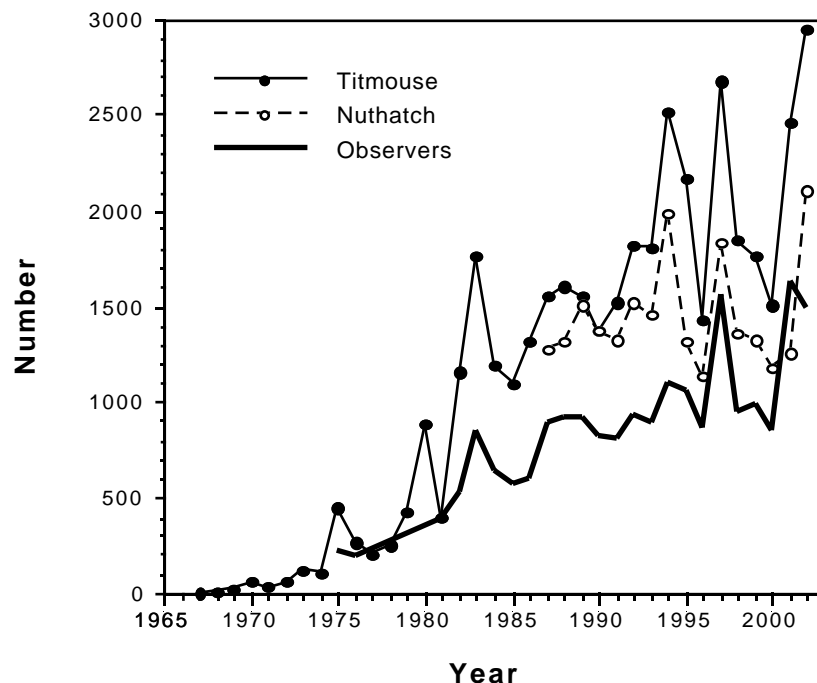
After the “relatively normal” winter of 2000-2001, 2001-2002 proved to be the warmest winter in 122 years of record keeping in New England. As a testament to this warmth, Lake Winnepesaukee never completely froze for the “first time in memory.” Participants in the Backyard Winter Bird Survey (BWBS), in contrast to recent years, enjoyed sunny and relatively warm conditions over much of the state (the temperature reached the mid-40s in some southern areas). Clouds moved in on the second day of the survey, and rain or snow started falling in some places, but in general the weather resulted in good conditions for feeder watching.

There were fewer observers this year, although the total was still the second highest in the history of the survey. Perhaps as a result (and in combination with good observing conditions), many of the common species again reached record highs. Prominent among these record breakers were Downy and Hairy Woodpeckers, Tufted Titmouse, and White-breasted Nuthatch. Rather than just writing these increases off as a result of observer effort, as I often have in the past, this year I decided to do a bit of analytical sleuthing. The graph at right shows the numbers of Tufted Titmice and White-breasted Nuthatches over the course of the survey (Figure 1.). It was

immediately obvious that these two species were showing very similar patterns of ups and downs, and I wondered what factors might be at work. Thus I also plotted the number of observers, and found a very good match between this variable and the number of birds. The pattern is particularly obvious in 1997. For the record, both the woodpeckers mentioned previously also show the same pattern as the titmice and nuthatches.

What does this discovery tell us? Perhaps more than anything else, it reminds us how important it is to look beyond the raw data when analyzing population data. If you were to divide the numbers of titmice by

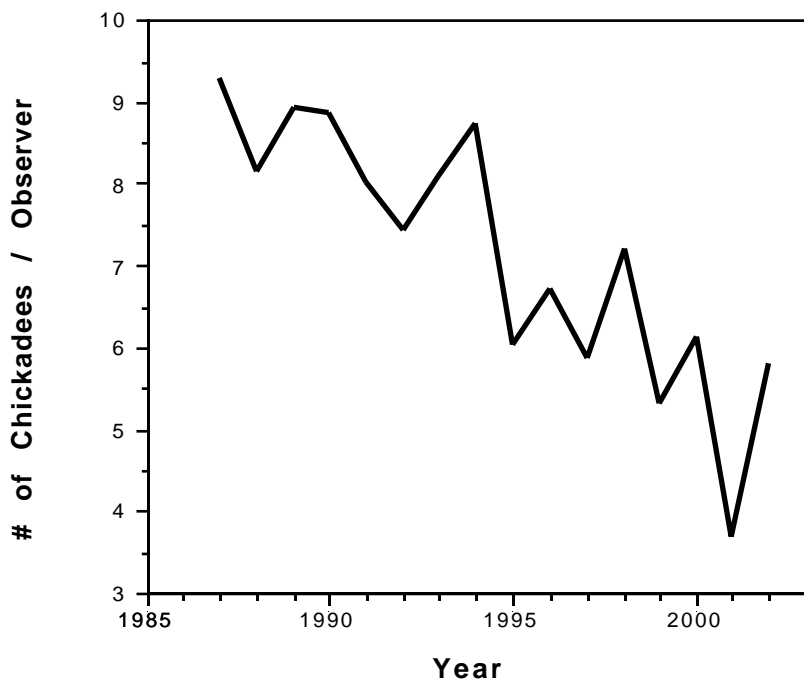
Figure 1. Numbers of Tufted Titmice, White-breasted Nuthatches, and Observers on the BWBS



the number of observers, the resulting graph would be essentially flat—showing none of the increase that appears on the graph. So are titmice really increasing? Of course they are, and data from broader surveys bear this out. At the scale of individual feeders, however, the data are limited by a basic fact of titmouse biology: they don't tend to travel in very large flocks. Thus, each feeder will host 2-4 titmice, and a better measure of population increase might be the number of observers reporting the species.

One common visitor to backyard feeders has yet to be mentioned in this discussion: the Black-capped Chickadee. When chickadee numbers are divided by observer effort, the result is very sobering. Figure 2 shows that chickadee populations are in a pronounced long-term decline, a pattern that is born out (but not as extremely) by Christmas Bird Count data in New Hampshire, as well as other parts of the Northeast.

Figure 2. Relative abundance of Black-capped Chickadees on the BWBS



Why might chickadees be declining? A good question indeed, and most certainly one that cannot be answered with current data. Adding to the “problem” is the fact that the other broad-based regional data set—the Breeding Bird Survey—shows chickadee populations increasing over most of New England (with the exception of a slight decline in Vermont). Given such conflicting data on overall populations, we'll probably need to look more closely at potential variation within the BWBS data set. In the meantime, keep on collecting data, since you never know when it might prove crucial to sorting out ecological puzzles such as this.

In the fluctuating population department, 2002 saw a return to normal numbers of juncos and other sparrows after the previous winter's veritable invasion. As for irruptive northern species, the primary invaders this season were Pine Grosbeaks and Common Redpolls, with a smattering of Bohemian Waxwings. The grosbeaks took top honors, with 281 individuals being the second highest total on record. Among the usual Common Redpolls were two Hoary Redpolls, a much rarer northern species that has only been documented four times in the history of the survey. Other northern finches were downright scarce or at best in “typical” numbers. Evening Grosbeaks, once a fixture of the winter feeder, hit their second-lowest total ever.

As usual there were a few observations in 2002 that are not easily categorized. One was a record high of Barred Owls, and current thinking posits that this was a result of high rodent populations during the summer.

Because food was plentiful, many young owls survived into the fall, only to find prey hard to catch as mouse populations dropped. Perhaps they were then lured in to feeders by whatever small rodents were attracted to scattered birdseed. The trend of increasing winter populations of American Robins and Eastern Bluebirds continued, and was probably a combination of abundant berry crops and milder temperatures. Milder winters have also helped two southern species that have received attention in this summary before: Carolina Wren and Red-bellied Woodpecker, which reached their highest and second-highest totals respectively. For the woodpecker, this is part of a regional increase that has been going on since 1995.

Finally, there was one species new to the survey in 2002. The honor goes to a Yellow-breasted Chat that regularly visited a feeder in Rye from January to April. At various times it was joined by other surprise winter visitors: Carolina Wren, Gray Catbird, and Eastern Towhee. Although not all of these birds were recorded on the survey, they were enjoyed by many birders for several weeks, and thanks are in order to Priscilla Wilson, whose feeders hosted the birds and those wishing to view them.

Of course, thanks are also in order for all of you who continue to participate in the Backyard Winter Bird Survey. As data accumulates, we can only hope that patterns of bird distribution and abundance become clearer and clearer, and in turn help us understand what affects our state's winter bird populations.

2002 Backyard Winter Bird Survey Totals

Species seen at participants' bird feeders and backyards

| | | | | | |
|-------------------------|------|-------------------------|------|------------------------|------|
| Great Blue Heron | 2 | Barred Owl | 31 | Yellow-breasted Chat | 1 |
| Turkey Vulture | 1 | Owl species | 1 | Eastern Towhee | 1 |
| Canada Goose | 936 | Belted Kingfisher | 1 | American Tree Sparrow | 1467 |
| Mute Swan | 13 | Red-bellied Woodpecker | 40 | Fox Sparrow | 8 |
| American Black Duck | 103 | Downy Woodpecker | 1746 | Song Sparrow | 30 |
| Mallard | 663 | Hairy Woodpecker | 1234 | White-throated Sparrow | 241 |
| Common Goldeneye | 1 | Northern Flicker | 20 | Sparrow species | 134 |
| Bufflehead | 21 | Pileated Woodpecker | 70 | Dark-eyed Junco | 3218 |
| Common Merganser | 3 | Woodpecker species | 5 | Snow Bunting | 104 |
| Bald Eagle | 2 | Northern Shrike | 3 | Northern Cardinal | 1559 |
| Eagle species | 3 | Gray Jay | 6 | Red-winged Blackbird | 16 |
| Sharp-shinned Hawk | 25 | Blue Jay | 6977 | Common Grackle | 50 |
| Cooper's Hawk | 9 | American Crow | 3027 | Brown-headed Cowbird | 5 |
| Cooper's/Sharp-shinned | 14 | Common Raven | 104 | Pine Grosbeak | 281 |
| Northern Goshawk | 8 | Black-capped Chickadee | 8700 | Purple Finch | 643 |
| Red-tailed Hawk | 42 | Boreal Chickadee | 2 | House Finch | 1294 |
| Hawk species | 12 | Tufted Titmouse | 2953 | Finch species | 43 |
| Ring-necked Pheasant | 7 | Red-breasted Nuthatch | 918 | White-winged Crossbill | 14 |
| Ruffed Grouse | 21 | White-breasted Nuthatch | 2114 | Common Redpoll | 3187 |
| Wild Turkey | 870 | Nuthatch species | 26 | Hoary Redpoll | 2 |
| Northern Bobwhite | 1 | Brown Creeper | 132 | Pine Siskin | 411 |
| Ring-billed Gull | 12 | Carolina Wren | 47 | American Goldfinch | 4393 |
| Herring Gull | 179 | Golden-crowned Kinglet | 7 | Evening Grosbeak | 783 |
| Great black-backed Gull | 153 | Eastern Bluebird | 49 | House Sparrow | 2278 |
| Gull species | 133 | American Robin | 1209 | Red Squirrel | 2730 |
| Rock Dove | 854 | Northern Mockingbird | 102 | Gray Squirrel | 3621 |
| Mourning Dove | 8606 | European Starling | 3436 | | |
| Eastern Screech-Owl | 1 | Bohemian Waxwing | 49 | | |
| Great Horned Owl | 1 | Cedar Waxwing | 720 | | |

Unusual reports

received without descriptive documentation:

| | |
|-----------------------|----|
| Snow Goose | 1 |
| Turkey Vulture | 1 |
| Peregrine Falcon | 3 |
| Northern Bobwhite | 2 |
| Red-headed Woodpecker | 1 |
| House Wren | 1 |
| Winter Wren | 2 |
| Hermit Thrush | 3 |
| Brown Thrasher | 1 |
| Bohemian Waxwing | 12 |
| Eastern Towhee | 1 |
| Chipping Sparrow | 10 |
| Swamp Sparrow | 3 |
| Rusty Blackbird | 2 |

We strongly encourage observers to include details or photographs of unusual sightings (see Instructions). These help maintain the accuracy of the study.

Observers:

| | |
|--------------|-----|
| Belknap | 113 |
| Carroll | 91 |
| Cheshire | 65 |
| Coos | 60 |
| Grafton | 130 |
| Hillsborough | 282 |
| Merrimack | 305 |
| Rockingham | 378 |
| Strafford | 118 |
| Sullivan | 40 |

Total Observers: 1582

Don't forget to count your squirrels. We have our first year of data on numbers of red and gray squirrels. It's impossible to make any kind of comment after just one year but it will be interesting to watch how these numbers fluctuate (or not) in the years ahead.

I have no birds!

by Rebecca Suomala, Survey Coordinator

Many people get frustrated when they have few or no birds on the day of the survey and feel that it is not worth reporting the few birds they did see. But remember—a lack of birds provides important data that we need to determine population trends. In a survey such as the Backyard Winter Bird Survey (BWBS), it is just as important to report few or no birds as it is to report many birds. The most important thing is to participate each year regardless of how many or how few birds you have. This helps provide us with a consistent long-term set of data that shows both the ups and downs.

This brings us to the question of whether bird populations are declining and why. It is, and remains, a difficult question to answer and often varies depending on the species. Bird populations experience natural fluctuations both seasonally and yearly. For example, cold, stormy weather in the nesting season may affect breeding success and result in fewer young birds present the following fall and winter. This can be exacerbated by “the mast effect”—high mast crops in fall result in large populations of nest-predating squirrels and chipmunks, which cause a decline in nesting success the following summer and result in fewer young produced. (Hence one reason for counting squirrels.)

Numbers of birds at feeders fluctuate depending on weather, natural food supplies, and bird migrations. The BWBS shows regular patterns of high and low years for birds

such as Common Redpolls, American Goldfinches, and Pine Siskins, which roam over large regions in search of natural food supplies. The answers lie in looking at the trends over time. And it can be a frustratingly long time before there is adequate evidence to dispel debate.

Some species are clearly declining. Habitat loss is a factor for species such as Upland Sandpipers, which need the large grasslands now disappearing from New Hampshire, but birds of the suburbs, such as House Sparrows, are gaining habitat. Birds that migrate to the tropics are impacted by migration hazards and changes to their wintering environment, which year-round residents do not experience. There is also much we do not know about the impact of West Nile Virus, which only appeared a few years ago. Although the most susceptible species in our area appear to be birds in the corvid family, such as crows, it has affected raptors in the Midwest, and any impact on songbirds would be difficult to detect.

It is long term surveys that provide the information to spot declining trends that are not part of the normal fluctuations in bird populations, especially for small songbirds that have large populations spread over a wide geographic area. The Breeding Bird Survey, Christmas Bird Counts, and feeder surveys are important sources of data on these species. Your participation in long-term surveys such as the Backyard Winter Bird Survey can help provide the data that is needed to spot declines and begin to ask and answer questions about why.

Help Support the Backyard Winter Bird Survey

Thank you—your participation in the survey is a valuable contribution that we appreciate. **A monetary donation is not necessary** in order to participate, but many people wish to help out in this way. This additional contribution helps us defray the costs of the survey and continue this valuable monitoring effort for New Hampshire's birds.

Yes—I'd like to help support the survey with an additional donation. Enclosed is my contribution of:

\$10 \$25 \$50 other _____

You do not need to be a member to contribute, but we welcome new members and appreciate your support for the Audubon Society of New Hampshire's mission to protect New Hampshire's natural environment for wildlife and for people.

Yes—I'd like to become a member of the Audubon Society of New Hampshire

Please enter my membership as indicated below and send me my new member packet.

Senior \$18 Individual \$30 Family \$45 Donor \$60
 Contributor \$100 Supporter \$250 Environmentalist \$500 Conservation Partner \$1,000

NAME: _____ PHONE: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

Enclosed is my check payable to ASNH.

Visa MC Exp.Date _____ Acct. No _____ Signature _____

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