FOCUS ON CITIZEN SCIENCE • VOLUME 11

Winter Bird Highlights

FROM PROJECT FEEDERWATCH 2014–15

The Cornell Lab of Ornithology

Bird Studies Canada / Études d'oiseaux Canada

FeederWatch welcomes new U.S. project assistant

We are pleased to have a new team member on board! Meet Chelsea Benson, a new assistant for Project FeederWatch. Chelsea will also be assisting with NestWatch, another Cornell Lab citizen-science project. She will be responding to your emails and phone calls and helping to keep the website and social media pages up-to-date.

Chelsea comes to us with a background in environmental education and conservation. She has worked with schools, community organizations, and local governments in her previous positions. She incorporated citizen science into her programming and into regional events like Day in the Life of the Hudson River.

Chelsea holds a dual B.A. in psychology and English from Allegheny College and an M.A. in Social Science, Environment and Community, from Humboldt State University.

We are excited that Chelsea has brought her energy and enthusiasm to the Cornell Lab, where she will no doubt mobilize even more people to monitor bird feeders (and bird nests) for science. Welcome, Chelsea!

Cover: Northern Flicker by Gary Mueller
Below: Curve-billed Thrasher by Pam Koch

Focus on Citizen Science is a publication highlighting the contributions of citizen scientists. This issue, *Winter Bird Highlights 2015*, is brought to you by Project FeederWatch, a research and education project of the Cornell Lab of Ornithology and Bird Studies Canada. Project FeederWatch is made possible by the efforts and support of thousands of citizen scientists.

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Join Project FeederWatch!

Anyone in the United States and Canada with an interest in birds and a feeder to watch is welcome to join. Help scientists monitor winter bird populations while you learn more about the birds in your neighborhood. To join, contact the FeederWatch office in your country.

United States

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pfw@birdscanada.org
www.birdscanada.org/pfw.html

FeederWatchers help researchers study mobbing behavior in backyard birds

BY CEDAR MATHERS-WINN, CORNELL LAB OF ORNITHOLOGY

If you have ever seen a group of birds clustered around a raptor and calling excitedly, then you have probably seen what is known as a "mobbing" event. Many common birds are known to behave aggressively toward predators, often approaching and even diving at a threatening hawk or owl while giving characteristically harsh "mobbing calls." The sound of mobbing birds can draw quite a crowd, often attracting many different species to join the cause, and can sometimes even harass the predator enough to drive it away.

Janelle Morano

Robotic owl used to elicit mobbing calls from backyard feeder birds.

The calls given by mobbing species are extremely conspicuous, but the information birds communicate with mobbing calls is not well known. A research collaboration between Christopher Clark, at the Cornell Lab, and Erick Greene, at the University of Montana, aims to elucidate the context and meaning of these calls. Toward that goal, researchers Janelle Morano and Cedar Mathers-Winn, of the Cornell Lab's Macaulay Library, spent the winter conducting experiments with the backyard birds of Project FeederWatch participants in and near Ithaca, New York. Researchers recorded the mobbing responses of feeder birds to two robotic mounts—a large Great Horned Owl and smaller Eastern Screech-Owl. In the coming months, they will analyze the data collected to look for differences in the calls.

Predators closest in size to their prey are most threatening. Black-capped Chickadees have been shown to change their mobbing calls according to the sizes of different predators,[1] but very little is known about the mobbing calls of Blue Jays, a species of particular interest to this study.

In addition to understanding the information contained in mobbing calls, the researchers hope to gain insight into how this information is shared and interpreted among multiple species. There is evidence that many different species listen to and understand each other's mobbing calls and that information in those calls transmits substantial distances through networks of eavesdropping birds.[2,3] Future research will attempt to decipher how far and fast information travels, who listens, and how this information is interpreted.

[1]Templeton, C., Greene, E., and Davies, K. 2005. Allometry of alarm calls: Black-capped Chickadees encode information about predator size. *Science*, 308:5730, 1934–1937.

[2]Templeton, C. and Greene, E. 2007. Nuthatches eavesdrop on variations in heterospecific chickadee mobbing alarm calls. *PNAS* 104:13, 5479–5482.

[3]Magrath, R. D., Pitcher, B. J., and Gardner, J. L. 2009. An avian eavesdropping network: alarm signal reliability and heterospecific response. *Behavioral Ecology* 20:4, 745–752.

Snow Bunting by Iris Macpherson

Your Legacy for Birds

Contributing data to Project FeederWatch is an important way to leave a lasting legacy. A pledge of financial support through a gift in your estate plans is a way to help ensure that FeederWatch thrives into the future.

To learn more about planned giving, please visit us at **birds.cornell.giftplans.org** or donate to FeederWatch by visiting **www.feederwatch.org** and clicking on the "Donate" button on the home page.

Photos, from left to right: Judy Eberspaecher, Missy Mandel, Robert Salter, Nick Saunders, Melissa Penta.
The bird on the left is a classic dark, streaky Common Redpoll, while the bird on the far right is a snowy, small-billed Hoary Redpoll. But many birds lie in between these two extremes. New research suggests Common–Hoary confusion may be justified.

How many species of redpolls are there?

Cornell Lab researchers look at redpoll DNA

BY GUSTAVE AXELSON, CORNELL LAB OF ORNITHOLOGY

FeederWatchers lucky enough to find redpolls at their feeders often search hopefully for the elusive Hoary Redpoll. But new research by two scientists at the Cornell Lab presents genetic evidence that reopens questions about the species status of the Hoary Redpoll, long thought to be a distinct species from the Common Redpoll.

In a recent paper[1] Nicholas Mason and Scott Taylor of the Cornell Lab's Fuller Evolutionary Biology Program showed that Hoary Redpolls and Common Redpolls were nearly genetically identical. "Based on the samples of DNA we examined for Common and Hoary redpoll, they're probably best treated as a single species," Mason says.

Mason and Taylor looked beyond the plumage into strands of the birds' DNA in the most extensive look ever at the redpoll genome. Whereas previous genetic analyses of redpolls looked at just 11 regions of the genome (at most), Mason and Taylor examined 235,000 regions.

The duo compared DNA from 77 redpolls, including specimens from museums around the world. They found no consistent differences in DNA that distinguishes Hoary Redpolls from Common Redpolls. Furthermore, another redpoll species found in Europe—the Lesser Redpoll—also had extremely similar DNA sequences. This extreme similarity among all the redpolls stands in marked contrast to studies of other groups of birds—such as Black-capped and Carolina chickadees—which show differences at many regions of the genome.

How then can Hoary and Common redpolls look so different? The variation we see in plumage and size is probably not a matter of genetic variation but of genetic expression. It's rather like how two humans might have the same gene for brown hair, but one person's hair might be lighter than the other's—that gene is being expressed differently. In the same way, Hoary and Common redpolls have remarkably similar sets of genes, but those genes are expressed differently, causing the plumage and bill-shape differences we see.

In addition to looking at DNA from a variety of redpoll specimens, Mason and Taylor sampled redpolls from a large flock that had gathered in a fellow Cornell Lab employee's backyard in Cortland, New York. If Hoary and Common redpolls had long been separate species, then the birds sampled should have mostly fit neatly into two categories, both by visual appearance and genetically. Instead, Mason said, "We did not find distinct characteristics to separate the redpoll types, but rather a continuum, or a progression, of physical traits, and many redpolls were somewhere in the middle."

In nature, one of the key differentiators among distinct species is assortative mating, that is, members of a group breeding with each other more often than they breed with members of another group. According to Mason, when it comes to Hoary, Common, and Lesser redpolls, "There are no clear-cut genetic differences, which is what we would expect to see if assortative mating had been occurring for a long time." Instead, Mason says the world's three redpoll species seem to be "functioning as members of a single gene pool."

Excerpted from March 30, 2015 post on the Cornell Lab's All About Birds Blog: blog.allaboutbirds.org.

[1]Mason, N.A. and Taylor, S. A. 2015. Differentially expressed genes match bill morphology and plumage despite largely undifferentiated genomes in Holarctic songbird. *Molecular Ecology*, 24:12, 3009–3025.

It looks like a rare bird, but is it?

BY ANNE MARIE JOHNSON, CORNELL LAB OF ORNITHOLOGY

When you see a new bird at your feeders, it can be hard to figure out what it is. When you check a field guide and find what appears to be the the exact bird but the field guide lists it as rare for your area in winter, excitement starts to mount. Everyone hopes to host a rare bird, and that excitement can make it hard to see the bird as anything else.

One bird that sometimes falls into this category is the female Purple Finch, which is frequently mistaken for the female Rose-breasted Grosbeak. Far less colorful than the males, these females are very difficult to distinguish from each other.

The Rose-breasted Grosbeak winters just south of the U.S. in Mexico, Central America, and northern South America. Although it rarely comes to feeders in most of the U.S. and Canada in winter, sometimes individuals do show up. The Purple Finch, on the other hand, winters along the Pacific and throughout the Eastern U.S. and Southeastern Canada, making it a much more common feeder visitor.

To increase the level of difficulty, two finches can be challenging to distinguish from the Purple Finch—the House Finch, whose female lacks the bold white eye stripe, and the Cassin's Finch, which usually is only found in western mountains. You can find tips for distinguishing those three species in the 2006 issue of Winter Bird Highlights and in a Tricky Bird ID page in the Learn section of the FeederWatch website.

Distinguishing between Rose-breasted Grosbeak and Purple Finch females

Purple Finch

(Haemorhous purpureus)

- 4.5–6.5 in (12–16 cm)
- Conical gray bill
- White stripe that extends from nape to top of eye
- Thick streaks on chest, sides, flanks, and lower belly
- Nondescript wingbars-like markings

Rose-breasted Grosbeak

(Pheucticus ludovicianus)

- Large bird: 7–8 in (18–21 cm)
- Thick, pinkish bill
- Bold white stripe above eye that extends from back of head to bill.
- Thin streaks on chest, sides, and flanks that fade to a mostly white lower belly
- Two white wingbars

Bob Vukinic (2)

Partridges, grouse, and turkeys at feeders in Canada

BY KERRIE WILCOX, BIRD STUDIES CANADA

When people set up a bird feeder for the first time, most think of attracting songbirds such as chickadees, sparrows, and finches. However, many other types of birds come to feeders in Canada, including Ruffed Grouse, Ring-necked Pheasant, Wild Turkey, Gray Partridge, Sharp-tailed Grouse, and Spruce Grouse. Thanks to the 3,212 participants in Canada, we are learning more about this family of birds, known as the Phasianidae.

Ruffed Grouse by Megan Wilcox

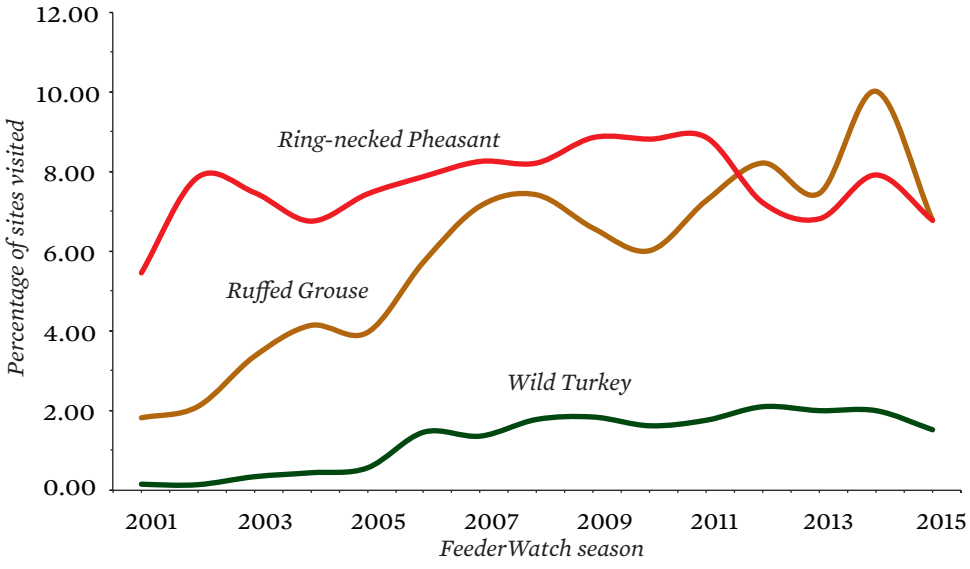
Sharp-tailed Grouse, Spruce Grouse, and Gray Partridges were all reported at approximately 2% of sites.

Ruffed Grouse

This beautifully dappled, grayish or reddish bird is native to North America and is widely distributed across Canada, living in all of the Canadian Provinces. Ruffed Grouse live their entire lives in wooded areas. They seem to thrive in severe winters; where there is snow cover, they live on the dormant flower buds or catkins of trees such as aspens, birches, cherries, and ironwood.

This past season, Ruffed Grouse were reported at 7% of sites across Canada. While this is down from the previous season's all-time high of 10%, they appear to be on an upward trend at feeders. Ruffed Grouse

Ruffed Grouse, Ring-necked Pheasant, and Wild Turkey



Percent of FeederWatch sites in Canada visited over the past 15 years by Ruffed Grouse, Ring-necked Pheasant, and Wild Turkey.

were reported visiting 5% of sites in Ontario and 9% in the Atlantic Canada provinces of Nova Scotia, Newfoundland, New Brunswick, and Prince Edward Island, but they were not reported at feeders in the Territories.

What are Ruffed Grouse eating at feeders? We asked Tammie Haché, the Ontario FeederWatch Cam host, what was attracting the Ruffed Grouse to her backyard in Manitouwadge, Ontario. Tammie said, "At my feeders, the Ruffed Grouse eat black oil sunflower seed crumbs and peanut crumbs. They do seem partial to the peanut pieces on the platform. They will also go for the fruit on my ornamental crab apple tree in fall. They LOVE that! The 'berries' are about the size of a dime and the grouse just swallow them right down, whole."

Ring-necked Pheasant by Karen Cook

Ring-necked Pheasant

Ring-necked Pheasants are so much a part of the bird community in Canada that we sometimes forget that they were introduced from Asia. This native of China had a long history of association with people and agriculture before its introduction to Oregon in 1881. Ring-necked Pheasants are now found across North America. In winter, the sexes separate into flocks and each flock has a strong dominance hierarchy. Pheasants are ground feeders that typically eat waste grain. Long, cold winters can result in high mortality rates because of exposure and heavy predation.

Ring-necked Pheasants were seen at 7% of Canadian FeederWatch locations during the 2014–15 season. Their numbers were particularly high in the Atlantic Canada provinces of Nova Scotia, Newfoundland, New Brunswick, and Prince Edward Island, where they were reported at a whopping 28% of sites! Karen Cook of Nova Scotia reported them weekly at her feeders last season. Observing their hierarchy and food preference, she noted at the end of the season that, "the big guy still drops by daily around 5:45 A.M. to snack on a few peanuts and check things out."

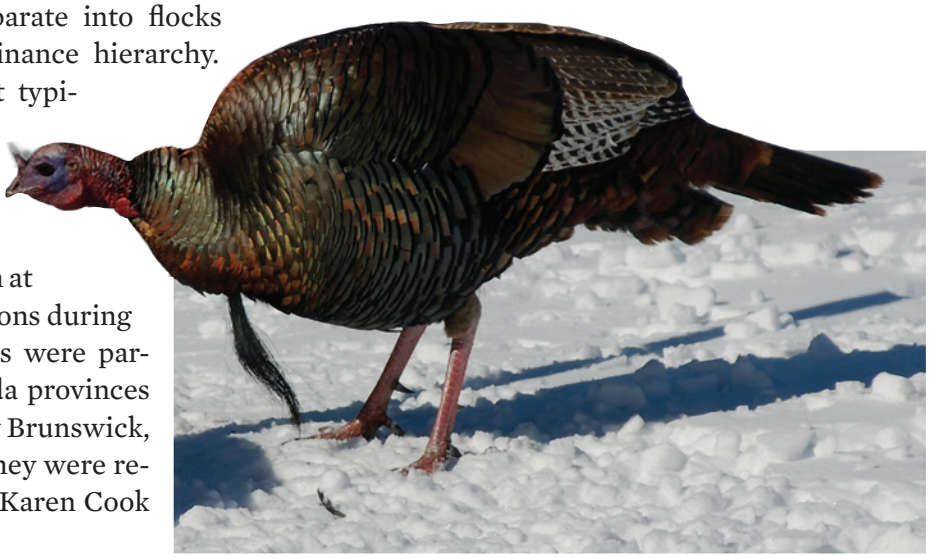
Elaborate courtship display caught on the FeederWatch Cam

Phasianidae are ground-dwelling birds with feathered nostrils, short, strong bills, and short rounded wings. Their flight is brief but strong, and males perform elaborate courting displays. One of these elaborate displays was even captured on the Ontario FeederWatch Cam and was viewed over 700,000 times! If you missed it, you can still catch the Ruffed Grouse Courtship display on YouTube at **cams.allaboutbirds.org/channel/38/FeederWatch_Cam**.

Wild Turkey

Endemic to North America, Wild Turkey populations have been re-established in what is considered one of the great successes of modern wildlife management. Wild Turkeys forage on the ground, mainly eating acorns and nuts in winter.

Wild Turkeys were reported at 2% of FeederWatch sites in Canada last season. The highest numbers were reported in Ontario with nearly 8% of sites visited, down from 10% the last 3 years in a row. Wild Turkeys were also reported in small numbers in Quebec, Alberta, and British Columbia. Janet Hambly of Markdale, Ontario, has two flocks of Wild Turkeys that regularly visit her feeders. "The turkeys were a surprise. I started throwing bird seed out the front door where the snow was packed and there's shelter. I knew there were turkeys around, but was surprised to find them right at the front door!"



Wild Turkey by Carol Smith

Regional roundup

Trends and highlights from the 2014–15 FeederWatch season

BY EMMA GREIG, CORNELL LAB OF ORNITHOLOGY

This year we finished up the season with 131,670 checklists. Thank you to all the Project FeederWatch participants who submitted data!

We have added a new column, titled "Change," to our Top-25 tables this year. The column highlights how a species' population this season compares to its population over all previous seasons, allowing you to see broad, long-term patterns at a glance. Where there is no arrow, it means that the percent of sites visited for that species is approximately the same as it has been on average since 1989. When there is a single arrow up or down, it means that the percentage of sites visited is different by 5–10% this season compared to the average since 1989. Finally, where there are two arrows, it means that the percentage of sites visited is more than 10% different this season compared to the average since 1989.

The take-home message from this summary is that common feeder birds are doing great! Look for yourself—if you count the arrows that show an increase, you will find 57 instances of a species increasing in any region. If you count the arrows that show a decrease, you will find only 9 instances. So, even though in some years we may see declines in some species, overall these are the exceptions rather than the rule. We couldn't see patterns such as this without many years of data about even the "boring" (e.g. common) species, so the next time you are in doubt about the usefulness of your counts, just pull out these Top-25 tables and remember that we couldn't learn about how feeder birds are doing without all of your counts.

HAWAII TOP-10 LIST: 2 SITES

Hawaii had a small but significant representation, as the Top-10 species reported include some introduced species not observed anywhere else in North America!

- Spotted Dove
- Red-vented Bulbul
- Zebra Dove
- Java Sparrow
- Common Myna
- Japanese White-eye
- Red-crested Cardinal
- Nutmeg Mannikin
- Red-whiskered Bulbul
- Common Waxbill

2014–15 FeederWatch Season Statistics

20,880 PARTICIPANTS
131,670 CHECKLISTS
6,820,166 BIRDS REPORTED

Red-bellied Woodpecker by Karen Hass

Southwest & California Regions

TOP-25 LIST: 932 SITES REPORTING

Rank	*Species*	*Average flock size*	*Percent of sites*	*Change*
1	House Finch	7	91	
2	Dark-eyed Junco	5	79	
3	Mourning Dove	4	64	
4	American Robin	2	60	▲
5	Western Scrub-Jay	2	58	
6	Lesser Goldfinch	6	57	▲▲
7	Northern Flicker	2	55	▲
8	White-crowned Sparrow	5	54	
9	House Sparrow	5	53	
10	Anna's Hummingbird	2	50	
11	American Goldfinch	5	49	
12	Eurasian Collared-Dove	3	47	▲▲
13	Spotted Towhee	2	45	
14	Pine Siskin	6	43	
15	American Crow	3	38	▲▲
16	Downy Woodpecker	1	38	▲▲
17	White-breasted Nuthatch	1	36	▲
18	California Towhee	2	35	
19	Cooper's Hawk	1	34	▲▲
20	Yellow-rumped Warbler	1	31	▲
21	Black-capped Chickadee	2	31	▲
22	Steller's Jay	3	31	
23	"Plain" Titmouse*	1	30	
24	Bushtit	6	30	▲
25	European Starling	4	29	

* "Plain" Titmouse combines Oak Titmouse and Juniper Titmouse

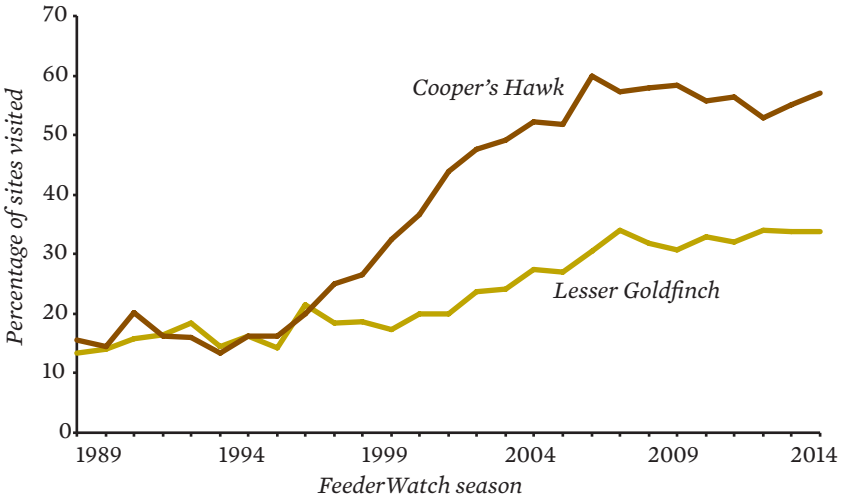
In the Southwest, no declines were reported for any species in the Top 25. Lesser Goldfinches surprised us by being much more abundant than expected, reported at 57% of sites (compared to their average of 37% since 1989). Eurasian Collared-Doves, an invasive species, continue to thrive in the Southwest, seen at 47% of sites last season. Finally, Cooper's Hawks continued their steady increase, seen at 34% of sites (compared to their average of 23% since 1989). We are glad to see that not only seed-eating feeder birds are doing well; predatory species that feed on some of our seed-eating visitors are also thriving. And remember that those seed-eating visitors are doing great, so the increase in Cooper's Hawks is not necessarily harming populations of their prey.

Cooper's Hawk by Katherine Page Burdick

Lesser Goldfinch by David Smith

The percentage of sites visited by both Cooper's Hawk and Lesser Goldfinch, a common Cooper's Hawk prey species, has increased over time.

Lesser Goldfinch and Cooper's Hawk



Southeast & South-Central Regions

Data from Project FeederWatch are showing us how bird populations are responding to changing climates on the eastern part of the continent. In the Southeast, we see some interesting patterns that mirror what biologists at the University of Wisconsin-Madison have found; warm-adapted species such as Yellow-rumped Warblers, Eastern Bluebirds, and Chipping Sparrows are becoming more common as winters are becoming milder.[1] The only species that was less abundant at feeders in the south last season, compared to the average since 1989, was the Dark-eyed Junco, a more cold-adapted species.

[1]Princé, K. and Zuckerberg, B. 2014. Climate change in our backyards: the reshuffling of North America's winter bird communities. Global Change Biology. 21:572–585.

TOP-25 LIST: 1,280 SITES REPORTING

Rank	*Species*	*Average flock size*	*Percent of sites*	*Change*
1	Northern Cardinal	3	96	
2	Carolina Chickadee	2	88	▲
3	Mourning Dove	4	88	
4	American Goldfinch	5	82	
5	Carolina Wren	1	82	▲
6	Blue Jay	2	80	
7	Tufted Titmouse	2	80	
8	House Finch	4	78	▲▲
9	Red-bellied Woodpecker	1	76	
10	Downy Woodpecker	1	68	▲
11	Northern Mockingbird	1	67	▲
12	Dark-eyed Junco	4	60	▼
13	American Robin	3	58	
14	Chipping Sparrow	6	52	▲
15	White-throated Sparrow	3	52	
16	Eastern Bluebird	2	50	▲▲
17	Yellow-rumped Warbler	2	49	▲▲
18	American Crow	3	47	▲
19	White-breasted Nuthatch	1	41	
20	Pine Siskin	7	41	▲▲
21	Brown-headed Cowbird	4	41	
22	Red-winged Blackbird	6	40	
23	Brown Thrasher	1	39	
24	Eastern Towhee	2	39	
25	House Sparrow	6	38	

Don and Carolyn Hoss

We were happy to see reports of Painted Buntings in the Southeast again last season. Don and Carolyn Hoss in Carteret, North Carolina, were able to capture this excellent photo of two males and a female on a tube feeder. Great spotting!

House Finch by Bob Vuxinic

Pacific Northwest & Rocky Mountain Regions

TOP-25 LIST: 1,035 SITES REPORTING

Rank	Species	Average flock size	Percent of sites	Change
1	Dark-eyed Junco	7	91	
2	Black-capped Chickadee	3	83	
3	Northern Flicker	2	80	▲▲
4	House Finch	4	71	
5	American Robin	2	63	
6	Downy Woodpecker	1	63	▲
7	Pine Siskin	8	62	
8	Red-breasted Nuthatch	1	62	
9	Song Sparrow	2	61	▲
10	Spotted Towhee	2	59	
11	Steller's Jay	3	58	▲
12	Anna's Hummingbird	2	49	▲▲
13	House Sparrow	6	46	▼
14	Chestnut-backed Chickadee	3	46	
15	European Starling	4	44	▼
16	American Goldfinch	4	43	▲
17	American Crow	3	40	▲
18	Varied Thrush	2	39	
19	Bushtit	9	34	▲▲
20	Hairy Woodpecker	1	33	
21	Mourning Dove	4	30	▲
22	Fox Sparrow	2	29	
23	Golden-crowned Sparrow	3	28	▲
24	Sharp-shinned Hawk	1	26	
25	Eurasian Collared-Dove	3	26	▲▲

House Sparrow by Maria Corcacas

The Northwestern region had a few surprises as well as a few patterns that were familiar from last year. Northern Flickers were unexpectedly abundant, reported at 80% of sites while, like last season, Anna's Hummingbirds and Bushtits continued to thrive, expanding their winter range northward a bit farther every year. Perhaps most interesting in this region, however, were two species that showed declines greater than 5% relative to the average since 1989: European Starlings and House Sparrows, two feeder visitors that are typically unwelcome anyway. Whether these declines will continue, and why they are occurring, is not yet clear, but we will keep an eye on these two non-natives to see what happens in the coming years.

European Starling by Maria Corcacas

Why "boring" counts matter

Participants often ask if their counts matter when they either see very few birds, the same birds, or no birds. For example, Barbara Francisco of Silver Spring, Maryland, wrote, "I see almost exactly the same number and kind of birds during each watch. How is this helpful?" The decline in the percentage of sites visited by House Sparrows and European Starlings in this region is a perfect example of why every FeederWatch count is important! If participants stopped sending counts of common sparrows or starlings or stopped sending counts when very few birds visited their feeders, we would not know when those species or other species were declining. For researchers, there are no boring birds or boring counts. Every count holds potentially valuable information even when it might not be studied for years to come.

Alaska & Northern Canada

This year in Alaska and Northern Canada, we noticed a pattern that highlights the irruptive nature of Common Redpolls: compared to the average across all previous seasons, redpolls showed a big decline. Nonetheless, this season they were still more abundant at feeders than last year (see the graph below). Perhaps next season they will show an even bigger increase. These birds feed on boreal forest cone crops and track the abundance of winter food resources. When the cone crops are less abundant, these birds move to take advantage of the seed from feeders. The birds simply keep moving south until adequate food supplies are located. The better the cone crop in the boreal forest, the more likely that finches, including siskins, redpolls, and crossbills, will brave the winter in Alaska and Northern Canada.

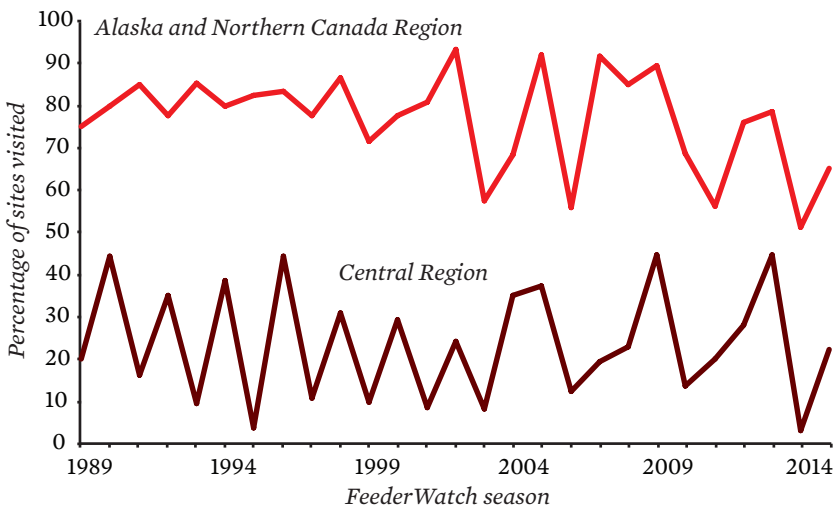
Common Redpolls by Monika Wood

Common Redpolls show a pattern of oscillating abundance that is similar in the Central Region and in the Alaska and Northern Canada Region.

TOP-25 LIST: 49 SITES REPORTING

Rank	*Species*	*Average flock size*	*Percent of sites*	*Change*
1	Black-capped Chickadee	4	82	
2	Common Redpoll	11	65	▼▼
3	Pine Grosbeak	6	65	▲
4	Common Raven	2	59	▲▲
5	Hairy Woodpecker	1	57	▲
6	Red-breasted Nuthatch	2	55	
7	Boreal Chickadee	2	53	
8	Black-billed Magpie	2	53	
9	Dark-eyed Junco	4	49	
10	Gray Jay	2	49	▲▲
11	Downy Woodpecker	1	47	▼
12	Steller's Jay	3	37	▲
13	Pine Siskin	10	35	
14	Hoary Redpoll	6	22	
15	Bohemian Waxwing	26	20	▲
16	White-winged Crossbill	4	20	▲▲
17	Chestnut-backed Chickadee	3	18	
18	American Robin	3	16	▲
19	Varied Thrush	2	16	
20	Bald Eagle	2	14	
21	Northwestern Crow	8	12	
22	Northern Shrike	1	12	
23	Ruffed Grouse	2	10	
24	Song Sparrow	1	10	
25	Red Crossbill	5	8	

Common Redpoll Abundance



North-Central & Mid-Central Regions

TOP-25 LIST: 711 SITES REPORTING

Rank	*Species*	*Average flock size*	*Percent of sites*	*Change*
1	Chickadee*	3	94	
2	Dark-eyed Junco	5	93	
3	Downy Woodpecker	2	92	
4	Blue Jay	3	86	
5	White-breasted Nuthatch	1	82	▲
6	American Goldfinch	6	77	
7	Northern Cardinal	3	74	
8	Hairy Woodpecker	1	72	▲
9	House Finch	4	71	▲
10	House Sparrow	8	70	▼
11	Red-bellied Woodpecker	1	70	▲▲
12	American Robin	3	59	▲
13	Mourning Dove	3	57	
14	European Starling	5	53	▼
15	American Crow	2	48	
16	Northern Flicker	1	41	
17	Purple Finch	4	40	
18	Common Grackle	4	32	▼▼
19	Tufted Titmouse	2	32	
20	White-throated Sparrow	3	31	▲
21	Pine Siskin	5	31	
22	American Tree Sparrow	3	28	
23	Red-winged Blackbird	4	27	
24	Pileated Woodpecker	1	27	▲
25	Cooper's Hawk	1	23	▲

* Chickadee combines Black-capped Chickadee and Carolina Chickadee

Populations in the Central Region remained consistent for their top four species: chickadees (both Black-capped and Carolina), Dark-eyed Juncos, Downy Woodpeckers, and Blue Jays. As always, we are glad to see that populations are stable for some of our favorite feeder visitors.

Several species that share the foraging habit of collecting bugs from tree trunks are doing particularly well: White-breasted Nuthatches, Hairy Woodpeckers, and especially Red-bellied Woodpeckers, which show the biggest increase. A previous study by scientists from the Cornell Lab[1] showed that these species were doing well in areas that had experienced invasions of Emerald Ash Borers. Why? The larvae of these beetles kill ash trees, but they are themselves a great food resource for woodpeckers and nuthatches, and the beetles leave dead trees in their wake that offer nesting cavities for woodpeckers and nuthatches as well. So, our regional roundup may be hinting at some fascinating biological interactions that take place among ash trees, an invasive beetle, and our feeder birds.

[1]Koenig, W. D., Liebhold, A. M., Bonter, D. N., Hochachka, W. M., and Dickinson, J. L. 2013. Effects of the emerald ash borer invasion on four species of birds. *Biological Invasions*, 15, 2095–2103.

Common Grackles continue to decline in parts of their range. The cause remains uncertain.

Ashley Versluis

Mid-Atlantic, East-Central, Northeast, Great Lakes, Allegheny, & Atlantic Canada Regions

Much like in the Central Region, in the Northeast we see that the top four species have not changed in the percentage of sites visited compared to their average since 1989. Northern Cardinals, however, continued to slowly but steadily increase their range, now seen at 90% of sites in the Northeast (compared to their average of 85% since 1989). More striking changes are evident in Red-bellied Woodpeckers, Hairy Woodpeckers, and Carolina Wrens, which have increased the percentage of sites they visit by more than 10% compared to the average since 1989. Pine Siskins also showed a big increase this year compared to previous years because this species moved south of the boreal forest in large numbers.

TOP-25 LIST: 6,150 SITES REPORTING

Rank	*Species*	*Average flock size*	*Percent of sites*	*Change*
1	Chickadee*	3	97	
2	Dark-eyed Junco	5	95	
3	Downy Woodpecker	2	92	
4	Mourning Dove	5	91	
5	Northern Cardinal	3	90	▲
6	Blue Jay	3	90	
7	American Goldfinch	5	88	
8	White-breasted Nuthatch	1	87	▲
9	House Finch	4	73	
10	Red-bellied Woodpecker	1	70	▲▲
11	Tufted Titmouse	2	68	
12	Hairy Woodpecker	1	65	▲▲
13	European Starling	4	63	
14	House Sparrow	7	62	
15	American Robin	2	57	▲
16	American Crow	3	54	
17	White-throated Sparrow	3	51	▲
18	Carolina Wren	1	48	▲▲
19	Song Sparrow	2	47	
20	Common Grackle	5	44	▼
21	Red-winged Blackbird	4	41	
22	American Tree Sparrow	3	40	
23	Pine Siskin	5	34	▲▲
24	Cooper's Hawk	1	34	▲▲
25	Purple Finch	2	33	

* Chickadee combines Black-capped Chickadee and Carolina Chickadee

Pine Siskins by Pam Koch

Kathleen Spicer

Right: One very special report came from Kathleen Spicer's feeders in Apple River, Nova Scotia: a Fieldfare! This species should be in Europe, Iceland, and Central Siberia, so we were all surprised when this rare report came in. There are only five prior documented sightings of a Fieldfare in Nova Scotia, and only two that were photographed! This individual was first spotted in an apple tree in Kathleen's yard during a snowstorm on January 31, and it was last observed on April 13. Kathleen told us that more than 180 people came to see the bird from 7 provinces and 11 states—in terrible winter conditions! She wrote, "It was really exciting to watch such a rare bird and to meet so many birders who were so overjoyed to see it."

Siskin movements tied to weather patterns

FeederWatchers help biologists solve the puzzle of irruptive bird movements

BY EMMA GREIG, CORNELL LAB OF ORNITHOLOGY

This past FeederWatch season was an irruptive year for Pine Siskins, which means that many individuals moved from their more typical winter habitat in the northern boreal forests of Canada to backyard feeders across the U.S. and southern Canada. These irruptive events have been observed for many decades by biologists, but their underlying cause has remained enigmatic; biologists know it has to do with declines in food resources in the north, but they have been unable to predict when and why those declines occur and ultimately why some years are irruption years but others are not.

Data collected by FeederWatch participants have helped biologists solve the puzzle of irruptive bird movements. The work was a collaborative effort among Walt Koenig, a senior scientist at the Cornell Lab, Ben Zuckerberg, a former Research Associate at the Cornell Lab who is now at the University of Wisconsin, and colleagues from the University of Utah and the U.S. Geological Survey. It took more than 24 years of data from participants, totaling more than 2 million Pine Siskin observations, to find the answer. Remember those numbers the next time you wonder why it is valuable to participate in Project FeederWatch year after year!

The researchers compared data on occurrence of Pine Siskins with data on climate and weather from large databases and found that the movements of the birds were predicted by the weather several years prior. One pattern they discovered was that north-to-south irruption patterns tended to be associated with wet conditions in Canada and dry conditions in the U.S. Similarly, west-to-east irruptions were associated with dry conditions in the western U.S. and wet conditions in the east. In all cases, the siskins tended to move to the areas that had been wet two to three years prior, and this movement was associated with the more favorable seed crop at the time the birds moved.

The details of these movement patterns are complex, but the take-home message is simple. These once enigmatic irruptive movements, driven by variable food supply, can be predicted by climate patterns that are well understood by climatologists. This result makes a lot of sense if you consider that weather patterns impact the "masting" (synchronous seed production) of trees, which in turns impacts the resources available to birds. But never before has this relationship been shown in such a definitive and quantitative way. Thanks to all the participants of Project FeederWatch for making this research possible!

Strong, C., Zuckerberg, B., Betancourt, J.L., and Koenig, W. D. 2015. Climatic dipoles drive two principal modes of North American boreal bird irruption. *Proceedings of National Academy of Sciences*, 112:21.

Pine Siskin by Donna Allard

Third annual BirdSpotter photo contest

BY EMMA GREIG, CORNELL LAB OF ORNITHOLOGY

Last season Project FeederWatch hosted its third annual BirdSpotter photo contest, and we shook things up a bit by choosing *two* weekly winners: a peoples' choice and a judges' choice. We had some fantastic entries, and a few of the weekly winners are shown here. See all the award winners on our website at **feederwatch.org/birdspotter2014** (click on "Browse Photos").

The contest this past season was sponsored by Vanguard, a company that provided amazing prizes including binoculars for the weekly winners. The grand prize included a pair of Endeavor ED II 8x42 binoculars, an Endeavor HD 82A spotting scope, a framed Charlie Harper print, plus more goodies from both Vanguard and the Cornell Lab.

We want to thank all of the contestants who sent in such great photos and Vanguard for providing such great prizes. Get your cameras ready for the upcoming season: the contest is open to everyone, and it is free to enter, so send your best shots! Learn more about the contest at **feederwatch.org/birdspotter.**

Red-bellied Woodpecker by Eileen Chorba

White-breasted Nuthatch on homemade feeder by Gary Mueller

Last year's grand prize winning Baltimore Oriole by Diane Marshman

Purple Finch by Gillian Henry