The Christmas Bird Count and Citizen Science

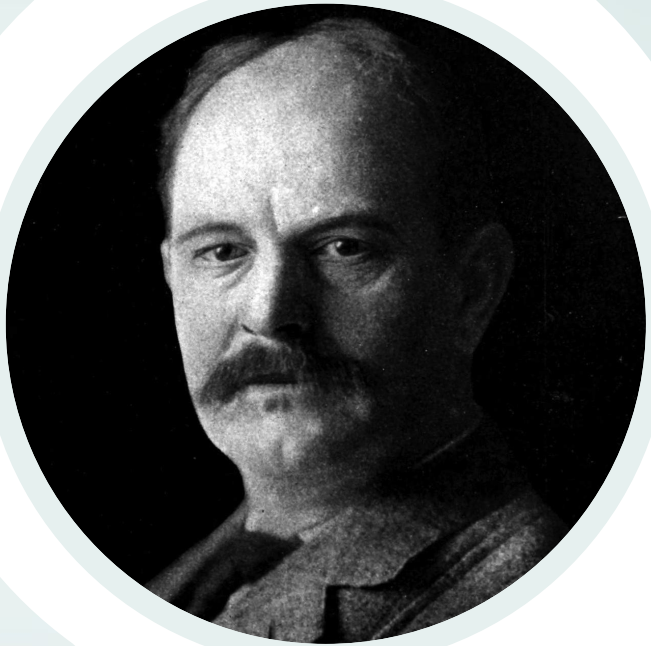
Early Citizen Science

- 1833 - the term “scientist” is first coined
- 1880 - Lighthouse Surveys
- 1890 - National Weather Service Cooperative Observer Program
- 1900 - The Christmas Bird Count

Frank Chapman

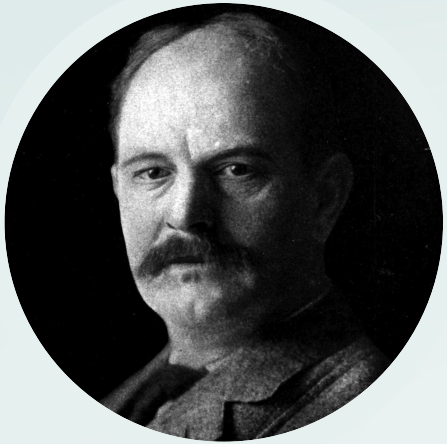
(1864 – 1945)

American ornithologist and pioneering writer of field guides.



THE WOMAN BEHIND THE GUN.

Audubon



IT is not many years ago that sportsmen were accustomed to meet on Christmas Day, 'choose sides,' and then, as representatives of the two bands resulting, hie them to the fields and woods on the cheerful mission of killing practically everything in fur or feathers that crossed their path—if they could.

Now BIRD-LORE proposes a new kind of Christmas side hunt, in the form of a Christmas bird-census, and we hope that all our readers who have the opportunity will aid us in making it a success by spending a portion of Christmas Day with the birds and sending a report of their 'hunt' to BIRD-LORE before they retire that night.

A Christmas Bird-Census

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These exceptional opportunities for winning the laurels of the chase were termed 'side hunts,' and reports of the hundreds of non-game birds which were sometimes slaughtered during a single hunt were often published in our leading sportsmen's journals, with perhaps a word of editorial commendation for the winning side. We are not certain that the side hunt is wholly a thing of the past, but we feel assured that no reputable sportsman's journal of today would venture to publish an account of one, unless it were to condemn it; and this very radical change of tone is one of the significant signs of the times.

Now BIRD-LORE proposes a new kind of Christmas side hunt, in the form of a Christmas bird-census, and we hope that all our readers who have the opportunity will aid us in making it a success by spending a portion of Christmas Day with the birds and sending a report of their 'hunt' to BIRD-LORE before they retire that night. Such reports should be headed by the locality, hour of starting and of returning, character of the weather, direction and force of the wind, and the temperature; the latter taken when starting. The birds observed should then be added, following the order in which they are given in the A. O. U. 'Check List,' with, if possible, the exact or approximate number of individuals of each species observed.

Promptness in sending these lists to BIRD-LORE (at Englewood, N. J.) is urged in order that the best of them may be published in our February number, where they will be not only of interest to other participants in the 'hunt,' but will also constitute, in a measure, a census of Christmas bird-life.

BHL
Biodiversity Heritage Library

The first Christmas Bird Count

"Christmas Bird-Census"

December 25, 1900

25 Locations

27 Participants

~18,500 individual birds

89 species total

KEENE, N. H.

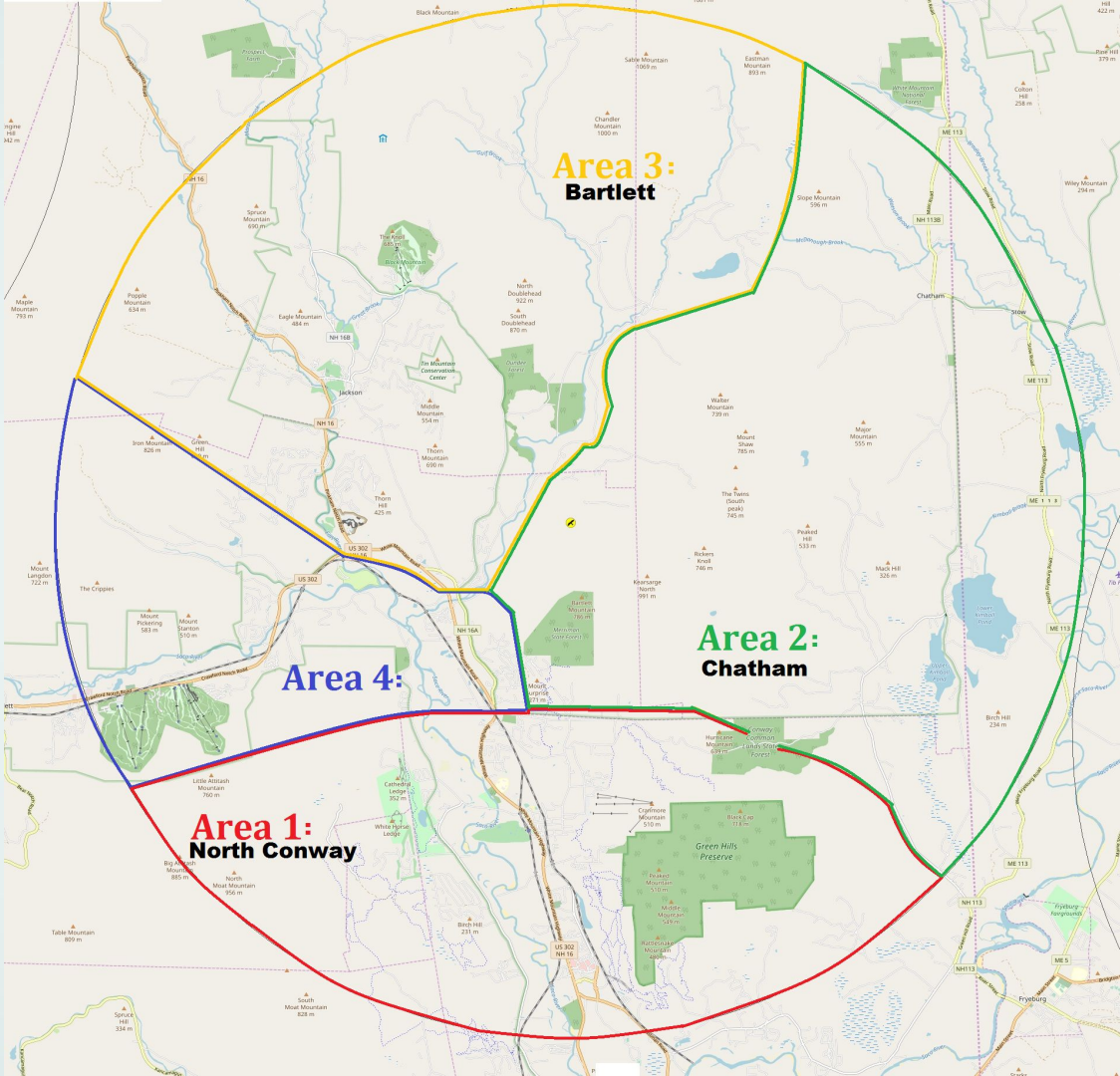
Time, 10.30 A. M. to 1.30 P. M. Clear; wind, northwest, very light; temp., 32°. Crow, 1; Northern Shrike, 1; Chickadee, 16. Total, 3 species, 18 individuals.—CLARENCE MORRISON BROOKS.

The Christmas Bird Census

The unpleasant weather so prevalent on Christmas day doubtless prevented many observers from taking the field, and explains the number of notes made on December 26. Compared with the results of the census made last year the present record also shows a marked absence of such northern birds as Pine Grosbeaks, Crossbills, and Redpolls. Northern Shrikes are apparently less common this year, and several species, notably the Robin, appear to be wintering further north than usual.

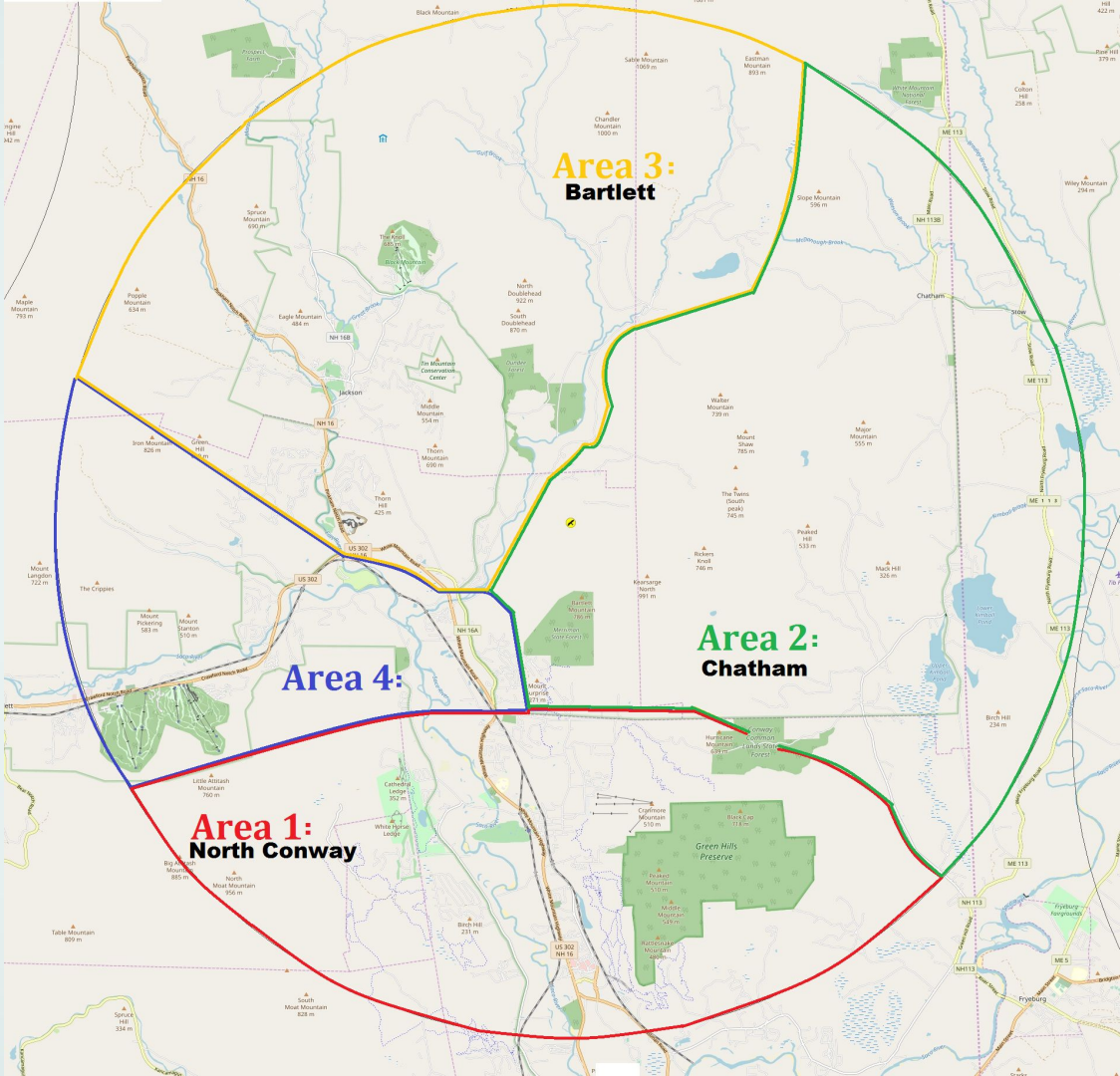
The North Conway Christmas Bird Count

- Conducted every year since 1989
- Covers ~177^2 miles
- 70,133 birds counted
- 84 different species



2019:

- 42 participants
- 1,610 birds counted
- 32 species
- Bald eagle spotting on Westside Road
- New records set
  - American crow (402)
  - American robin (219)
  - Canada goose (48)

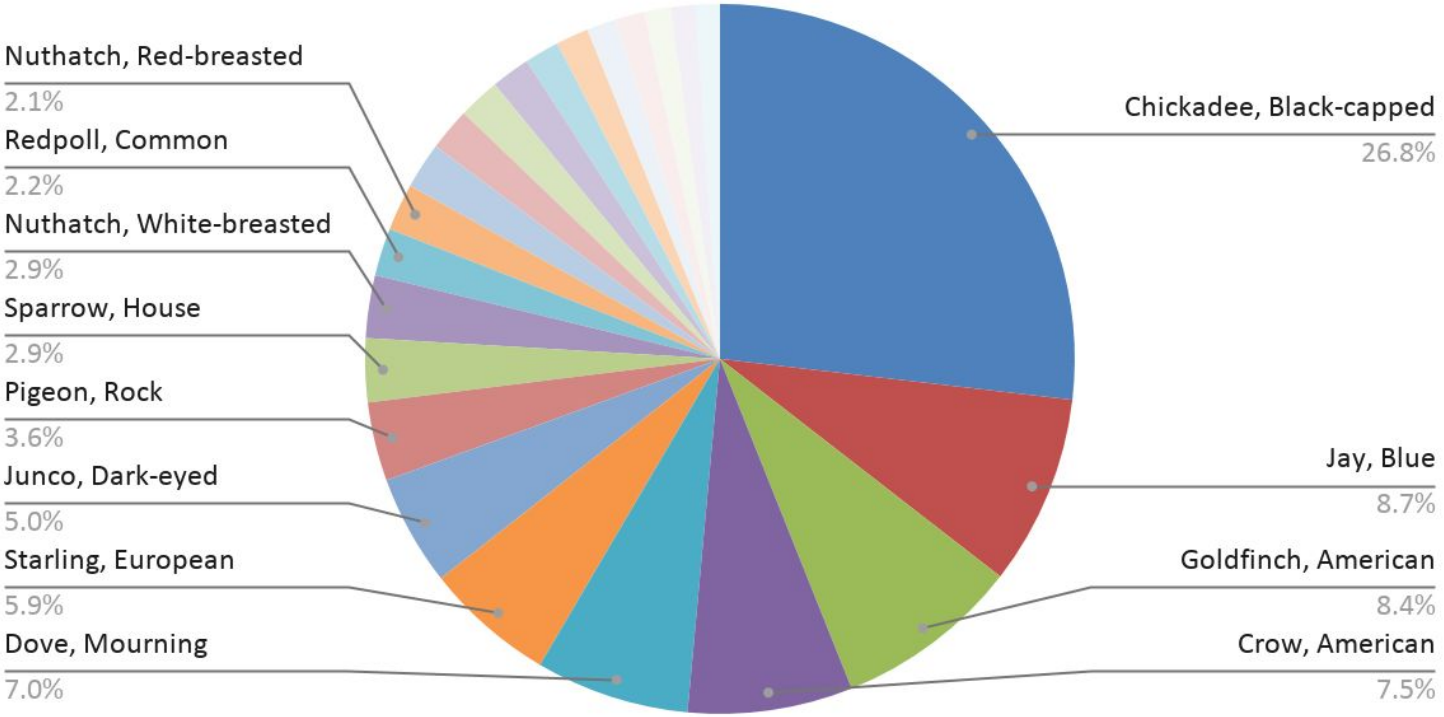


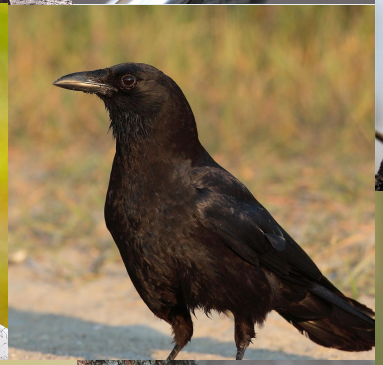
Top Species

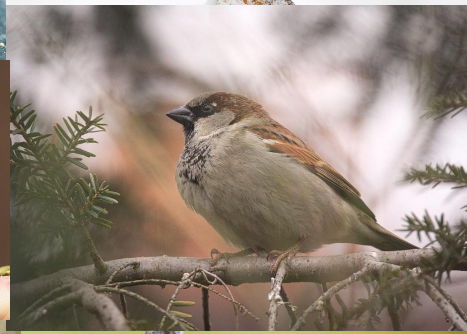
by average sightings/year

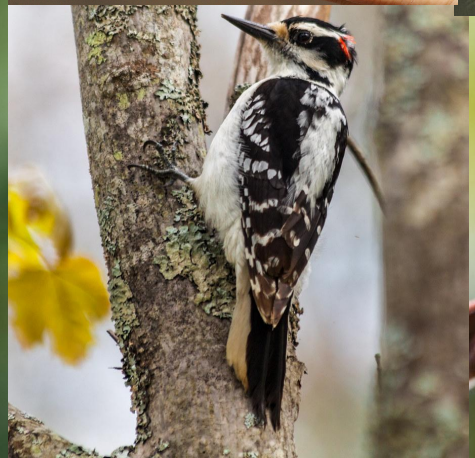
Species Ratios Over 31 Years

data truncated to exclude species <1%









“From Extirpation to Proliferation”

1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Total
0	0	0	0	0	0	0	0	1	0	1

1999	2000	2001	2002	2003	2004	2005	2007	2006	2008	Total
19	0	0	30	185	181	75	72	6	65	633

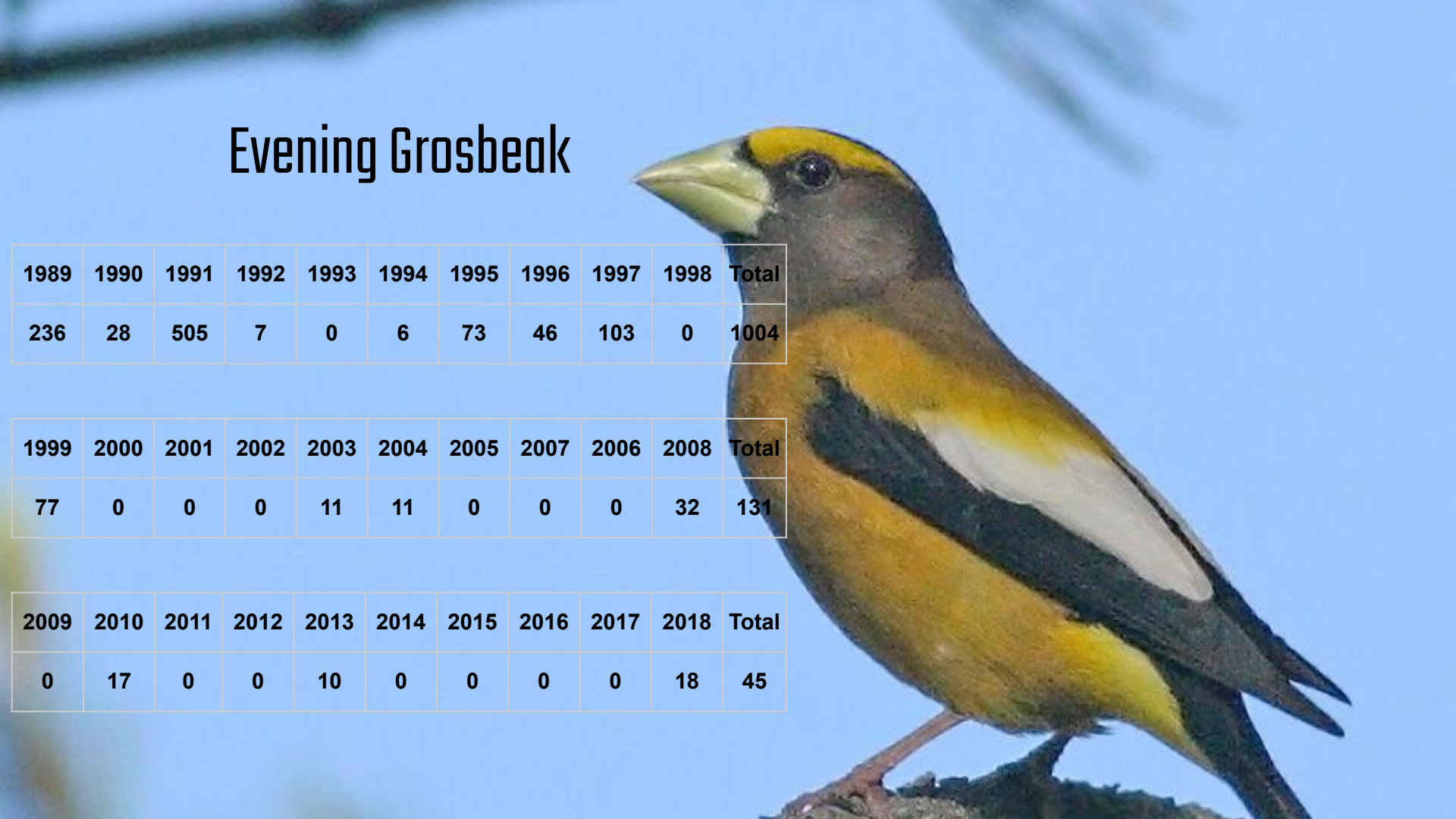
2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
116	64	0	75	75	36	31	86	7	128	618

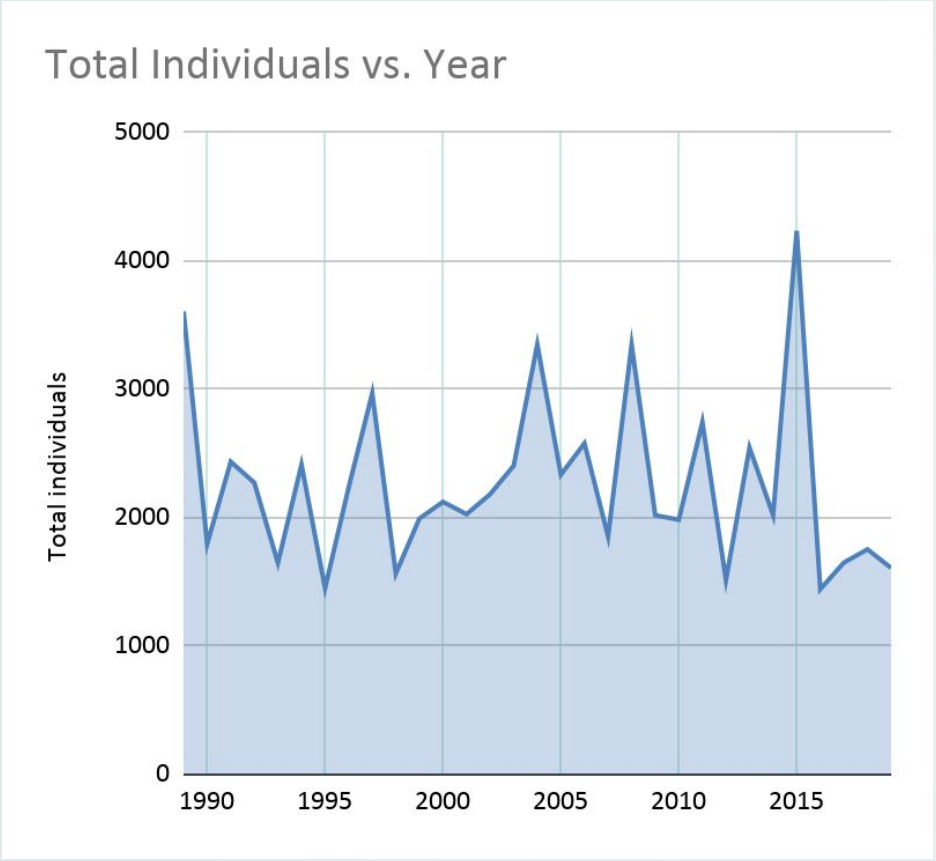
Evening Grosbeak

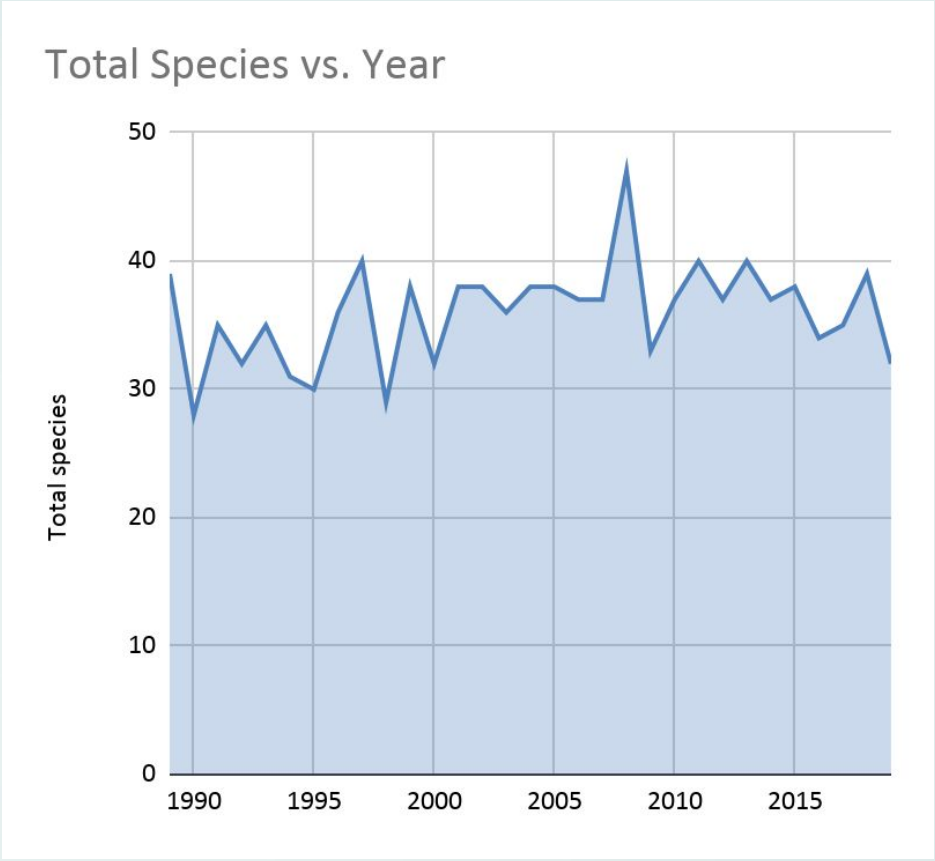
1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Total
236	28	505	7	0	6	73	46	103	0	1004

1999	2000	2001	2002	2003	2004	2005	2007	2006	2008	Total
77	0	0	0	11	11	0	0	0	32	131

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
0	17	0	0	10	0	0	0	0	18	45







25% of variation is explained by event participation

CBC as a scientific tool

Weaknesses

- Incentivizes rare finds
- Exclusive to late December - early January

Strengths

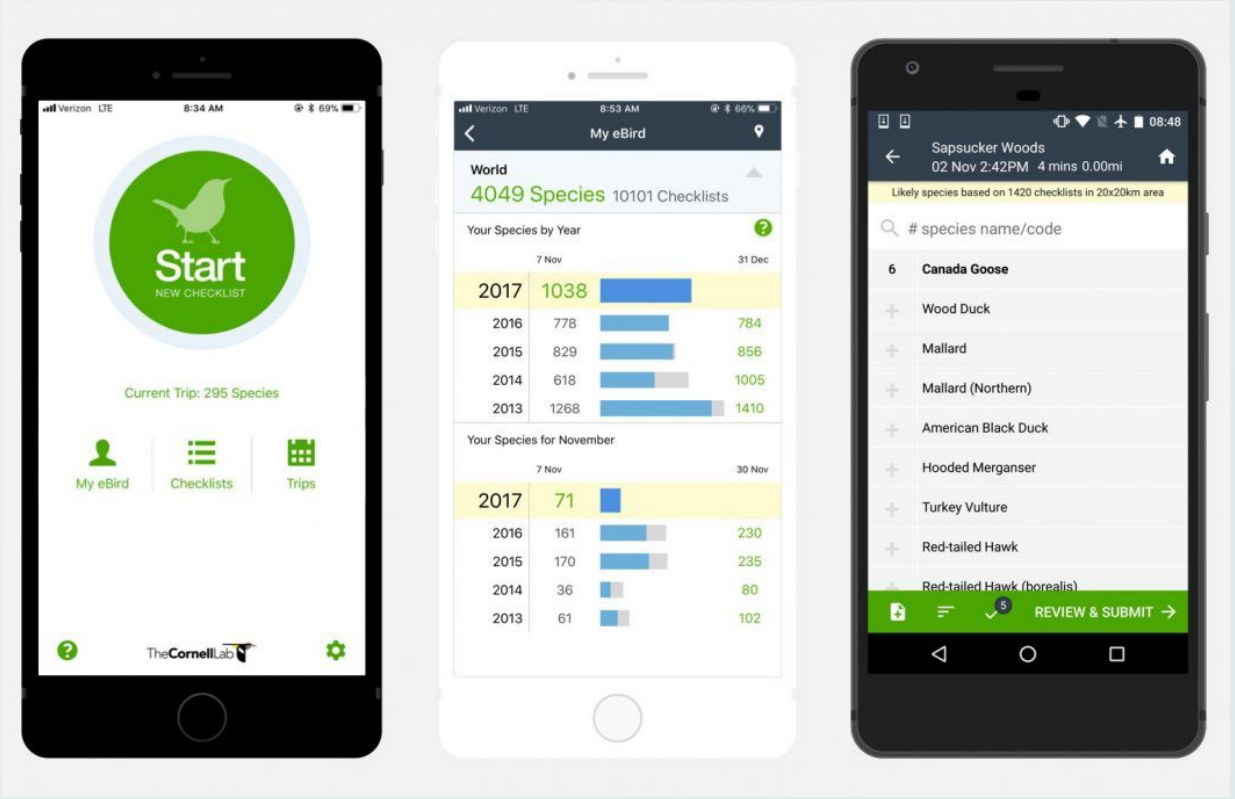
- Ongoing since 1900
- Consistent count area
- Factors covariates
- Enthusiastic participants

eBird takes flight

The world's largest citizen science project.

eBird

- Keeps track of what birds you've seen and where.
- Uses that information to better define species characteristics.
- Allows you to "explore" an area.
- Works with or without a smartphone.



eBird is big

420,000 users

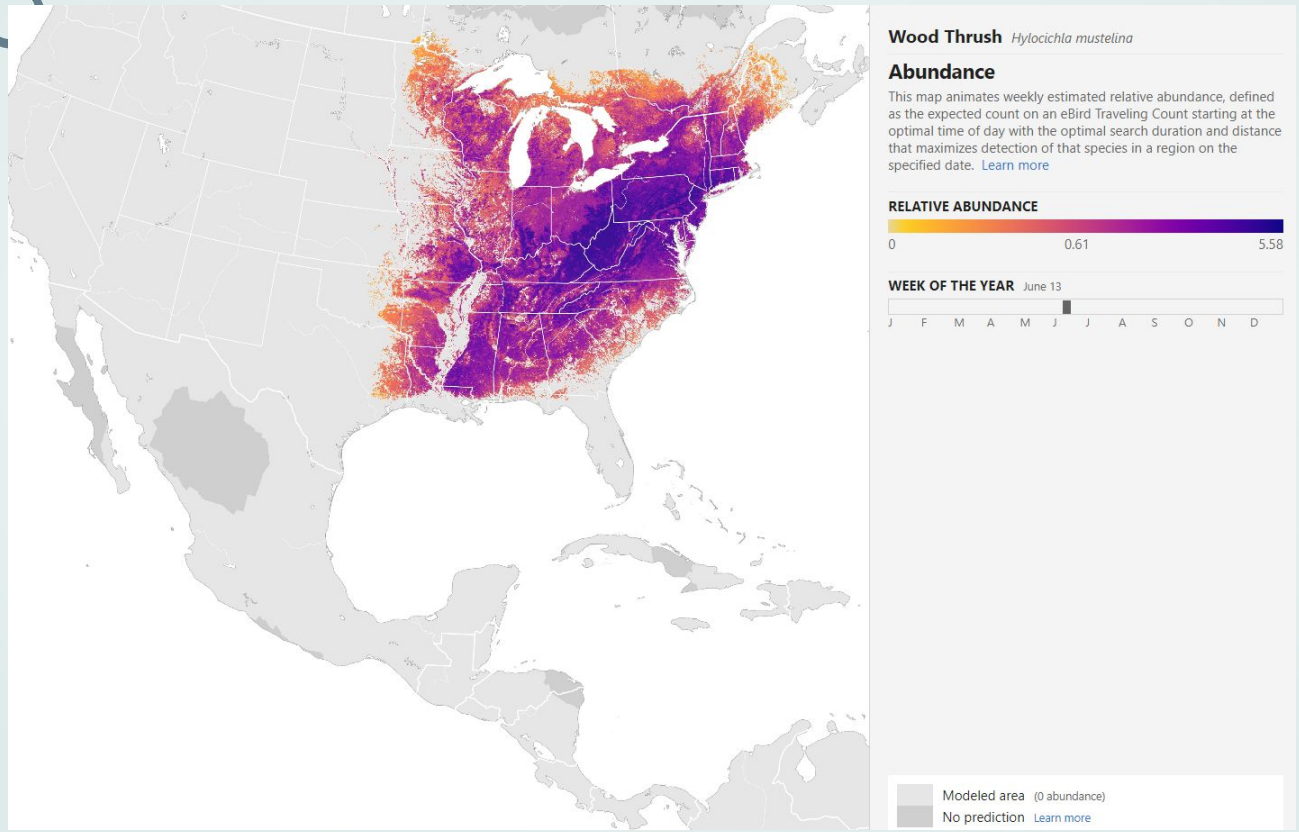
>10 million hours

590 million observations

>220 peer reviewed publications

4.3 million photos and 120,000 sounds

The Power of eBird

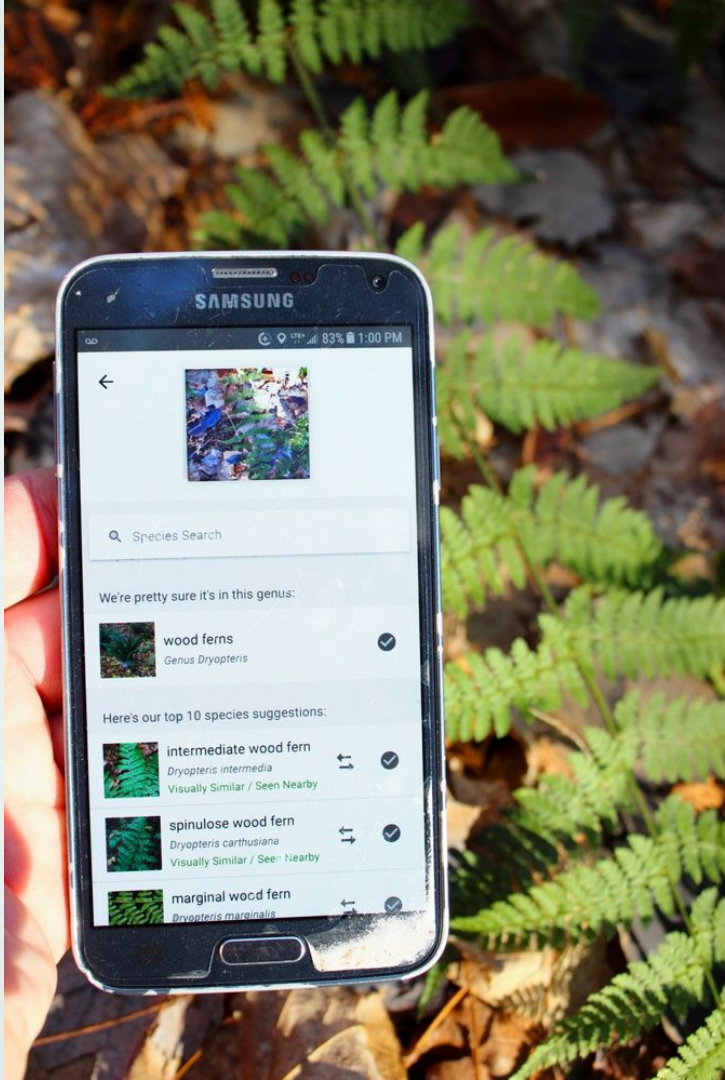


iNaturalist

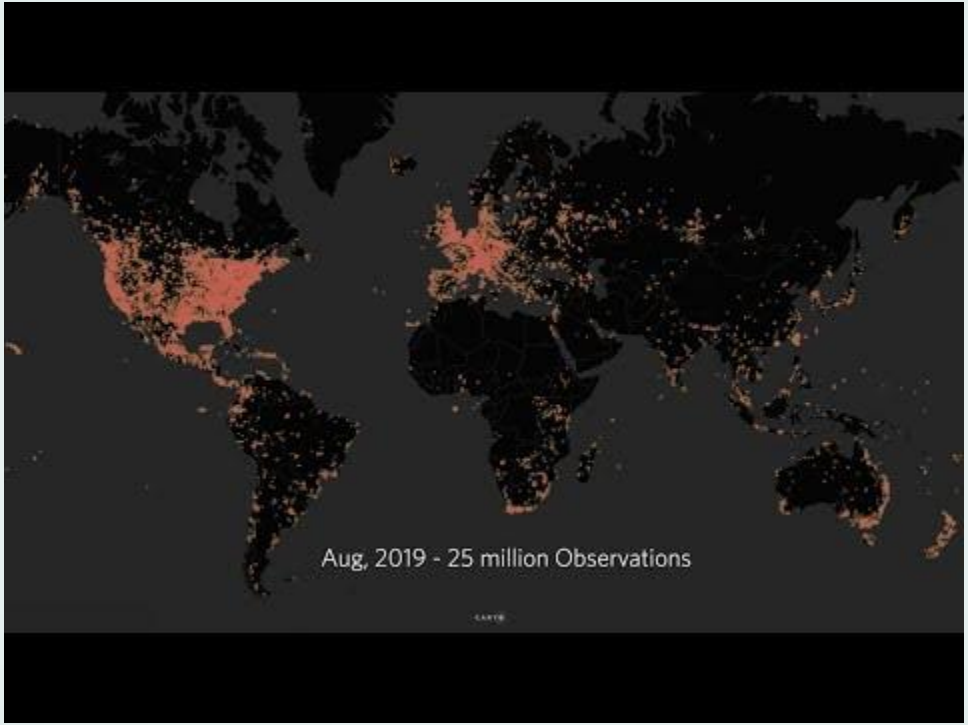
A citizen science social media.

How it works

1. Take a picture.
2. iNaturalist will give you likely identification suggestions.
3. Choose your identification for the species.
4. Once posted, identifiers can agree or disagree with the identification.
5. Once ⅔ identifiers agree on a species identification, it becomes “Research Grade”



iNaturalist Projects


Aug, 2019 - 25 million Observations

Takeaways

- There’s more information than ever and it’s easier to access.
- Science is becoming a more collective community.
- We can now do incredible things by being small.
- It’s more popular (and fun!) than ever.
- Sign up for the CBC mailing list!

Questions?

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