

Canary in the Coal Mine:

How Monitoring
Birds Impacts
Conservation
Efforts



\$30 million annual budget

250+ employees

110,000 donors/members

1.2 million in communication stream



For more than 100 years,
Cornell Lab known for
scientific excellence, outreach and
conservation

Conservation

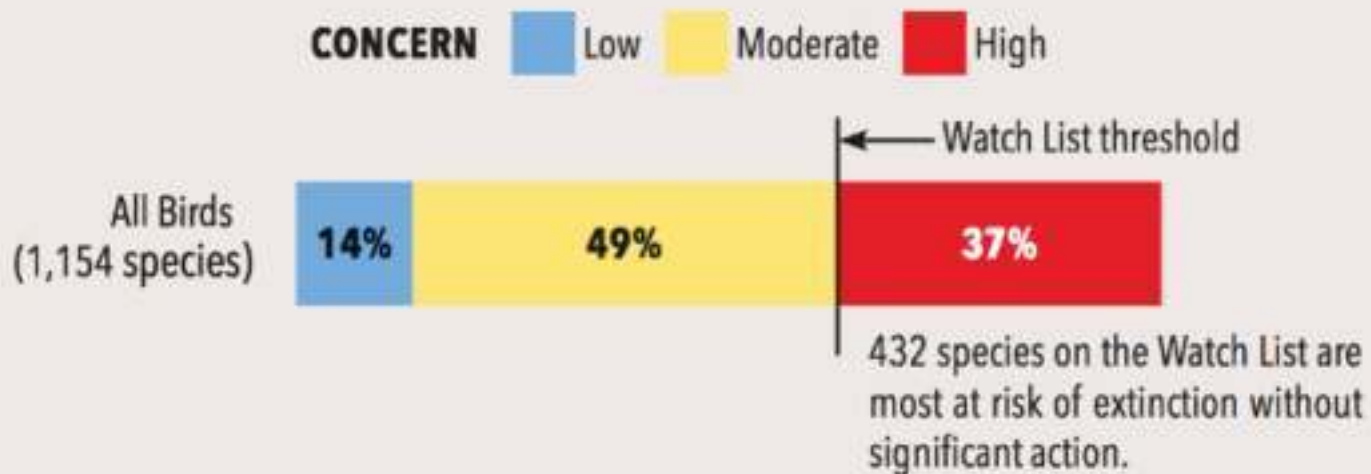
Many types of monitoring, two described today:

eBird – Any bird, anywhere in the world, year-round

Project FeederWatch – feeder birds, Nov. – April
US and Canada

State of North America's Birds

ONE-THIRD OF ALL NORTH AMERICAN BIRD SPECIES NEED **URGENT CONSERVATION ACTION**



eBird

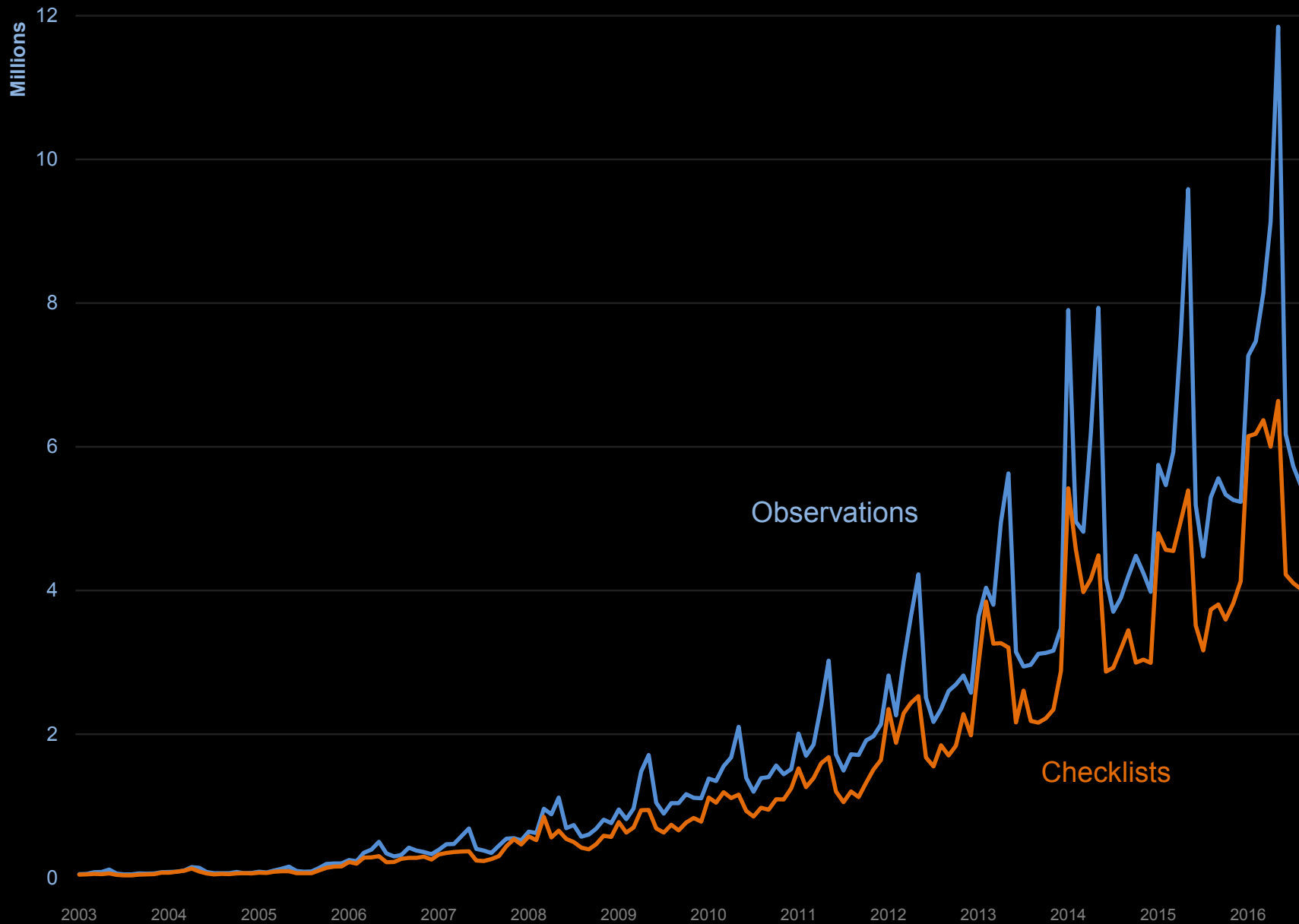
- 2.9 million eBird users last year
- 562.2 million observations
- 40.3 million checklists
- 10,407 species (98% of bird species)
- **39.9 million hours in the field**



2010



Growth in Monthly eBird Observations and Checklists



Maricopa Change Location

Arizona, US

All Years Set

Overview Hotspots Recent Visits Illustrated Checklist

438 Species | 104,247 Checklists Updated 118 mins ago

Last Seen First Seen High Counts Bar Charts Show All Details

	SPECIES NAME	COUNT	DATE	BY
1	Eurasian Collared-Dove	1	6 Nov 2018	Shawn Zack
2	Inca Dove	2	6 Nov 2018	Shawn Zack
3	Anna's Hummingbird	1	6 Nov 2018	Shawn Zack
	Hummingbird sp.	1	6 Nov 2018	Shawn Zack
4	Gila Woodpecker	1	6 Nov 2018	Shawn Zack
5	Northern Mockingbird	1	6 Nov 2018	Shawn Zack
6	European Starling	2	6 Nov 2018	Shawn Zack
7	Great-tailed Grackle	5	6 Nov 2018	Shawn Zack
8	Pied-billed Grebe	1	6 Nov 2018	Rachel Stringham
9	Mourning Dove	15	6 Nov 2018	Rachel Stringham
10	Common Gallinule	1	6 Nov 2018	Rachel Stringham
11	American Coot	10	6 Nov 2018	Rachel Stringham



Recent Visits

Checklists submitted within the last hour are not shown.

Observer	DATE		SPECIES
Jeanette Otis	7 Nov 2018	♀	1
Steve boyack	7 Nov 2018	♀	10
Donna Mathison	7 Nov 2018	♀	6
Dale Clark	7 Nov 2018	♀	29
Jeanne Burns	7 Nov 2018	♀	22
Darrel Wikler	7 Nov 2018	♀	43

Hotspot: Date: Location:



Zoom Tool

MAP TYPE

- Street
- Terrain
- Satellite
- Hybrid

FILTER BY RECENT ACTIVITY

- All Hotspots
- Past Month
- Past Week

SPECIES OBSERVED

1

500+
400
300
200
150
100
50
10
1
0

Explore Birding Hotspots



Hotspot Map

Desert Botanical Garden

Maricopa County, Arizona, US — Get Directions

All Months All Years Set

Submit Data



Overview Recent Visits Illustrated Checklist

203 Species | 2397 Checklists

Updated 7 sec ago

Last Seen First Seen High Counts Bar Charts Printable Checklist

Show All Details

	SPECIES NAME	COUNT	DATE	BY	
1	Mallard	7	7 Nov 2018	Vince Maglio	●
2	Gambel's Quail	7	7 Nov 2018	Vince Maglio	
3	Mourning Dove	6	7 Nov 2018	Vince Maglio	
4	Anna's Hummingbird	2	7 Nov 2018	Vince Maglio	
5	Costa's Hummingbird	1	7 Nov 2018	Vince Maglio	
6	Neotropical Cormorant	1	7 Nov 2018	Vince Maglio	●
7	Great Egret	1	7 Nov 2018	Vince Maglio	●
8	Gila Woodpecker	4	7 Nov 2018	Vince Maglio	
9	Gilded Flicker	1	7 Nov 2018	Vince Maglio	
10	Rosy-faced Lovebird	2	7 Nov 2018	Vince Maglio	
11	Vardin	2	7 Nov 2018	Vince Maglio	
12	Cactus Wren	1	7 Nov 2018	Vince Maglio	



Recent Visits

Checklist submitted within the last hour are not shown.

OBSERVER	DATE	SPECIES
Vince Maglio	7 Nov 2018	18
Don Witter	5 Nov 2018	35
Heather Luedicke	3 Nov 2018	20
Shawn Zack	2 Nov 2018	20
Mike Grant	1 Nov 2018	16
Don Witter	1 Nov 2018	17

Data quality

Data Quality Is Very Important

- Automated data quality filters
- Reviewer Network—1500 volunteers

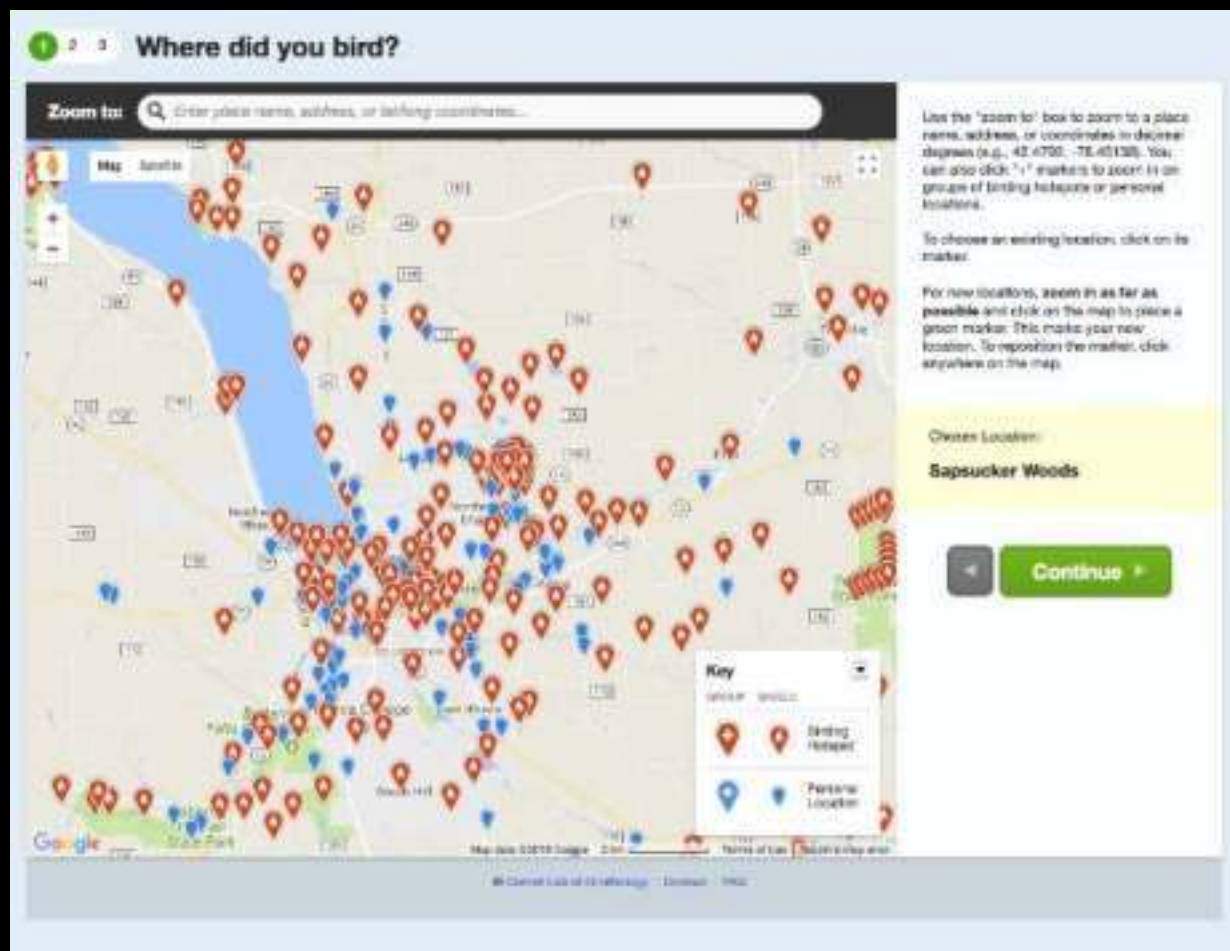


Dogbird

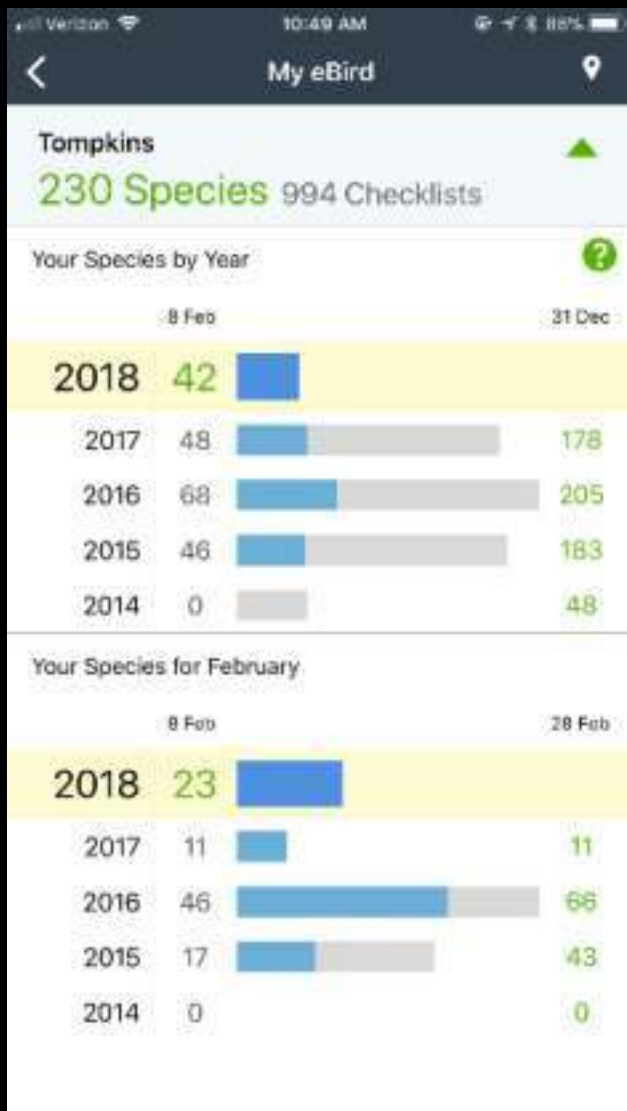


Catbird

eBird Mobile



View lists



Tracking sightings

My eBird

My eBird

Manage your personal lists, observations, locations, and account settings.

Your Life List: **4687 Species**

Updated 3 sec ago.

Your Stats

	Life	Year	Month
Total Species	4687	855	123
Total Checklists	11967	1426	78
ABA Area Total Ticks	4121	715	123

Your Lists

Major Regions	Country	State/Province	County
	Life	Year	Total County Ticks
Western	441	441	--
Oromia	404	0	--
Massachusetts	395	94	2933
Napo	387	0	--
Pichincha	358	0	--
Orellana	303	0	--
El Beni	284	0	--
Queensland	279	0	510
Sichuan	278	0	--
Vaupés	276	0	--
New Jersey	276	2	517

Your profile

Share your activity with the eBird community.

Support eBird



My Checklists

[Summarize My Observations](#)

Create frequency, abundance, and other tables of my observations.

[Manage My Checklists](#)

View, edit, print, share or download my checklists.

[My Shared Checklists](#)

Checklists that other eBird users have shared with me

[Manage My Locations](#)

Edit existing locations

[Import Data](#)

Import data from a spreadsheet, database, or birding program.

[Manage Imported Data](#)

View, fix, and submit your imported data

[Download my Data](#)

Download and save your data on your computer

[Manage My Alerts](#)

Modify or view your eBird Alerts

eBird Profiles



Ian Davies

Orangetown, New York, United States

Regional Reviewer for 7 Regions
Hampster Patrol for World

eBirder since 23 May 2007

Oldest checklist: 5 Jun 1998

Oldest media: 20 Jul 2008

<https://www.ornithology.com/profile/ian-davies/>

I work at the eBird Project Coordinator at the Cornell Lab in Ithaca. I focus on outreach, engagement, and specific project coordination and management, while also doing my best to assist in making sure that the day-to-day pieces of eBird keep seeking birds...
[Show more](#)

Your profile URL:

<https://www.ornithology.com/profile/MT1334682>

Latest Photos (World) [View All](#)



Blue-spurred Wood-Quail

Turdus ulia

Empire State Thruway Forest NP—Entrance



Dusky-blue Flycatcher

Myiobus cinerascens

Empire State Thruway Forest NP—Entrance



Perit's Cuckoo-shrike

Campylopterus curvipennis

Region: **World** [Change Region](#)

[PUBLIC](#) [Edit Profile](#)

4687

Species observed

8757

Complete checklists
(11607 total)

2664

Samples of photos
(7330 Observations)

488

Species w/ audio
(658 Observations)



Latest Checklists (World)

1
Species

12 Sep 2018 12:25
Sagawake Woods—Lab Building
Area
New York, United States

1
Species

11 Sep 2018 10:05
Ow/Red Hill Rd.
New York, United States

1
Species

10 Sep 2018 19:27
NY-13 S, where US-NY
142-4636, -76-4990
New York, United States

Find more birds

Explore Species

DATA FOR:  World

Change species

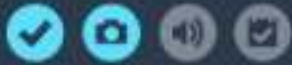
Crissal Thrasher

Chilean Mockingbird

Passeriformes > Mimidae

Sage Thrasher

Oreoscoptes montanus



SEEN PHOTO AUDIO YEAR



ADULT © Brian Sullivan · eBird 52801796 · Macaulay Library 96, 28202761



ADULT



ADULT

Identification

POWERED BY MERLIN

The smallest thrasher; crisp black streaking on underparts unlike most other western thrashers. Grayish brown with buffy wash on belly and sides and thin white wingbars. Long tail. Small, slightly downcurved bill. In flight, look for white corners on tail. True to its name, shows a strong affinity for sagebrush. Singing males perch conspicuously, otherwise furtive, running around on the ground in search of insects. Song is a long, loose series of musical chirps and whistles.

Listen

+1 more audio recording

Explore Species

DATA FOR: [World](#)

[Change species](#)

[Crissal Thrasher](#)

[Chilean Mockingbird](#)

Statistics

	Observations	With photos	With audio
You	2	1	0
eBird	44,734	2,823	111

Range Map

[Large map](#)



Weekly Bar Chart

[Choose a region](#) to view Weekly Bar Chart

Media [All media](#) [My media](#)

Top photos [View all](#)



Explore Species

DATA FOR: [Idaho, United States \(US\)](#) Change species [← Crissal Thrasher](#) [Chilean Mockingbird →](#)

Statistics

	✓ Observations	📷 With photos	🔊 With audio
You	0	0	0
eBird	3,034	99	4

Weekly Bar Chart

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Range Map

Large map

Google

Map data ©2018 Google, INEGI 200 km

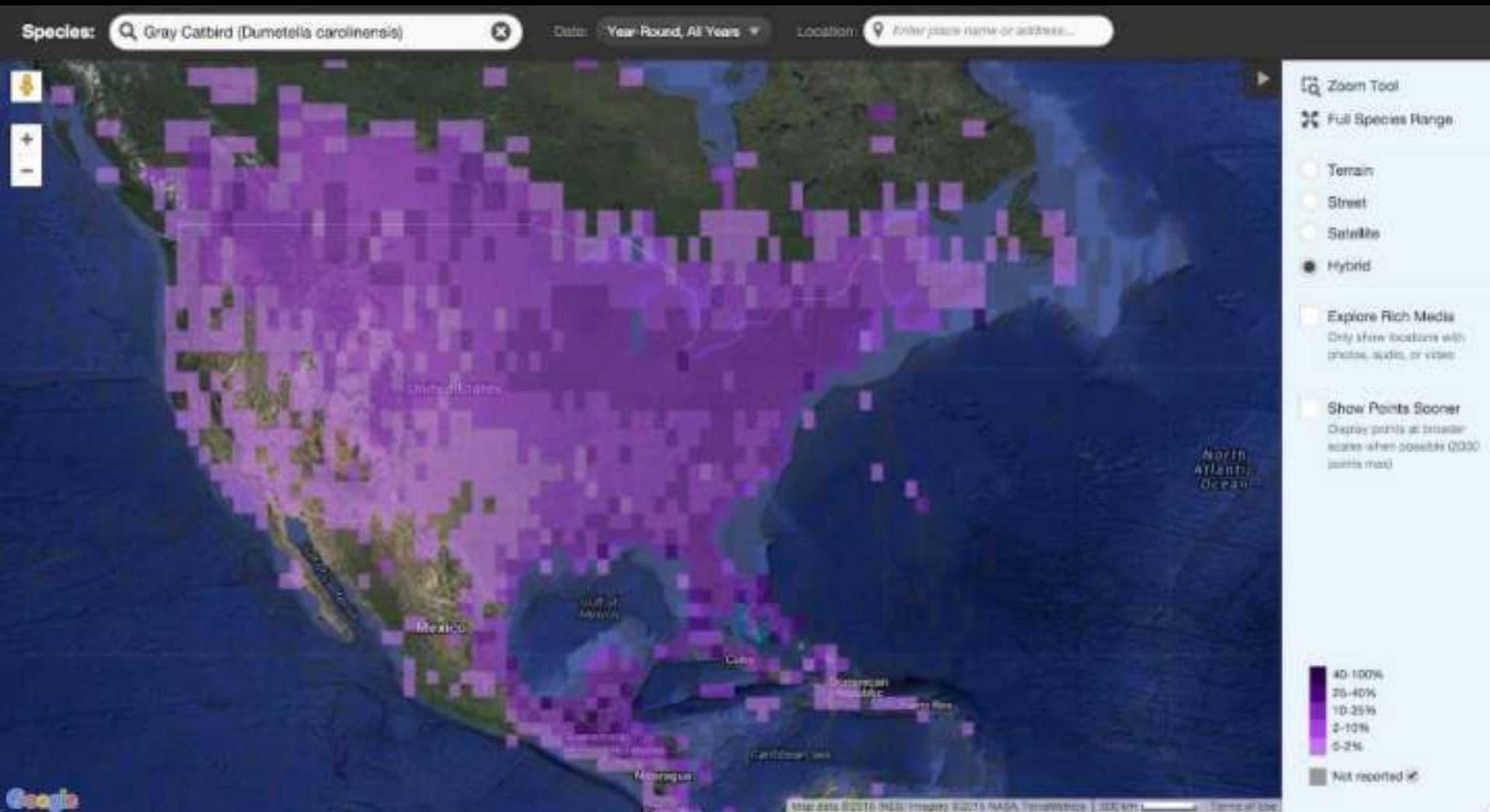
Media

All media | [My media](#)

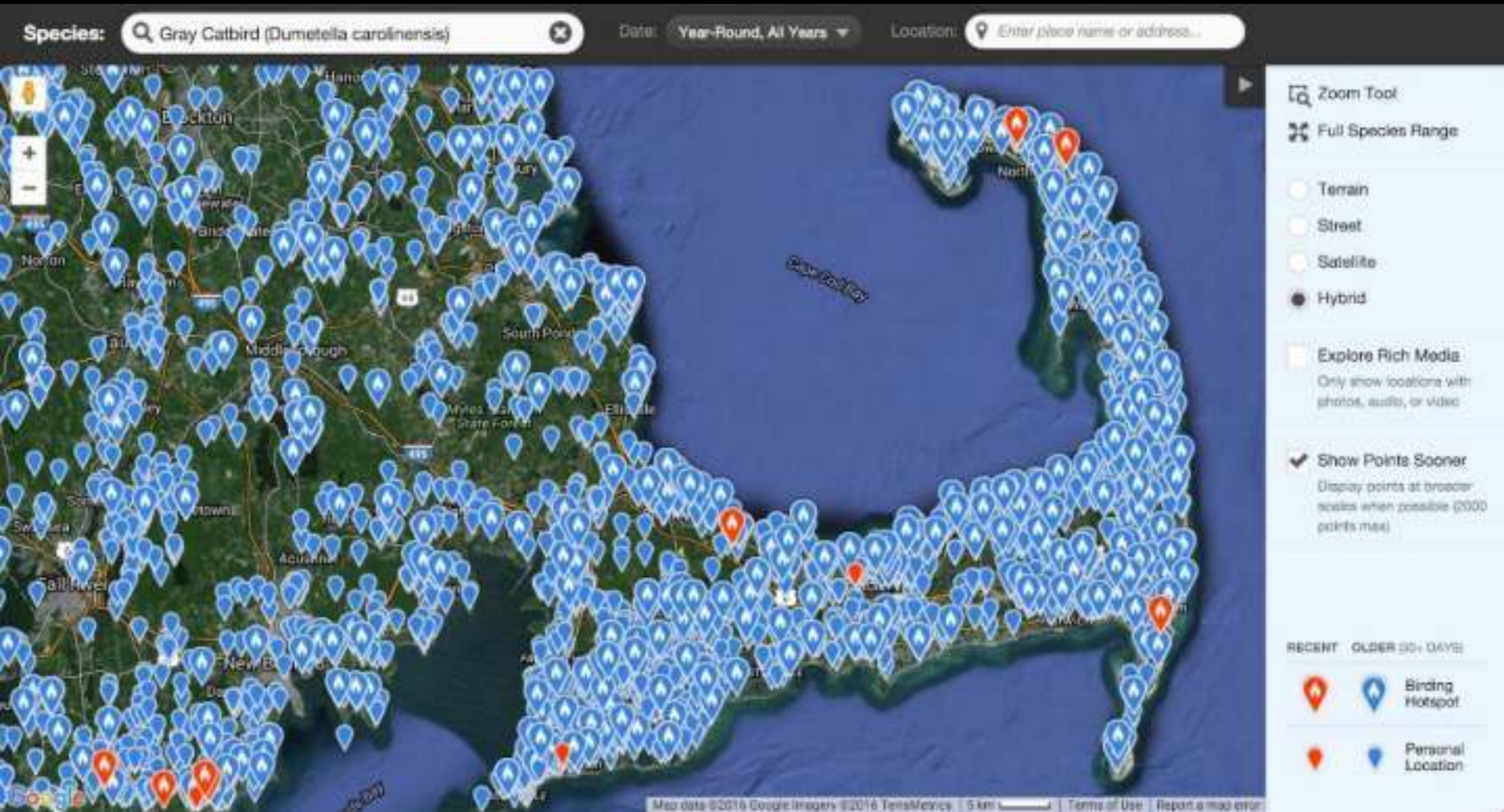
Top photos

[View all](#)

Map Species



Map Species



Explore media worldwide


Species

My Media POWERED BY IMCAULAY LIBRARY AND ESIRD

8,216,101 420,283 54,555

Location Date Contributor More Filters

Best Quality



...or for here!

Birds

POWERED BY MACAULAY LIBRARY AND EBIRD

83,109 703 0 Location Date Contributor More Filters



Recently Uploaded

Mesa, Arizona, United States Clear Filters

Save Spreadsheet



Rating photos & sounds



Great Horned Owl *Bubo virginianus*

★★★★★ 11 ratings

✓ Your rating: 5

Report...

📄 eBird Checklist S25121294

📄 Macaulay Library ML63942211

👤 © Mary Rumble


📅 20 Sep 2015

📍 Boise River WMA --Headquarters, Ada, Idaho, United States

AGE Unknown

SEX Unknown

Illustrated Checklists

 [Submit](#) [Explore](#) [My eBird](#) [Science](#) [About](#) [News](#) [Help](#) [Donate](#) [Create account](#) [Sign in](#) [Language](#)

Maricopa Change Location


Arizona US


All Years


[Overview](#) [Hotspots](#) [Recent Visits](#) **[Illustrated Checklist](#)**


[About](#) POWERED BY MACALLAY LIBRARY AND eBIRD


[Jump to Species](#) [All Media](#)

 **438**
Species observed


 **407**
Species w/ photos

 **187**
Species w/ audio

 **31**
Species needing photos


 **251**
Species needing audio

Black-bellied Whistling-Duck





Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Last seen: 4 Sep 2018 by Lynette Talano




© Cindy Marple

 Audio needed
Contribute yours


More: 

Fulvous Whistling-Duck





Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Last seen: 14 Aug 2017 by Caleb Strand




© Hans Specker


 Audio needed
Contribute yours


More: 

Snow Goose



Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec



 Audio needed
Contribute yours

Targets

Species you haven't seen



Region

Idaho, US

Time of year

Year-round

September

Custom

For your:

World

Life List

Show target species

Based on 8,985 complete checklists

7 species observed in Idaho, US in Sep that you need for your World Life List (4887 species)

Print

Sort by

1. Chukar <i>Arremonops chukar</i>	0.9570% frequency	Map
2. Dusky Grouse <i>Dendragapus obscurus</i>	0.6121%	Map
3. Cassia Crossbill <i>Lanius cinereus</i>	0.5008%	Map
4. Greater Sage-Grouse <i>Centrocercus urophasianus</i>	0.3784%	Map
5. Black Swift <i>Cypseloides niger</i>	0.0334%	Map
6. Black Rosy-Finch <i>Leucosticte atrata</i>	0.0223%	Map
7. Mountain Quail <i>Oreortyx pictus</i>	0.0111%	Map

Top 100

Home Explore

Top 100

Region

Major Regions

Time period

Ranked by

Maricopa County

All time

2018

Other

Species

Complete checklists

Show Top 100

Updated ~10 hr(s) ago.

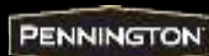
Top 100 eBirders in Maricopa County by species [438 Species](#)

	Complete checklists	Species (% of total)	Most recent addition
1. Tommy DeBardleben	2,064	390 89.04%	Ruby-throated Hummingbird (Jul 12, 2018)
2. Steve Hosmer	1,847	375 85.52%	Prothonotary Warbler (Sep 29, 2018)
3. Barbara Meding	738	373 85.16%	Cassin's Sparrow (May 20, 2018)
4. Susan Fishburn	961	367 81.79%	Cassin's Sparrow (May 30, 2018)
4. Caleb Strand	1,058	367 85.79%	Varied Bunting (Aug 18, 2018)
6. Dale Clark	2,758	365 85.39%	Song Sparrow Thrush (May 26, 2018)
7. Tyler Loomis	567	361 82.42%	Song Sparrow Thrush (Oct 6, 2018)
8. Steve Ganley	351	360 82.19%	Dusky Flycatcher (May 18, 2018)

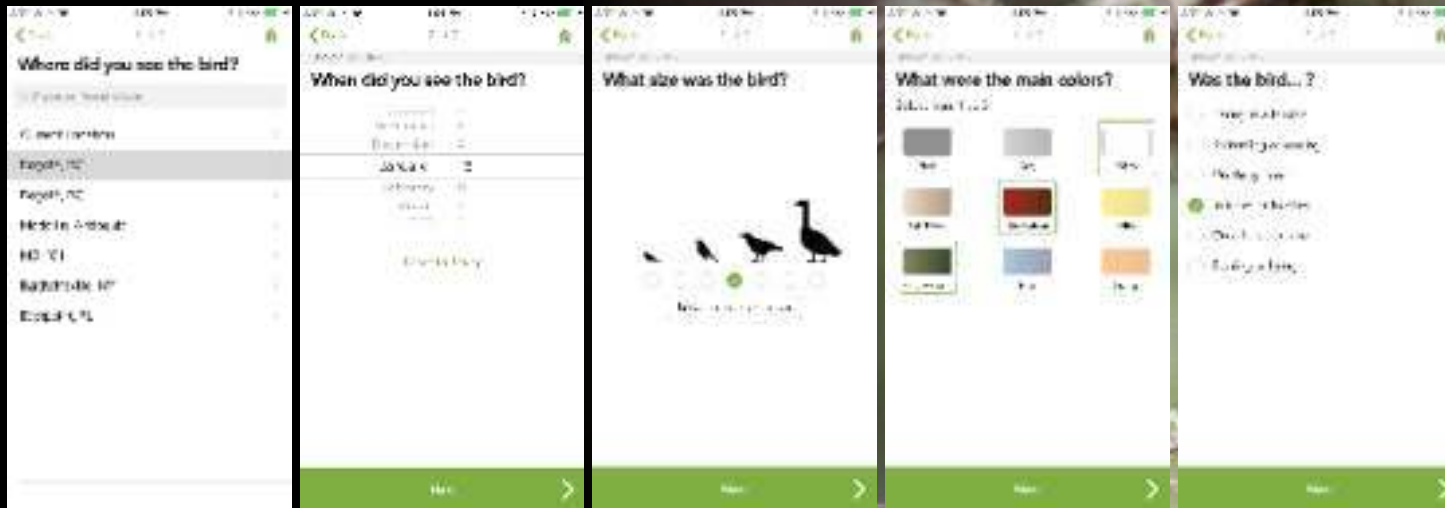
Merlin

TheCornellLab 

Merlin



Merlin Bird ID

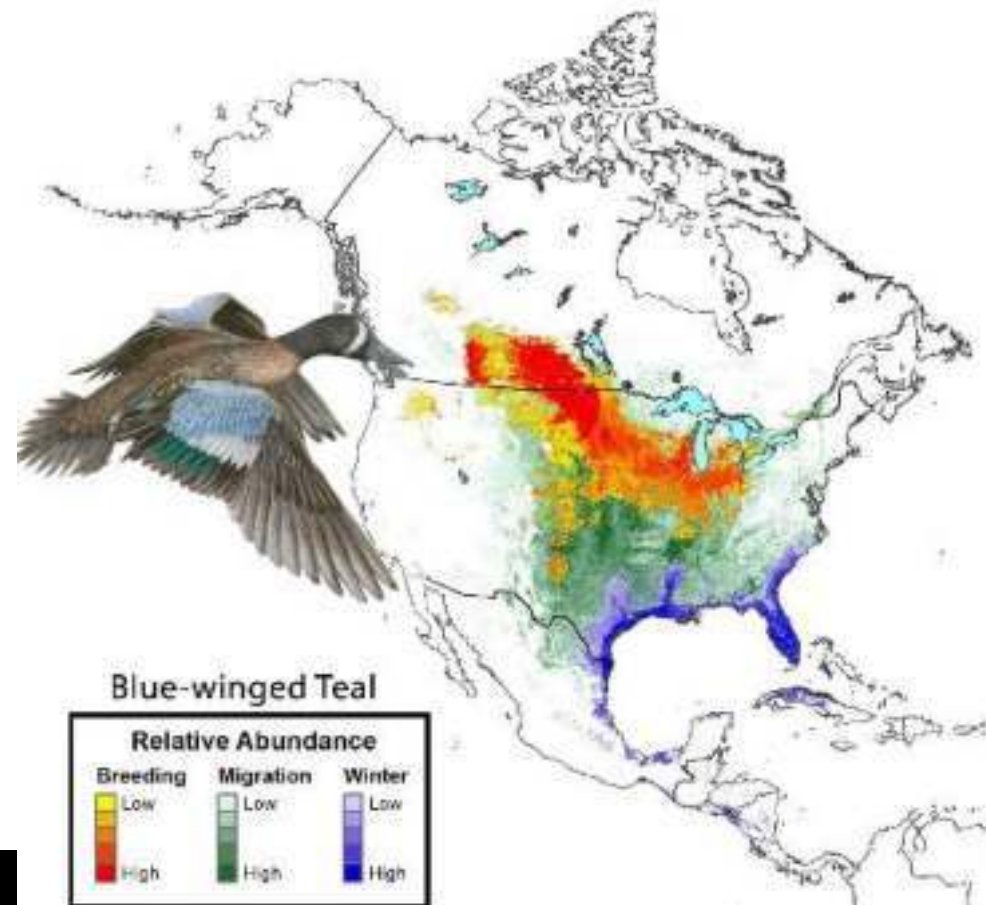
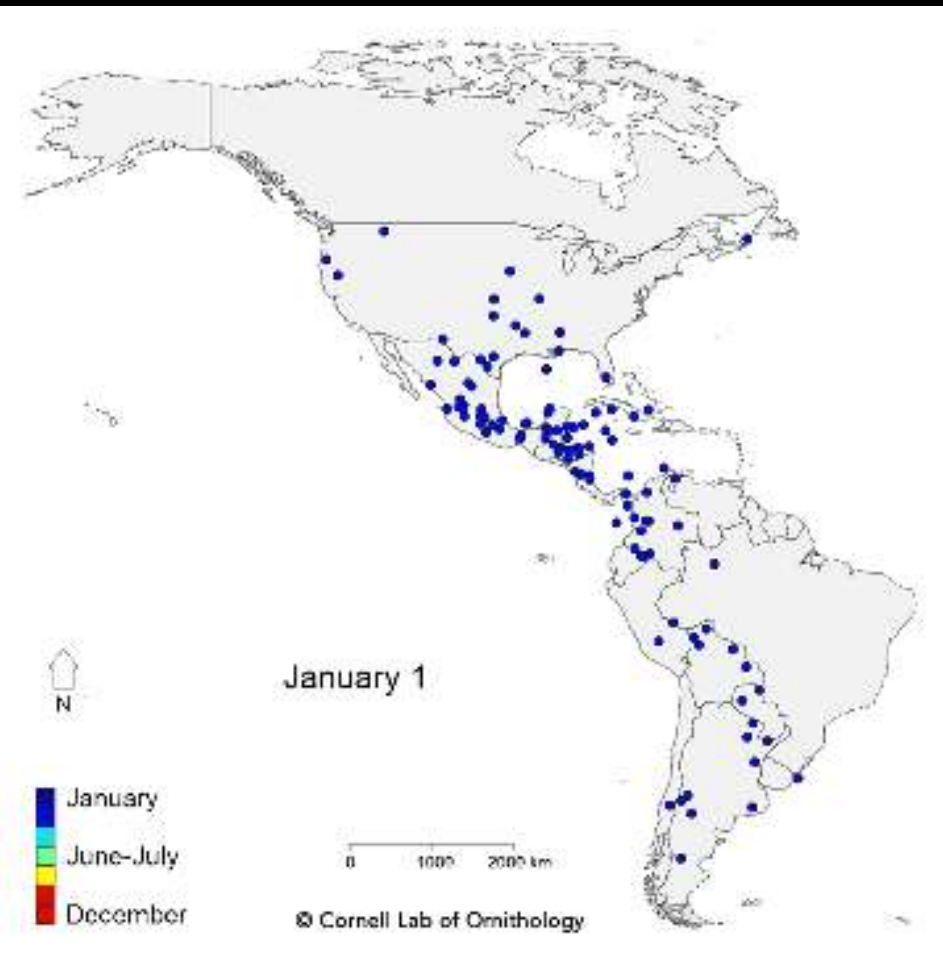


Merlin Photo ID



Impact

eBird helps conservation



Lazuli Bunting

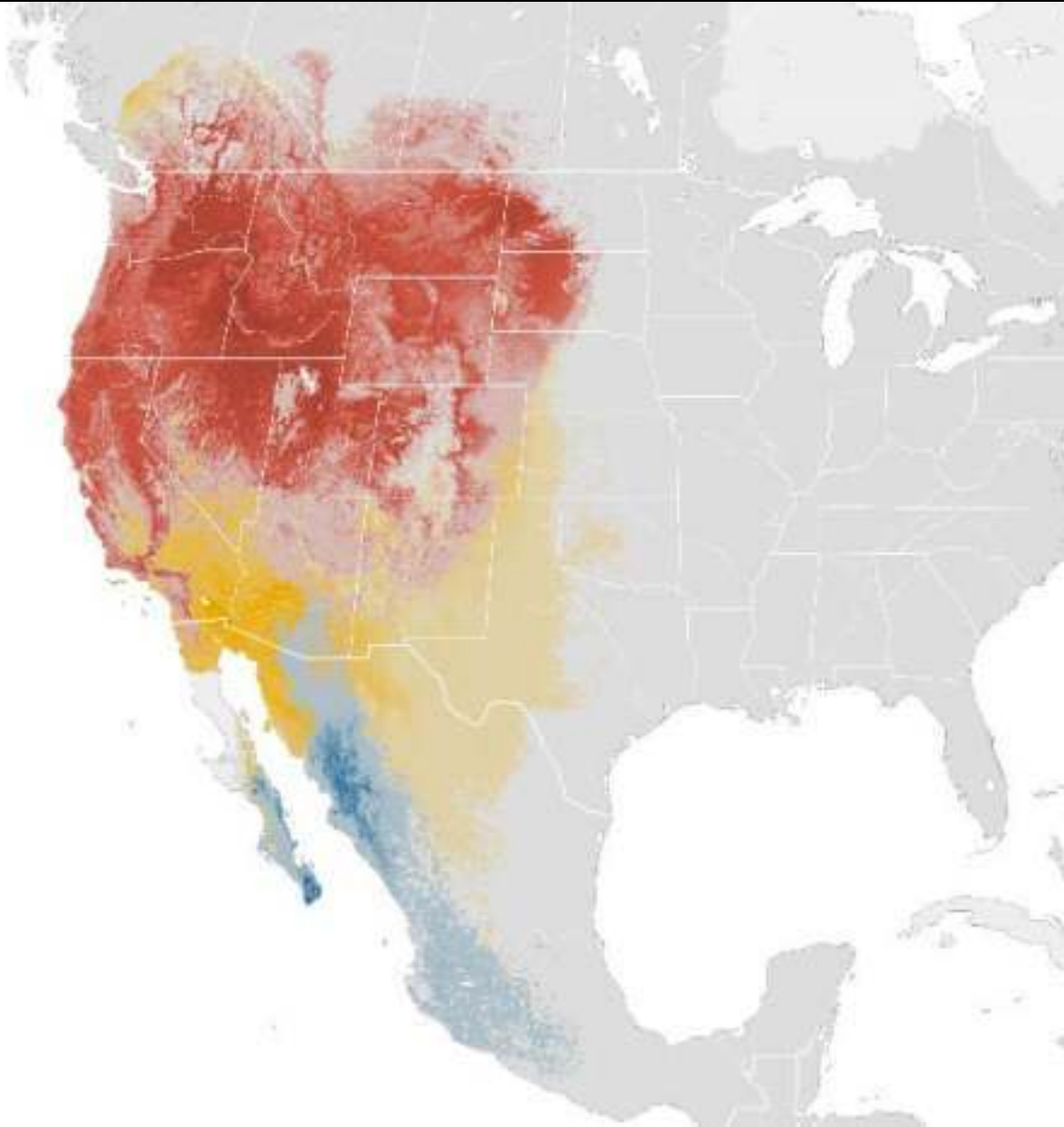


Photo ©Bob Gunderson/Macaulay Library













Is feeding harmful
or helpful?

Dr. Emma Grieg
FeederWatch Project Leader



Photo by Janet Lewis, Project FeederWatch



Project FeederWatch
Embrace the winter. Count feeder birds for science!

The Cornell Lab of Ornithology 

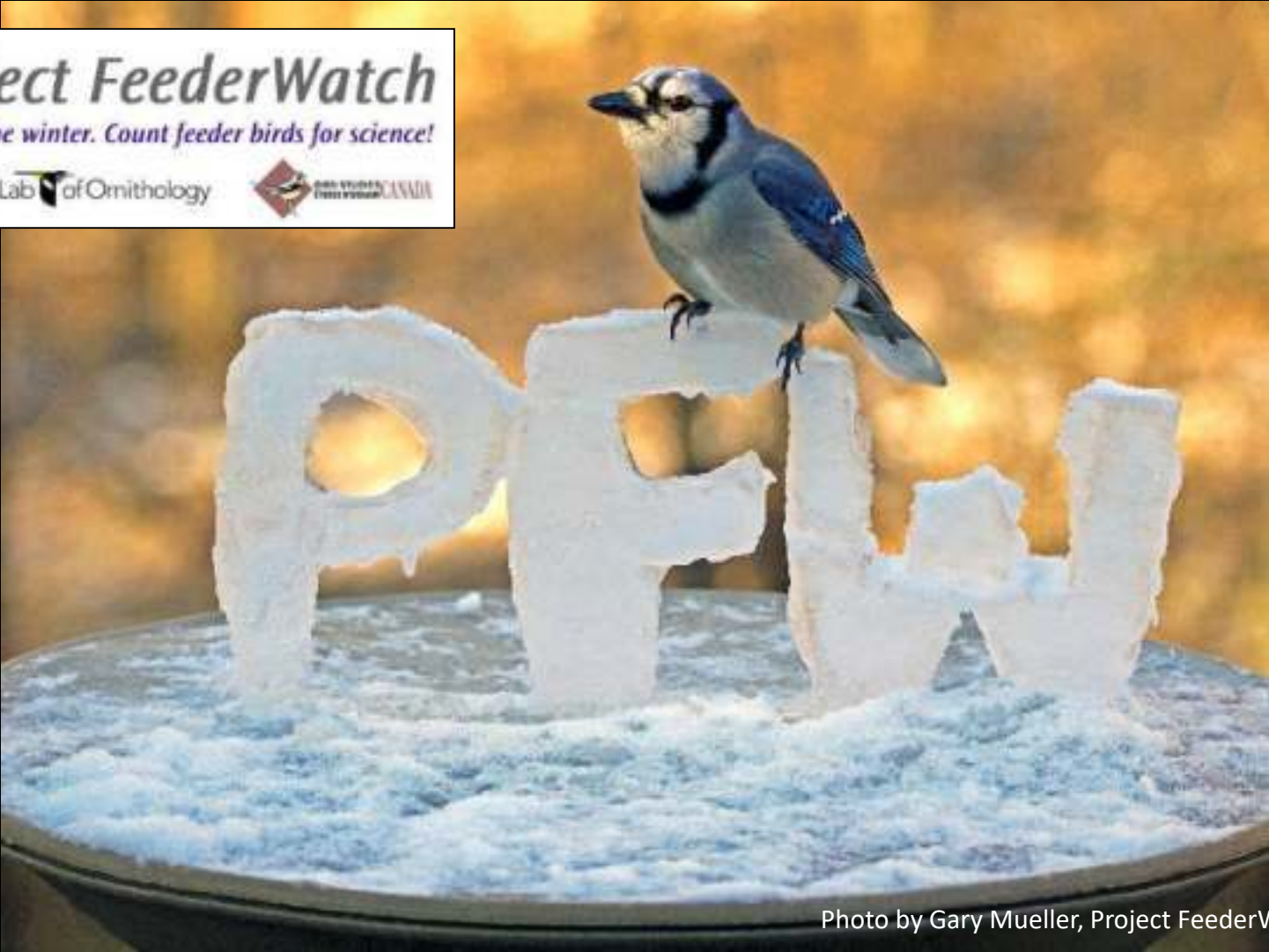


Photo by Gary Mueller, Project FeederWatch

Feeder use predicts both acquisition and transmission of a contagious pathogen in a North American songbird

James S. Adelman^{1,2}, Sahnzi C. Moyers³, Damien R. Farine^{4,5,6}
and Dana M. Hawley¹

Mycoplasma gallisepticum
in House Finches

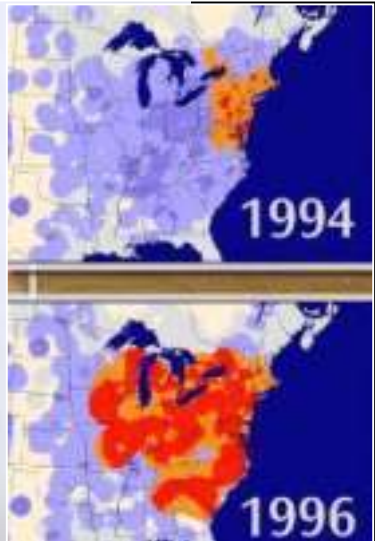


Photo by Chuck Gibson, Project FeederWatch

Bird feeders and their effects on bird-window collisions at residential houses

Justine A. Kiemmer¹ and Erin M. Bayne¹

¹Department of Biological Sciences, University of Alberta



Photo by William Boyd, Project FeederWatch

PREDATION OF BIRDS AT FEEDERS IN WINTER

ERICA H. DUNN¹ AND DIANE L. TESSAGLIA

*Cornell Laboratory of Ornithology
159 Sapsucker Woods Road
Ithaca, New York 14850 USA*

Cooper's hawks increasing at feeders

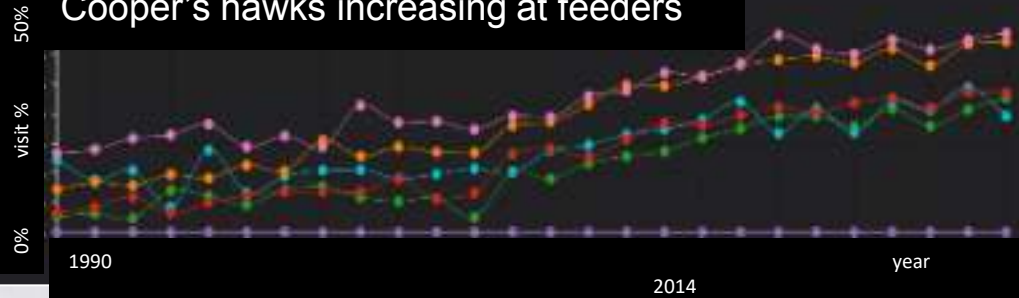


Photo by Karen Burke, Project FeederWatch

Is supplementary feeding in gardens a driver of evolutionary change in a migratory bird species?

KATE E. PLUMMER, GAVIN M. SIRIWARDENA, GREG J. CONWAY, KATE RISELY and MIKE P. TOMS

British Trust for Ornithology, The Nunnery, Thetford, Norfolk IP24 2PU, UK



Photo by Maggie Macdonald, Project FeederWatch

If feeding is harmful, then species that use feeders most should be doing worse



Photo by Bob Vuxinic, Project FeederWatch

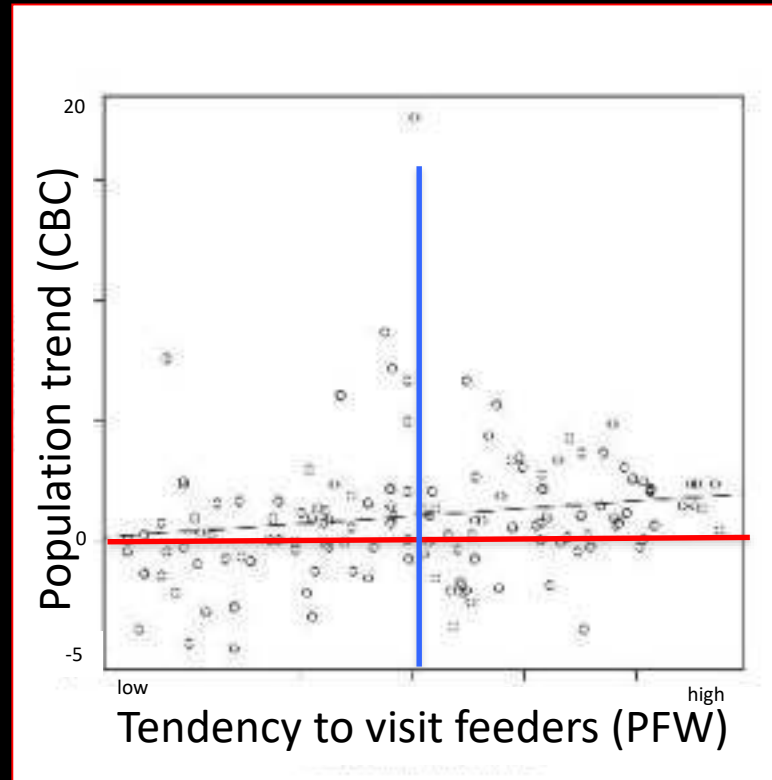
- Used data from Project FeederWatch to assess feeder use by species
 - Continuous and quantitative metric of feeder use (50,000 sites)
- Used Christmas Bird Count data to assess population trends by species
 - Control for range size, urban affiliation, migration strategy, diet (50 years)

Population trends for North American
winter birds based on hierarchical models

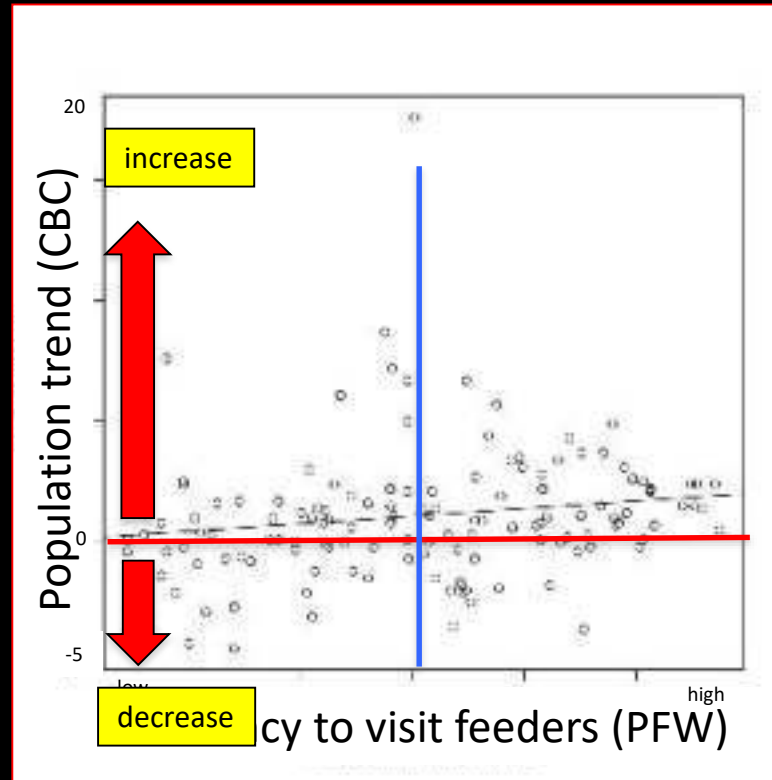
CANDAN U. SOYKAN,¹+ JOHN SAUER,² JUSTIN G. SCHUETZ,¹
GEOFFREY S. LEBARON,³ KATHY DALE,³ AND GARY M. LANGHAM⁴

- Selected 136 species that visited feeders regularly enough to be comparable
 - Doves, hummingbirds, woodpeckers, perching birds

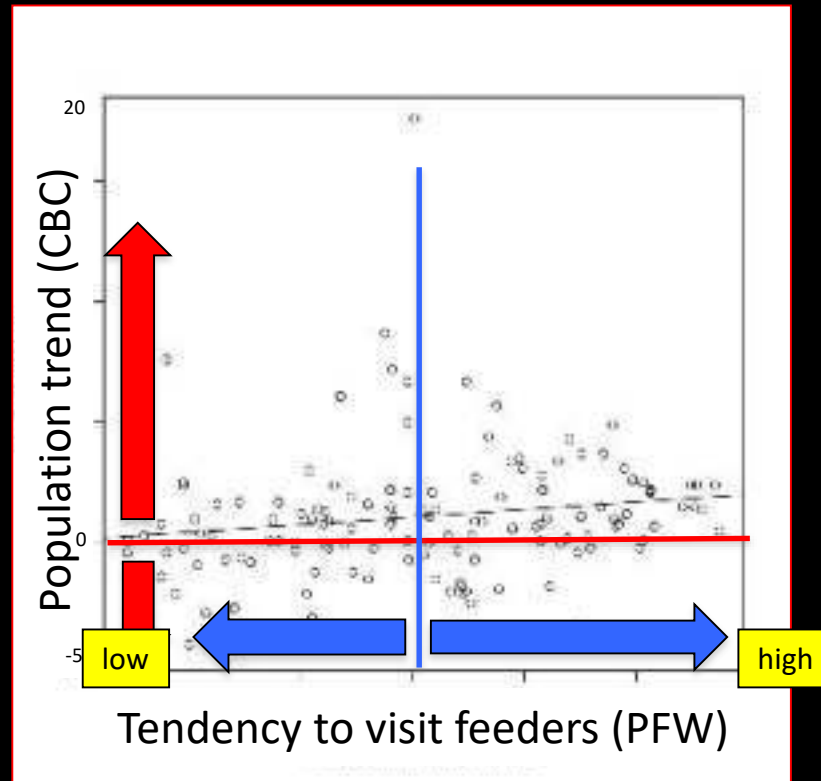
As likelihood of visiting feeders increases, population trend increases



As likelihood of visiting feeders increases, population trend increases

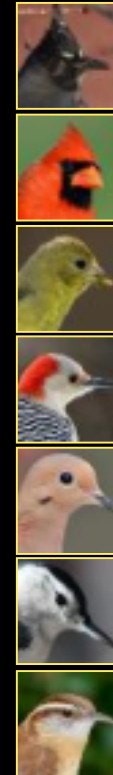
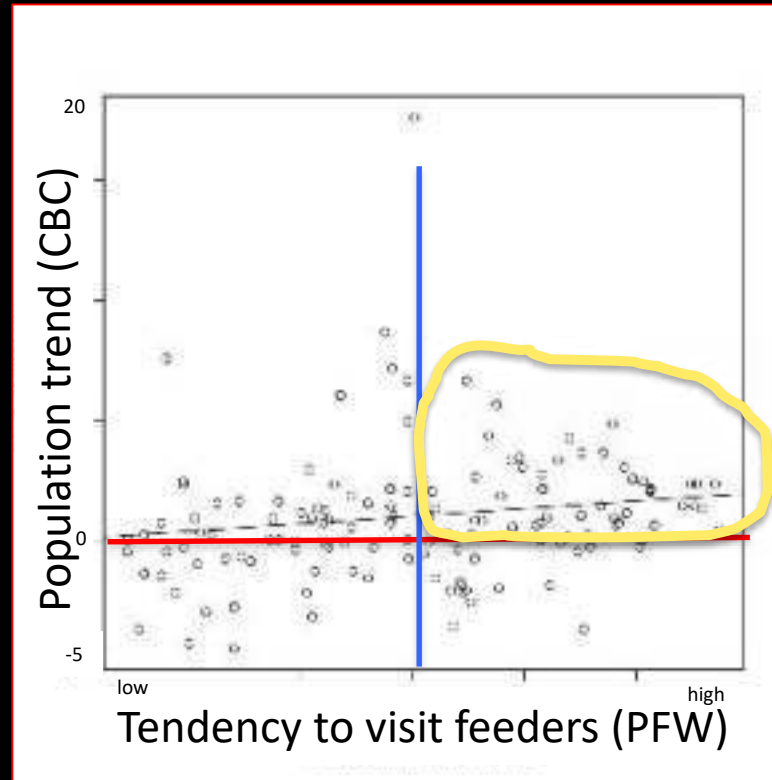


As likelihood of visiting feeders increases, population trend increases



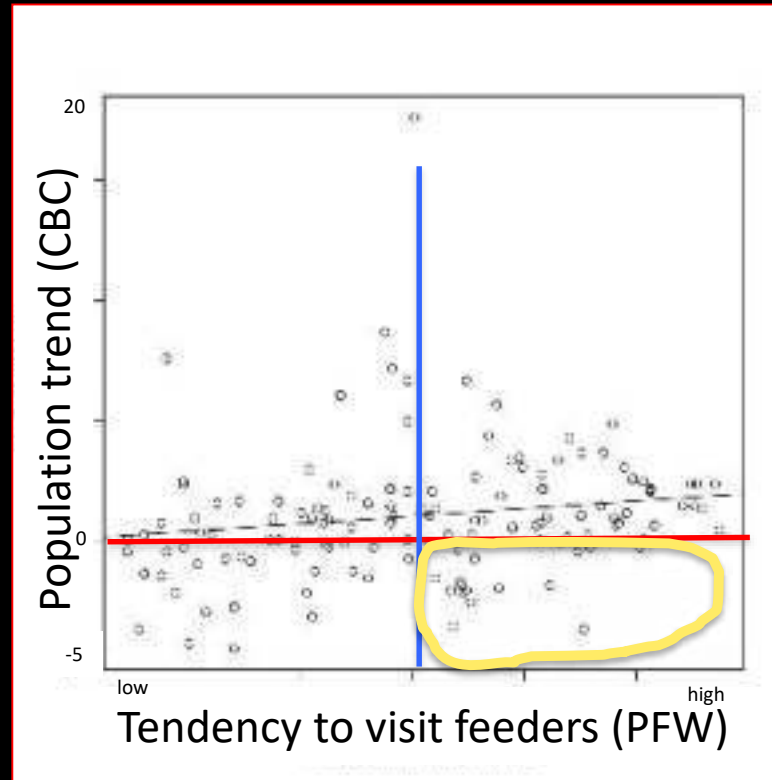
As likelihood of visiting feeders increases, population trend increases

There are lots of species in this quadrat



As likelihood of visiting feeders increases, population trend increases

And relatively few in this one





Take home:

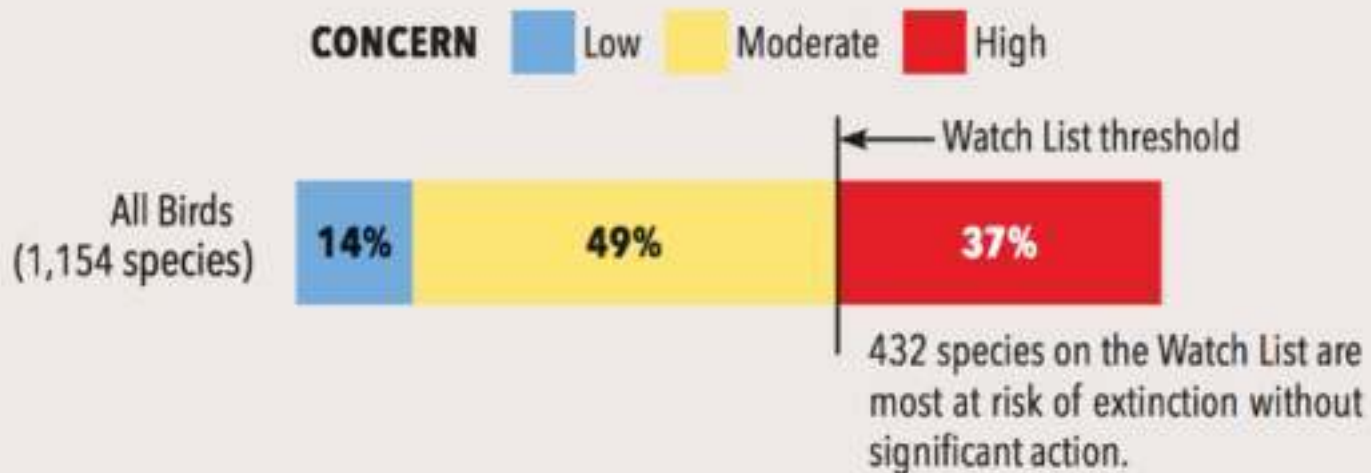
Most species that use feeders a lot are doing well – better than species that use them infrequently.

They certainly aren't doing worse.

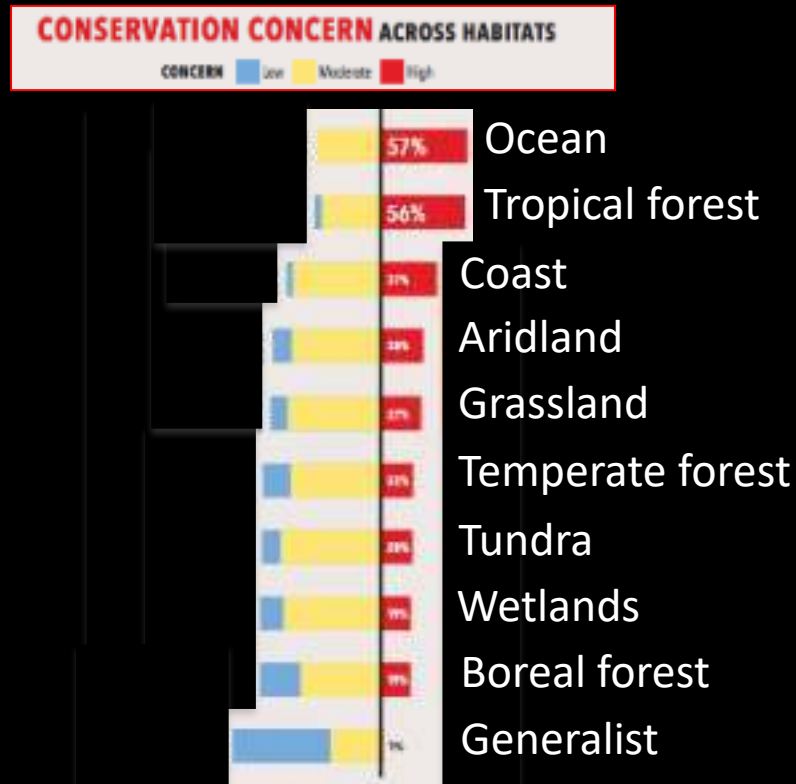
Photo by Mary le Patourel, Project FeederWatch

State of North America's Birds

ONE-THIRD OF ALL NORTH AMERICAN BIRD SPECIES NEED **URGENT CONSERVATION ACTION**



State of North America's Birds

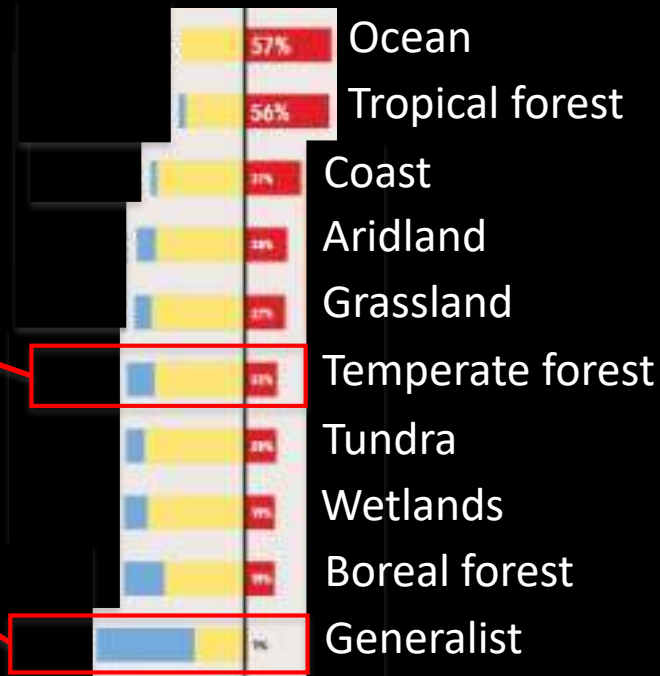


North American Bird Conservation Initiative. 2016. *The State of North America's Birds 2016*. Environment and Climate Change Canada: Ottawa, Ontario. 8 pages. www.stateofthebirds.org

State of North America's Birds

CONSERVATION CONCERN ACROSS HABITATS

CONCERN Low Moderate High

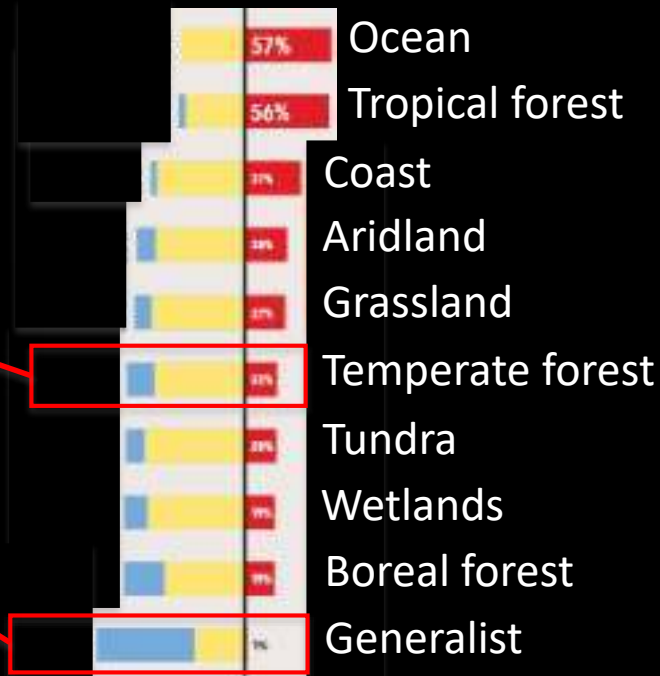


North American Bird Conservation Initiative. 2016. *The State of North America's Birds 2016*. Environment and Climate Change Canada: Ottawa, Ontario. 8 pages. www.stateofthebirds.org

State of North America's Birds

CONSERVATION CONCERN ACROSS HABITATS

CONCERN Low Moderate High



The species in decline are not sharing habitats with most feeder birds



Photo by Christine Gitz, Project FeederWatch



Photo by Nell Jordan, Project FeederWatch



“Feeding the birds is the best present you could give them”

Lori Ballard, Denver, NY

WWF: In the last 40 years, we have lost 60% of life on Earth

“The declines in wildlife populations are shocking and send a strong signal that we must do more to conserve biodiversity...the trends are alarming in terms of what they mean for human populations. We are degrading the very same systems that provide humans with food, water, clean air and other services...”

Amanda Rodewald
Gavin Professor of Ornithology and
Senior Director Conservation Science



ELSEVIER

Contents lists available at ScienceDirect

Global Environmental Change

journal homepage: www.elsevier.com/locate/gloenvcha



Network environmentalism: Citizen scientists as agents for environmental advocacy



McKenzie F. Johnson^{a,*}, Corrie Hannah^{1,a}, Leslie Acton^b, Ruxandra Popovici^a,
Krithi K. Karanth^{a,c,d}, Erika Weinthal^{a,*}

Conservation Biology



Special Section: Moving from Citizen to Civic Science to Address Wicked Conservation Problems

Place-based and data-rich citizen science as a precursor for conservation action

Benjamin K. Haywood,* Julia K. Parrish,† and Jane Dolliver†

Questions!

