Audubon

Audubon's Climate Watch Summary Report for Summer 2017

October 2017

Mountain Bluebird. Photo: Richard Pick/Audubon Photography Awards

Overview

The summer 2017 Climate Watch survey period was the second summer season of Audubon's Climate Watch program. Climate Watch is a citizen/community science program that integrates species climate projections with community volunteers' local knowledge to study how birds will respond to climate change. In this report, we provide an account of the Summer 2017 surveys, including summary information on participation, data collected, participant feedback, and next steps for the program. We also include information on our new online reporting tool, where you can explore Climate Watch data interactively. An in-depth analysis of the data collected for our 2017 survey periods will be presented in a Climate Watch statistical analysis report, later in winter 2017/2018.

Climate Watch Summary Report for Summer 2017

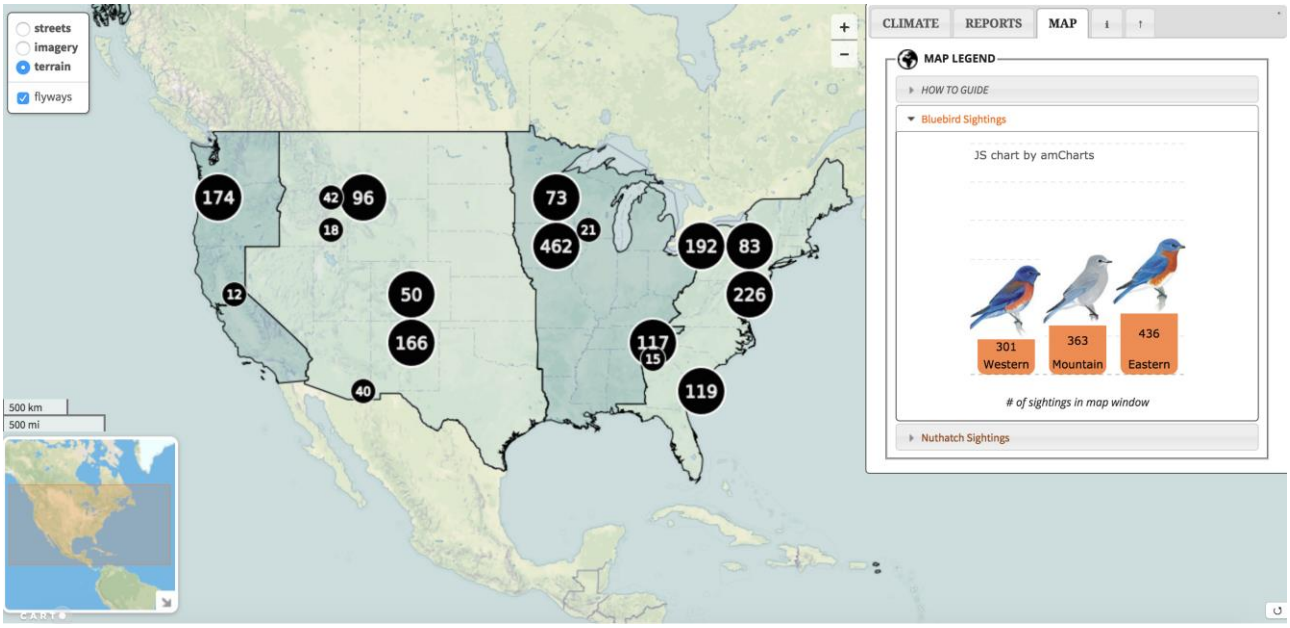
With your help, we are doing important work for birds!

Climate Watch Summer 2017 Summary Report Overview

From June 1-15 2017, more than 377 dedicated volunteers traversed habitats across the U.S. to look for bluebirds and nuthatches in the second summer season of Audubon's Climate Watch program.

Volunteers collected data on seven target species: Eastern, Western, and Mountain bluebirds and White-breasted, Red-breasted, Brown-headed, and Pygmy nuthatches. Dedicated volunteers from 21 states and Washington, D.C. increased geographic coverage of the Climate Watch program. We thank everyone who took the time to participate in this effort to test Audubon's climate model predictions of future bird ranges.

To highlight these efforts, we have developed an online reporting tool where you can explore the locations of past Climate Watch survey periods and the bird data that were collected.



Our online reporting tool can be found on our Climate Watch webpage located here: https://www.audubon.org/conservation/climate-watch-program#CWmap

Climate Watch Summer 2017 Survey Results:

Continued Growth of the Program

The summer 2017 Climate Watch survey had more than 377 volunteers participating from 31 Audubon chapters, four Audubon centers, two Audubon state/regional office-coordinated effort, and one independent birding group. These coordinated efforts took place across 21 states and Washington, D.C. We had 26 returning groups and 13 new groups.

States and Districts Participating:	Arkansas, Arizona, California, Colorado, Georgia, Iowa, Idaho, Kansas, Kentucky, Maryland, Michigan, Missouri, New Mexico, New York, North Carolina, Oregon, Pennsylvania, South Carolina, South Dakota, Washington, Washington, D.C, Wisconsin
Returning Groups:	Arkansas River Valley Audubon Society, Atlanta Audubon Society, Audubon Center at Riverlands, Audubon South Carolina, Big Bluestem Audubon Society, Buffalo Audubon Society, Central New Mexico Audubon Society, Chemung Valley Audubon Society, Chesapeake Audubon Society, Coastal Georgia Audubon Society, Audubon Society of the District of Columbia, Elisha Mitchell Audubon Society, High Peaks Birders, John James Audubon Center at Mill Grove, Madison Audubon Society, Mecklenburg Audubon Society, Olympic Peninsula Audubon Society, Pickering Creek Audubon Center, Prairie Rapids Audubon Society, Snake River Audubon Society, Sperry-Galligar Audubon Society, St. Louis Audubon Society, Tucson Audubon Society, Wake Audubon Society, Wildcat Glades Audubon Center, Wyncote Audubon Society
New Groups:	Altacal Audubon Society, Audubon Great Lakes, Augusta/Aiken Audubon Society, Central Kentucky Audubon Society, Charleston Audubon Society, Forsyth Audubon Society, Fripp Island Audubon Society, New Hope Audubon Society, North Shore Audubon Society, Ozark Gateway Audubon Society, Prairie Hills Audubon Society, Southern Adirondack Audubon Society

The majority of Climate Watch volunteers spent between zero to four hours planning surveys and scouting out locations. Personal knowledge of the local area, printable (PDF) maps supplied by Audubon, in-person scouting, and the online ESRI Climate Watch planning tool were the most used tools to plan survey locations, in that order. When selecting appropriate habitat for target species, Climate Watch volunteers were strongly influenced by their personal knowledge of the area's birds and habitat, but in-person scouting, satellite maps, and eBird information were also useful tools for many.

Most volunteers conducted a full 12 point counts within one grid square, and many completed a second square as well. On average, individuals spent six hours over two days completing Climate Watch surveys. Participants that responded to our surveys said they would be willing to conduct surveys for eight hours over two days. This suggests that most volunteers are likely to take three hours to survey a single square (12 points) on a single day, and would be willing to survey up to two squares. Most volunteers were able to complete their surveys in the morning, but nearly 15% were happy to have the additional time available in the afternoon (either to complete surveys or to conduct surveys only in the afternoon).

Bird Observations Provided by You

Bluebirds slightly outnumbered nuthatches as a selected target species (57% vs 48% of reported target species in the data set; note that many observations were for both bluebird and nuthatch species). We had roughly 3,700 checklists, and over 28,000 data points including 388 species. That is double the number of data points, 1,000 more checklists, and nearly 200 more species than we received for our Winter 2017 survey period.

For our target species, we had over 1,400 bluebird records and nearly 900 nuthatch records. Numbers for each target species were as follows:

- Eastern Bluebird
    - 1198 individuals across 1959 locations
    - Range of 1-14 individuals seen at one time
    - Average of 1.16 individuals when present at a location
- Mountain Bluebird
    - 116 individuals across 102 locations
    - Range of 1-3 individuals seen at one time
    - Average of 1.63 individuals when present at a location

- Western Bluebird
    - 113 individuals across 74 locations
    - Range of 1-8 individuals seen at one time
    - Average of 2.05 individuals when present at a location
- White-breasted Nuthatch
    - 579 individuals across 829 locations
    - Range of 1-5 individuals seen at one time
    - Average of 0.87 individuals when present at a location
- Red-breasted Nuthatch
    - 63 individuals across 121 locations
    - Range of 1-5 individuals seen at one time
    - Average of 1.54 individuals when present at a location
- Brown-headed Nuthatch
    - 233 individuals across 638 locations
    - Range of 1-5 individuals seen at one time
    - Average of 0.74 individuals when present at a location
- Pygmy Nuthatch
    - 14 individuals across 12 locations
    - Range of 1-3 individuals seen at one time
    - Average of 2 individuals when present at a location

Occurrences data for our target species will now be displayed in an online reporting tool which can be found at https://www.audubon.org/conservation/climate-watch-program#CWmap Our general summary reports for each survey period will move to this interactive reporting tool for future Climate Watch survey periods, with supplements as needed on survey period information or updates. An annual in-depth statistical analysis of the data collected from both winter and summer survey periods detailing how Climate Watch species are responding to climate change will follow at the end of each year.

What We Heard from You

In July 2017 we solicited feedback from our Climate Watch Summer 2017 coordinators and volunteers through discussions and an online survey. The online survey received 102 responses. The feedback we received helped us assess the Climate Watch program, identify what worked well and what was in need of improvement, and what new information or materials we can make available to people participating in the future. As this program grows, we hope to use feedback to make participation clear, easy and accessible.

54% of respondents were returning Climate Watch volunteers, and 46% were new to the program. The majority of our respondents were from North Carolina (27%), South Carolina (14%), and New York (8%). Eastern Bluebird was the most reported Target Species in the survey (63%) followed by White-breasted Nuthatch (40%), Brown-headed Nuthatch (30%), and Red-breasted Nuthatch (15%), with Western Bluebird (7%), Mountain Bluebird (6%) and Pygmy Nuthatch (2%) less targeted- (note, some respondents chose more than one target species).

Overall, volunteers and coordinators were happy with the new data submission method, which involved copying and pasting all 12 eBird checklist URLs into on email and sending it to the Climate Watch team. This greatly improved the quality of our data. For our summer survey period, once we received data we emailed our volunteers acknowledging receipt and requesting information on chapter area or target species if this information was missing or hidden (in which case we sent instructions on how to make comments viewable to the public) we followed up with each individual. This tracking of target species allowed us to better match each survey count with the correct target species, and will provide us with improved data quality. Our quantitative ecologist has come up with an analytical framework that accounts for varying levels of target species reporting, from most detailed and highest quality (i.e. target species identified to species level- e.g. Eastern Bluebird), to less detail in identification by bird group only (e.g. bluebirds or nuthatches), to no information provided on target species. Manual data entry (checklists in non-standard format) and data cleaning did slow down completion of the data set. In addition, several of our respondents noted the multi-step process added time and extra effort to the Climate Watch survey. We are working towards a data entry system that would be specific to Climate Watch and would resolve all of these data issues and reduce the extra steps. We are also working on analyses that will use our non-target species data.

We look forward to analyzing the data records on all of our target species after the June survey and reporting back to you on how these species are tracking climate-related range shifts.

Specific feedback on problems or requested resources are summarized below:

ESRI Climate Watch Planner Tool Issues:	Zooming problems, difficulty with layer selection for target species climate projections

ESRI Climate Watch Planner Tool Requests:	Add layer with all previous survey locations into the planner, integrate planning tool with data collection tool to help identify locations when in the field, import points with lat/lon coordinates.

After reviewing the feedback, we have made some changes to the program. Our respondents were happy with the Climate Watch survey period for summer 2017, but the most frequent request was for additional time. Volunteers faced weather problems, busy schedules, as well as differing breeding windows where some bird species are more quiet than other times of year, and less easy to find. With these in mind, we are extending our survey periods to a full 30 days; winter surveys will now be January 15 – February 15 and summer surveys will be May 15 – June 15. We will also continue to allow both morning and afternoon surveys in our subsequent survey periods. In addition, we are changing the maximum number of volunteers for a survey count to 3, so now 1-3 individuals can be present on each survey.

New Materials:	High level overview video on the program for potential new volunteers, combined coordinator and volunteer survey manual document, online results reporting tool (https://www.audubon.org/conservation/climate-watch-program#CWmap).
In the Works:	Updated data submission platform, social media and press release template, tailored target species information sheets and social media posts, Climate Watch photo submission portal.

We thank you for the feedback on the Climate Watch program, as your feedback allows us to improve the program and make it easier for us to support you as volunteers. We are happy to share that 100% of Climate Watch survey respondents said they would like to participate in Climate Watch in the future, with 80% stating they would be very likely to. We are thrilled to continue to support you all as we work together to let the birds tell us how climate change is affecting them as it happens. Thank you for all of your input and hard work!

Join us for the Winter 2018 Count

Our next survey period for Climate Watch is January 15 – February 15, 2018. In this survey period, we will continue to promote Climate Watch outside of the Audubon network and have invited any group with an interest in community science, birds,

and climate change to participate from now on. We are hoping for a full public launch in Summer 2018, so stay tuned!

We will continue to provide support to our coordinators and participants, and will be improving and developing new materials (as outlined above) and a new website.

Climate Watch Planning and Implementation Team

Thanks for all that you do for the birds and for being the force behind Climate Watch. Because of you, we are able to let the birds tell us how climate change is affecting them as it happens. Thank you from the Climate Watch Team:

Brooke Bateman	Director of Climate Watch
Liz Bergstrom	Climate Content Manager
Kathy Dale	Director of Science Technology
Doss Dingli	Enterprise GIS Support Specialist
Gregg Verutes	Data Visualization Specialist
Gary Langham	Director of Science
Geoff LeBaron	Director of the Christmas Bird Count
Nicole Michel	Senior Quantitative Ecologist
John Rowden	Director of Community Conservation
Connie Sanchez	Director Important Bird Areas Program
Zach Slavin	Program Manager, Citizen Science
Lotem Taylor	GIS Technician
Chad Wilsey	Director of Conservation Science

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Please sign up here or email us if your chapter, center, or local group is interested in participating in future Climate Watch survey periods.

Thank you to the chapters, centers, states, and other groups that participated in the Summer 2017 survey for Climate Watch!

Altacal Audubon Society
Arkansas River Valley Audubon Society
Atlanta Audubon Society
Audubon Center at Riverlands
Audubon Great Lakes
Audubon Society of the District of Columbia
Audubon South Carolina
Augusta/Aiken Audubon Society
Big Bluestem Audubon Society
Buffalo Audubon Society
Central Kentucky Audubon Society
Central New Mexico Audubon Society
Charleston Audubon Society
Chemung Valley Audubon Society
Chesapeake Audubon Society
Coastal Georgia Audubon Society
Elisha Mitchell Audubon Society
Forsyth Audubon Society
Fripp Island Audubon Society
High Peaks Birders
John James Audubon Center at Mill Grove
Madison Audubon Society
Mecklenburg Audubon Society
New Hope Audubon Society
North Shore Audubon Society
Olympic Peninsula Audubon Society
Ozark Gateway Audubon Society
Pickering Creek Audubon Center
Prairie Hills Audubon Society
Prairie Rapids Audubon Society
Snake River Audubon Society
Southern Adirondack Audubon Society
Sperry Galligar Audubon Society
St Louis Audubon Society
Tucson Audubon Society
Wake Audubon Society
Wildcat Glades Audubon Center
Wyncote Audubon Society

Quotes from our volunteers

"Feeling useful in helping with scientific research and that this project has gotten me out looking for birds in new areas."

"Given the climate changes, habitat loss, and scarcity of food, Climate Watch is a critical study to help us understand the stress our birds are under."

"Enjoy being part of a cause and of something bigger."

"I enjoy the clearly defined method, being outdoors in good habitat, and the possibility of contributing to the knowledge base on climate change. Thanks!"

"I enjoyed being able to contribute to an actual study."

"I feel like I am providing valuable data to help Audubon track the impacts of climate change across the country."

"I liked be able to participate to help collect data and be a part of this very important research - it helps me feel like I can contribute or make a difference."

"I liked being part of the team that is showing a better picture of what effect Climate change is having on specific species."

"I liked that I had to bird in a new way. I don't usually bird for 5 minutes in a stationary spot, and it helped me look at the species and habitat with a new lens."

"I love that Audubon is collecting data on Climate Change and the impacts we will see if we do nothing."

"It helps provide data on climate change. Hopefully this will help educate people on what climate change is doing to our environment and the creature that live in it."

"It is a good excuse to get out and bird, and it also feels good to be doing something constructive for conservation and research."

"It is a great citizen science program that utilizes easily identifiable birds to obtain important diagnostic data for a given habitat which will be crucial in analyzing population trends."

"It was a great way to continue to be engaged in climate science and conservation on both a local and national level! Plus, it was fun to brush up on bird calls"

"It's a great reason to get out and enjoy the natural world while also collecting valuable data. Plus, it helps turn your thinking toward current environmental problems and how we need to be aware of them and how they are affecting our local birds both now, and in the future."

"It's a lot of fun and a really great experience if you're just getting in to birding!"

"It's pretty exciting to be able to participate in cutting edge climate science."

"Love the idea of tracking the possible breeding of threatened species in our region in regards to climate change."

"Mostly, I enjoy helping scientists learn from data - birding for a cause."

"My boyfriend and I loved being a part of Climate Watch! We felt it was an important project to participate in for the future of birds and our planet. It's not often we hear about citizen science projects, so we jumped at the opportunity and had an awesome morning bird watching and data collecting. The process of getting involved with Climate Watch was easy, and we're looking forward to seeing the results as well as participating again in the future!"

"The Audubon study on climate's effect on bird is an important one. Continued research in this area is imperative."

"This is an important program and I respect the effort of organizing it as well as getting it executed."

"This was my first time participating in Climate Watch. I was paired up with experienced birder and that made it possible for me to get involved in the project."

"We like the fact that we're contributing, even in a small way, to a scientific effort that will, hopefully, benefit the birds we love to watch."