



Chatfield Banding Station Report, Spring 2021

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Introduction

Each year since 2002, Bird Conservancy of the Rockies and Denver Audubon have partnered to run a spring banding station near the Audubon Nature Center at the south end of Chatfield State Park. This station has dual goals: 1) to provide valuable education opportunities for students as well as other humans interested in helping birds, and 2) to obtain data so that we and other scientists can increase our understanding of birds and how to most effectively conserve them and their habitats.

In the spring of 2020, COVID-19 had just hit in full force, and we were forced to cancel our regular annual banding season. COVID was still with us as this 2021 season approached, but we had run a fairly normal banding season with a modified education and public visitor program at Barr Lake in the fall of 2020, and we determined that we could, and ultimately did, run a similar program at Chatfield this spring.

The station ran for five weeks, six days per week (closed on Tuesdays) from April 24 through May 30. The nets were open five hours each day (6:30-11:30, except for the first three days when we were open from 6:40-11:40). There were a few days when we closed early due to rain or heat.

Educating and engaging during the time of COVID

We followed CDC and state and local health department guidelines to protect staff, volunteers and visitors from COVID. At the beginning of the season, our policy was to be separated by six feet or be wearing a mask. Approximately half-way through the season, CDC guidelines were revised and allowed fully vaccinated people outdoors to be closer than six feet without masks, so the vast majority of our banding staff and volunteers were able to work more closely together, training and helping each other as they identified, aged and sexed birds and safely extracted birds from the nets. To be cautious, we continued to wear masks when working with the general public and students.

Most of our modifications this season related to our education programs. Some schools were back to normal and holding in-person classes, others were still on-line, so we ran a mix of programs – some virtual and some in-person. For the in-person school programs, the group size was limited by Denver Audubon to 10 students.

For the virtual programs, we used what has become our standard technology – a tablet connected to a hotspot for Wi-Fi; zoom as the platform. The programs were live, with the bander demonstrating and describing the banding process. Denver Audubon staff managed the technology end and facilitated discussion during the hour-long sessions.

There were regular opportunities for the public to visit in-person. Most weekday mornings we scheduled a one-hour time slot, from 7:30-8:30, for up to 12 visitors. On weekends we had three one-hour time slots, at 7:30, 8:30 and 9:30. Registration was required; an hour program was \$6/participant. Participants were required to wear face masks and remain six feet apart. We provided plastic chairs that could be easily moved around so that family units could sit together and separate appropriately from other visitors.

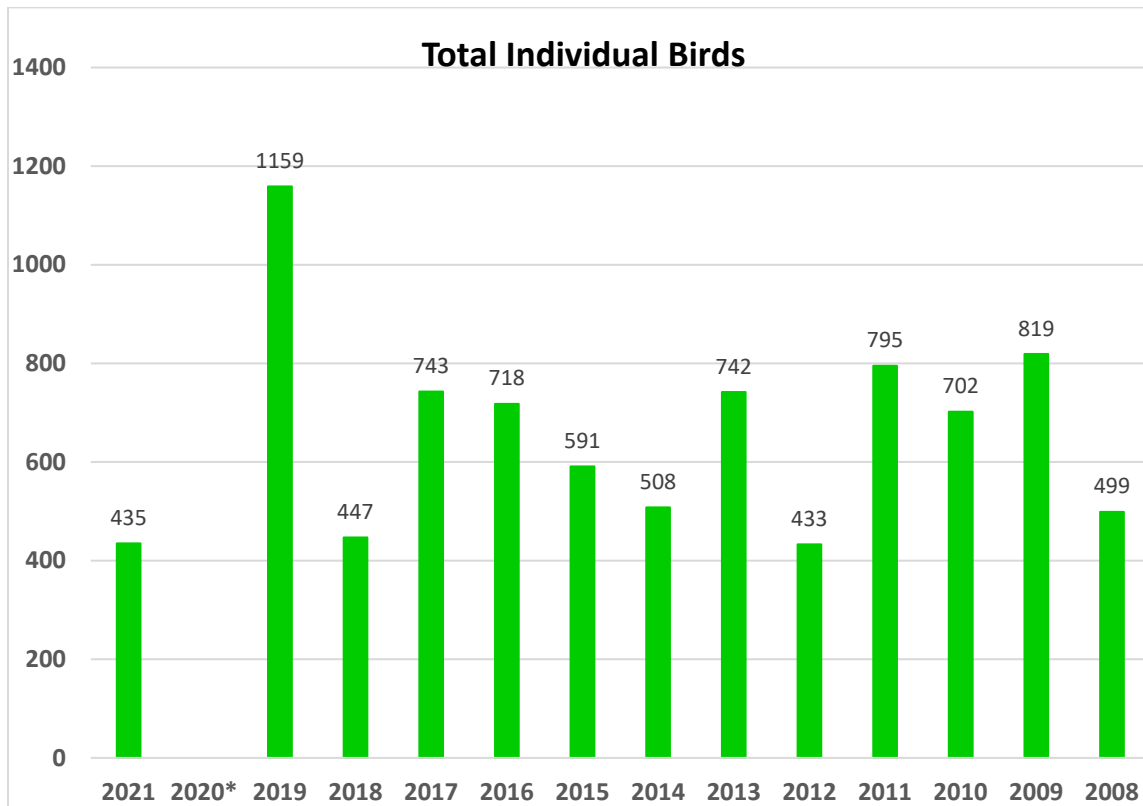
Approximately 280 students participated in in-person programs and 60 students in virtual programs, which was very similar to the total of 344 in 2019 (the most recent “normal” year). Another 290 bird lovers of all ages attended our in-person public sessions.

Birds

Fewer Birds

We entered this banding season with low expectations in terms of numbers. Although the numbers at our Barr Lake station in the fall of 2020 had been among the highest ever, we

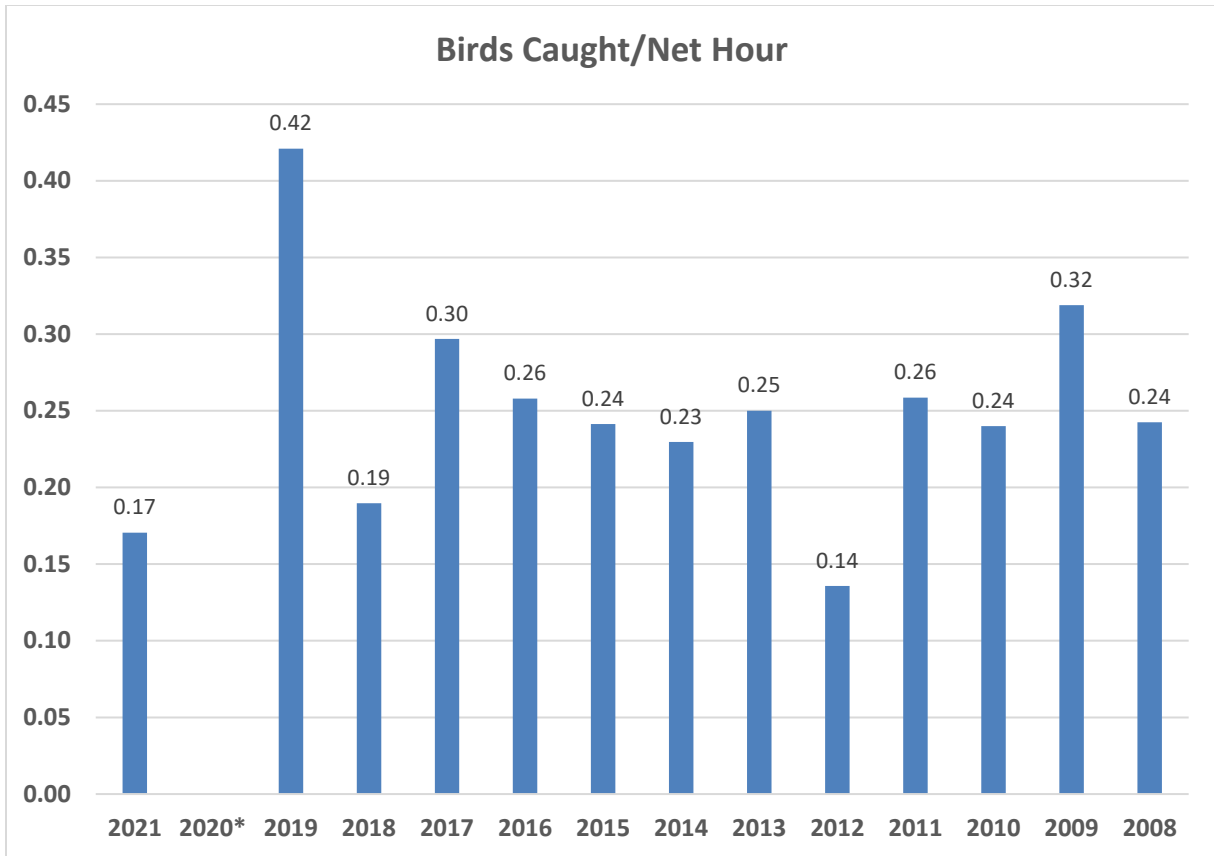
feared that the problems birds experienced due to drought, heat, fires and storms during that migration might have resulted in a low survival rate over the winter. So we were disappointed but not surprised when our spring numbers were low. The total of 435 for 2021 was well below the average of 680 for the years 2008-2019¹, although there have been other years when we hit similarly low numbers:



*Station did not run in 2020 due to COVID.

The chart below shows the total birds caught per net hour. Comparing years based on net hours eliminates some of the distortion that can exist because of differences each year in how many nets are open for how many days or hours. This chart shows a fairly similar pattern to that seen in the chart for total birds caught, particularly in the past few years:

¹ We have started these comparisons with 2008 because by then major changes in the station location and net array had been completed. From 2002-06 the station was in different locations; 2007 we made major changes in the net array at the current location. Also, for most of the earlier years we did not track net hours.



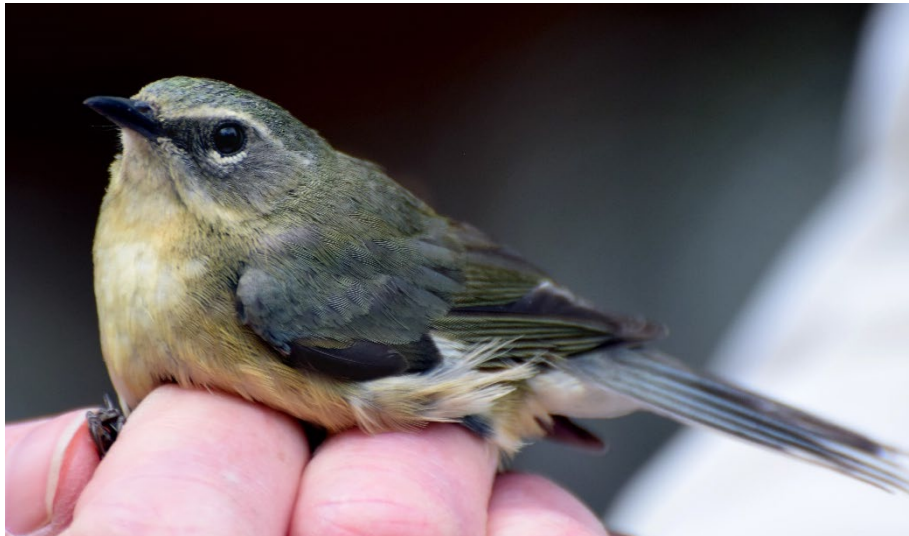
The number of commonly caught birds was well below average

Of the 10 species that are usually our most commonly caught at Chatfield, all but Gray Catbirds were below average and all but Yellow Warblers were down by a double digit percentage. The species that were low include species that breed at Chatfield as well as others that are migrating through, and came from a range of families and included species that eat a variety of food items:

Species	Average 2008-19	2021 Caught	Percent Change
Yellow Warbler	121	110	-9%
House Wren	61	28	-54%
Gray Catbird	59	66	12%
Yellow-rumped Warbler	46	22	-35%
Lincoln's Sparrow	36	17	-53%
Common Yellowthroat	27	17	-37%
Dusky Flycatcher	26	8	-69%
Yellow-breasted Chat	21	16	-24%
Swainson's Thrush	20	4	-80%
Hermit Thrush	15	1	-93%

Rare Birds – Three Firsts this Year!

Despite the low number of birds, we managed to catch three species that had never been caught at this station - one eastern warbler, one sparrow that migrates through the area but is rarely caught, and one species common in our foothills that is being found more frequently in our Denver area neighborhoods:



This dainty ***Black-throated Blue Warbler***, is a perfect example of a female that is easily as “pretty” as the male, just more subtly marked.



Before and after: Volunteer Santi Tabares snapped the above left photo of this **White-throated Sparrow** in the tangle of branches behind the banding station minutes before it moved on and got caught in a nearby net (shown after receiving its band in the photo on the right).



This **Mountain Chickadee** is separated from the more commonly seen Black-capped Chickadee by the white stripe on its head.

Most Interesting Returns

Most birds live less than one year. If songbirds make it to their first breeding season, they have about a 50 percent chance of surviving each additional year. Given those odds, about one songbird in a thousand would make it to ten years.² The only way it is possible to know how long a bird lives is to catch it, mark it, and then catch it again years later. The two birds mentioned below are beating the odds and we have been lucky enough to capture them again to verify it:

Oldest: We recaptured a female Red-winged Blackbird that was banded in 2013, making her at least nine years old. (A long way from the longevity record - the known oldest lived to be at least 15 - but still a pretty long life!) How did she escape recapture for so many years? It probably has something to do with how these bigger passerines tend to simply bounce out of the net, rather than getting caught.

Oldest Yellow Warbler: The Yellow Warbler is our most commonly caught species at Chatfield. We believe that most of those we catch breed at Chatfield, and, as a bird with strong site fidelity, we catch many of those we band in subsequent years. Our oldest recapture was last caught when he was about 10 years old. We maintain a chart of those Yellow Warblers that are the oldest that have been caught in a recent year; the current chart goes back to 2011. This year, we only caught one bird that qualified to be on the chart, but she was not on it! She had not been recaptured after being banded in 2014. Her age was unknown when first captured, making her at least eight years old.

² *What It's Like to be a Bird*, David Sibley, page 169

Multiple opportunities to meet our related goals

As mentioned in the introduction, we have two goals – to provide education opportunities and to collect data to increase our understanding of the full life cycle of birds. Banding stations can achieve these goals in a number of ways. In addition to our direct education programs and general data gathering from the banding process, here are other activities that helped us achieve our goals this year:

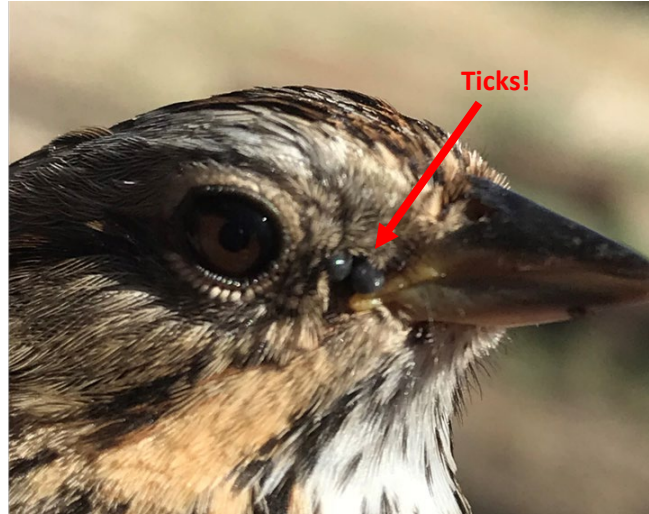
Collecting feathers for the Genoscape Project³: Since 2015, the Bird Conservancy has been collaborating with the Genoscape Project, led by Colorado State University Assistant Professor Kristen Ruegg, which is working to map population-level migratory pathways of 100 songbird species. A genoscape is a map of genetic variation across the geographic range of a species, and can be used to trace the breeding origin and wintering ground of a bird captured anywhere along its migratory pathway using DNA contained within a single feather – essentially *Ancestry.com* or *23 and Me* for birds! Identifying these migratory connections provides an effective tool for monitoring declining populations and developing effective conservation strategies. This season we collected feathers from approximately 350 birds of 28 species. They have all been delivered to the Ruegg Lab of the Genoscape Project at Colorado State University.

Collecting blood samples for study evaluating the effects of climate change on Yellow Warblers: A specific study of the Genoscape Project, being directed by Colorado State University Ph.D. student Marina Rodriguez, is seeking insight into the effects of climate change on passerines, using the Yellow Warbler as its study species. She is looking at using genomic vulnerability as a tool to forecast which populations of a species may be at risk of declining. To do this, she is measuring the lengths of individual bird's telomeres⁴ in subsequent years. Thus, she needs two blood samples from the same Yellow Warblers, taken a year apart. To get sufficient samples to complete her study, she is working with banding stations like ours that are in locations where lots of Yellow Warblers breed. (Yellow Warblers, like many migratory songbirds and as noted earlier in this report, have high site fidelity, and tend to return to the same breeding ground each year.) This year, we captured and successfully obtained blood samples from 32 birds. In 2022, we hope to recapture and obtain blood samples on many of those birds, thus providing DNA to help Marina Rodriguez reach useful conclusions.

³ For more information, see [here](#).

⁴ Telomeres are repetitive, non-coding sequences of DNA that cap the ends of chromosomes and protect the functional genome. Telomeres shorten with each round of cell division, and rate of shortening can be accelerated by environmental stressors.

Collecting ticks for study of tick-borne diseases: Ticks can carry diseases and they can pass those diseases to humans through their bite. Of particular concern is the most common disease caused by ticks – Lyme disease – which represented 72% of all tick-borne diseases reported in 2017 (when approximately 43,000 cases were reported, up 17% from the prior year). Until 1996, Lyme disease was rarely seen outside of the northeastern part of the U.S.; now it is found in more than half the country, as the blacklegged, or deer, tick has spread across the U.S. Monica White co-founded the Colorado Tick-Borne Disease Awareness Association in 2016 to learn more about ticks in Colorado, where the lack of research had led to a belief that there were few if any potentially dangerous ticks. She reached out to us, as one way ticks spread out across the country is by attaching themselves to migrating birds. Normally, finding a tick at Chatfield is very rare; we have only found four ticks on birds in the six years we have participated in this study. One was found this season, on a Song Sparrow, and the three others were all found in 2018. We learned recently that we had made history with those 2018 captures - those ticks were identified as *Ixodes brunneus*, a species that had never before been found in Colorado. (See photo above, taken by Jennie Ratico, of two of those ticks on one Lincoln’s Sparrow.) One of our specimens is now housed in the collection at Colorado State University.



Encouraging the next generation of ornithologists: One of our education objectives has been to provide learning opportunities for teens who have exhibited a high level of interest in pursuing careers in ornithology. Santiago Tabares (see right and below) is one such student. His parents first brought him to the banding station when he was about 8 years old, when birds were just becoming a passion for him. Here, as a senior in high school, he is weighing a Gray Catbird that he has just banded, as lead bander Meredith McBurney supervises. Below, he stands at the entrance to Sapsucker Woods on the Cornell University campus, where he is, according to his mother, “having a blast” as a college freshman.





Photo and Chart Credits:

Page 1: Western Tanagers – Jennie Ratico

Page 2: Bullock’s Oriole being released – Aaron Newby

Page 5: Black-throated Blue Warbler – Santiago Tabares

Page 6: White-throated Sparrow (2) – Santiago Tabares

Page 6: Mountain Chickadee – Unknown

Page 8: Lincoln’s Sparrow with ticks – Jennie Ratico

Page 9: Santiago Tabares and Meredith McBurney with Gray Catbird – Suzy Hiskey

Page 9: Santiago Tabares at Cornell University – Paulina Erices-Tabares

Summary -Birds Caught, Spring 2021

Species	Newly Banded	Return	Recovery	Total
Cooper's Hawk	1			1
Downy Woodpecker		1		1
Western Wood-Pewee	1			1
Willow Flycatcher	4			4
Least Flycatcher	2	1		3
Dusky Flycatcher	8			8
Cordilleran Flycatcher	1			1
Warbling Vireo	1			1
Red-eyed Vireo	1			1
Mountain Chickadee	1			1
Black-capped Chickadee	9	5		14
Bushtit	1			1

White-breasted Nuthatch	3			3
House Wren	23	5		28
Ruby-crowned Kinglet	1			1
Blue-gray Gnatcatcher	1			1
Swainson's Thrush	4			4
Hermit Thrush	1			1
American Robin	6			6
Gray Catbird	63	3		66
Lesser Goldfinch	3			3
American Goldfinch	7			7
Chipping Sparrow	5			5
Brewer's Sparrow	1			1
"Oregon" Dark-eyed Junco	1			1
"Pink-sided" Dark-eyed Junco	3			3
"Gambel's" White-crowned Sparrow	4			4
"Mountain" White-crowned Sparrow	4			4
White-throated Sparrow	1			1
Song Sparrow	12	2		14
Lincoln's Sparrow	17			17
Green-tailed Towhee	3			3
Spotted Towhee	12	1		13
Yellow-breasted Chat	14	2		16
Bullock's Oriole	7	1		8
Red-winged Blackbird	3	1		4
Brown-headed Cowbird	2			2
Northern Waterthrush	1			1
Orange-crowned Warbler	1			1
Virginia's Warbler	2			2
MacGillivray's Warbler	6			6
Common Yellowthroat	17			17
American Redstart	1	3		4
Yellow Warbler	96	14		110
Black-throated Blue Warbler	1			1
"Audubon's" Yellow-rumped Warbler	17			17
"Myrtle" Yellow-rumped Warbler	5			5
Wilson's Warbler	15			15
Western Tanager	2			2
Lazuli Bunting	1			1
Total = 47 Species	396	39	0	435