COLORADO BIRDS

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From the Editor

Fall is upon us, and with it, the excitement of avian migration. We are fortunate to live in a state that offers dynamic birding opportunities year round. With habitats ranging from alpine tundra to shortgrass prairie, there's no shortage of places to explore!

In this issue, you can read more about the final results of the 2025 COBC, catch up on notable sightings from the spring and see what Dave Leatherman has to say about Japanese beetles. Heather McGregor has a terrific article on the monumental task to digitize the CBRC records and Eric DeFonso has a captivating analysis of meadowlark vocalizations. Christian Nunes delves into the complicated story of Cassia Crossbills in Colorado and we have intriguing essays on American Kestrel and Blue Jay behavior.

Peter Burke
Managing Editor
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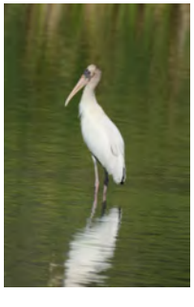
ON THE COVER

Colorado hadn't seen a Wood Stork since 1934. Fortunately this bird stuck around for several weeks in Broomfield, to the delight of many birders. Photo by James Ward.



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President's Message

This morning, I am preparing to mail the forms from my 2025 Breeding Bird Survey (BBS) routes to the U.S. Geological Survey (USGS) program office. USGS Breeding Bird Surveys are one of the two long-term surveys that are the basis for tracking bird population trends nationwide. As I prepare to mail my data sheets, I am troubled by the uncertainty over whether there will be a recipient for the data.

My research using ChatGPT confirms that the USGS Ecosystems Mission Area (EMA), which houses the BBS program, is slated for massive cuts under the "One Big Beautiful Bill". (This massive bill currently does not appear to be available online in searchable form).

The EMA also houses the Bird Banding Laboratory that manages bird banding across the country. Many of us have visited or volunteered at bird banding stations conducted by Bird Conservancy of the Rockies or other groups. Those stations depend on bands provided by the Bird Banding Lab and on the laboratory's curating of banding data. Banding is another critical tool for our understanding of birds and migration.

Many universities and other organizations, including Bird Conservancy of the Rockies, face cuts in federal funding. Research by those entities is critical for bird and ecosystem conservation. I have no insight into how much federal funding cuts will impact our understanding of birds and their conservation. As we look for ways to minimize the damage to science data and its accessibility, however, we can help fill the research gap by submitting our observations to eBird and participating in community/citizen science projects. And I will be sending in my BBS data sheets today out of optimism.

Chuck Hundertmark

CFO President
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CFO NEWS

2025 COBC Results

By Peter Burke
COBC Committee Chair

The fifth Colorado Birding Challenge took place on Saturday, September 6. A total of 38 teams participated this year, covering 22 Colorado counties.

The event was born during the pandemic, when large gatherings like the CFO Convention had been suspended indefinitely. Birding was something we could all do either singly or in small groups. It got us outside in the fresh air and helped to distract us from the depressing and scary drumbeat of Covid health warnings. Modeled after similar birding competitions, notably New Jersey Audubon's World Series of Birding and The Great Texas Birding Classic, the Colorado Birding Challenge, or COBC, introduced a county focus that not only reduces the carbon footprint, but levels the playing field for anyone who chooses to participate.

Using ten years of eBird sightings data, CFO developed a list of the expected species for each of the state's 64 counties in early September. With shoutouts to Mark Peterson and, more recently, Mark Minner-Lee, this data was further refined to arrive at a par value for each county. Larimer County has the highest par at 109 species while Gilpin and Mineral counties are tied for the lowest par at 51 species. Thus, no matter which county one birds in, comparing the total species found to par for that county yields a fair comparison. Game on!

At its essence, the COBC challenges birders to find as many species as they can in the county of their choice in a 24-hour period. This leads to loads of friendly competition that is reflected in the fun names of the registered teams. For example: Cuckoos for Cocoa Puffs, Longmontspurs, Ptarmigeddon, Winging it in Salida or We Would Like to Speak to the Tanager! But the COBC also serves as a fundraiser for CFO and its conservation programs. Teams that register are automatically provided with a team webpage that can be customized to provide details about which county they are birding and what their goals are. Teams are encouraged to share their webpages with friends and family who might be interested in supporting them with a donation or by pledging an amount for each species they find.

Beyond fundraising, the COBC also generates valuable data documenting the occurrence and distribution of birds throughout the state. This year's COBC generated 405 eBird checklists in 22 Colorado counties!

There are four categories for participants to choose from, three competitive and one non-competitive.

The Challenge. Teams of two or more go all out to find as many species as they can within their chosen Colorado county.

The Green Challenge. Those who want to minimize their carbon footprint can opt to use only self-propelled (non-motorized) transportation (walking, pedaling, paddling, etc.).

The Under-25 Challenge. As the name implies, teams must be made up of individuals aged 25 years or younger, although an adult may accompany them for supervision and/or transportation.

Bird Your Own Way. For everyone else there's BYOW! You can participate on your own, host a birding party, do a "Big Sit" in your yard or favorite hot spot or any other plan that strikes your fancy.

2025 Winners

There were 19 teams registered for **The Challenge** in this year's COBC, birding in 14 separate counties. Team **100% Confirmed by Merlin**, captained by Michael Dougherty with Nathan Bond, Jake Shorty, Eric Dinkel and Peter Stoltz, successfully defended its 2024 victory! Their impressive total of 106 species in Grand County was a whopping 43 over par (168%) and the third highest total statewide. On top of that, the team raised $626.

Honorable mention goes out to:

1. **FlockFinders**: Kristin Tallis and her team tallied 104 species in Jackson County, 34 over par (149%)! All while raising $784!

2. **Clear Creek Crossbills**: Nathan Pieplow and his team found 84 species in Clear Creek County, 32 over par (162%)! Even without any significant bodies of water, they not only reached an impressive total, but found some very impressive birds including a county first Magnolia Warbler! And they raised $956 in the process!

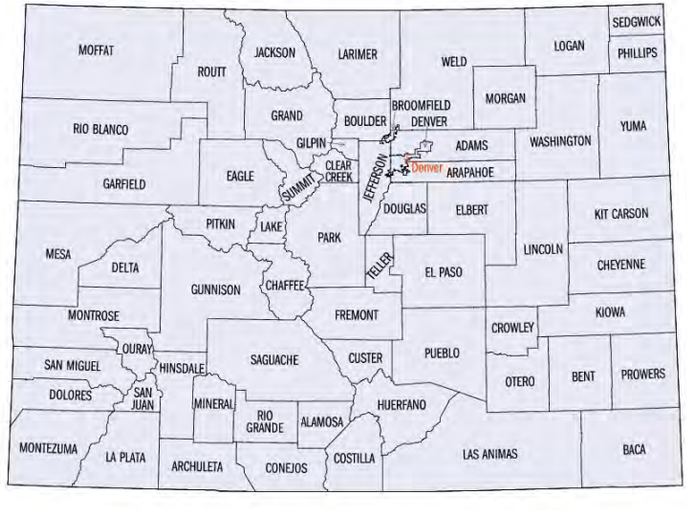
3. **Luke and Diana's Awesome Big Day**: found a respectable 84 species in Larimer County, but they truly outdid themselves in the fundraising department, bringing in $2,224! Narrowly edging out the **Pawnee Nomads** who raised $2,010!

Four teams took part in **The Green Challenge** this year, using only self-propelled means of transportation to cover Eagle, Weld, Arapahoe and Larimer counties! **The Larimer Helmetcrests** tallied a remarkable 114 species in Larimer County, five over par! By bike!! Captain Nick Komar said that he, Brendan Beers and David Wade pedaled over 34 miles. Impressively, this was the highest species total for any team this year. Also impressive, they raised $1,019!

We had 14 teams register in the **Bird Your Own Way** category this year covering nine Colorado counties. Everyone's a winner in this open, non-competitive category! Collectively, BYOW teams raised $4,733 this year!

I hope you will consider participating in next year's COBC! We would love to increase the number of counties represented and see more Green and Under-25 Teams!

County	Par	County	Par	County	Par	County	Par
Adams	91	Denver	78	Kit Carson	81	Phillips	70
Alamosa	76	Dolores	57	La Plata	80	Pitkin	60
Arapahoe	84	Douglas	91	Lake	52	Prowers	86
Archuleta	75	Eagle	70	Larimer	109	Pueblo	106
Baca	83	El Paso	104	Las Animas	78	Rio Blanco	74
Bent	93	Elbert	67	Lincoln	90	Rio Grande	68
Boulder	95	Fremont	75	Logan	81	Routt	76
Broomfield	67	Garfield	68	Mesa	86	Saguache	68
Chaffee	71	Gilpin	51	Mineral	51	San Juan	52
Cheyenne	71	Grand	63	Moffat	74	San Miguel	78
Clear Creek	52	Gunnison	75	Montezuma	83	Sedgwick	78
Conejos	62	Huerfano	74	Montrose	75	Summit	64
Costilla	70	Hinsdale	60	Morgan	94	Teller	70
Crowley	72	Jackson	70	Otero	74	Washington	95
Custer	85	Jefferson	91	Ouray	76	Weld	96
Delta	67	Kiowa	95	Park	81	Yuma	82



Our goal is to register teams in all 64 counties of Colorado.

NEWS FROM THE FIELD

Yellow Grosbeak, Arapahoe County. 08 May 2025. Photo by Courtney Rella.

"News from the Field" contains reports of rare or unusual birds found in Colorado. The reports contained herein are largely vetted by eBird review and in some cases the Colorado Bird Records Committee (CBRC). Species and/or counties in capitals are those for which the CBRC requests documentation. Please submit your sightings of these "review" species through the CFO website at *coloradobirdrecords.org*.

Season Overview

Spring 2025 (March–May)

By Kyle Carlsen
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Spring 2025 brought its fair share of surprises.

In early March, a Crested Caracara appeared in Pueblo County and lingered for more than a month. In late April, a Lawrence's Goldfinch visited a backyard feeder in Huerfano County for two days, marking just the second record for Colorado. Then, in early May, a Yellow Grosbeak made a one-day stop at a feeder in Arapahoe County, the third state record. As thrilling as that bird was, it turned out to be only a hint of what was to come—but more on that in the summer report.

The raptor migration season was again documented by the dedicated team at Dinosaur Ridge Hawkwatch in Jefferson County, with daily coverage from early March to mid-May. Their totals this spring included 952 American Kestrels, 524 Red-tailed Hawks, 381 Turkey Vultures, 358 Sharp-shinned Hawks, 309 Cooper's Hawks, 274 Broad-winged Hawks, 86 Ospreys, 61 Northern Harriers, 47 Bald Eagles, 46 Swainson's Hawks, 29 Ferruginous Hawks, 24 Golden Eagles, 17 Merlins, 15 Peregrine Falcons, 3 Prairie Falcons, 2 American Goshawks, 2 Rough-legged Hawks and 1 Short-eared Owl.

Thank you to every observer who documents and reports bird sightings. Each record helps us to better understand bird distribution in our state and is greatly appreciated.

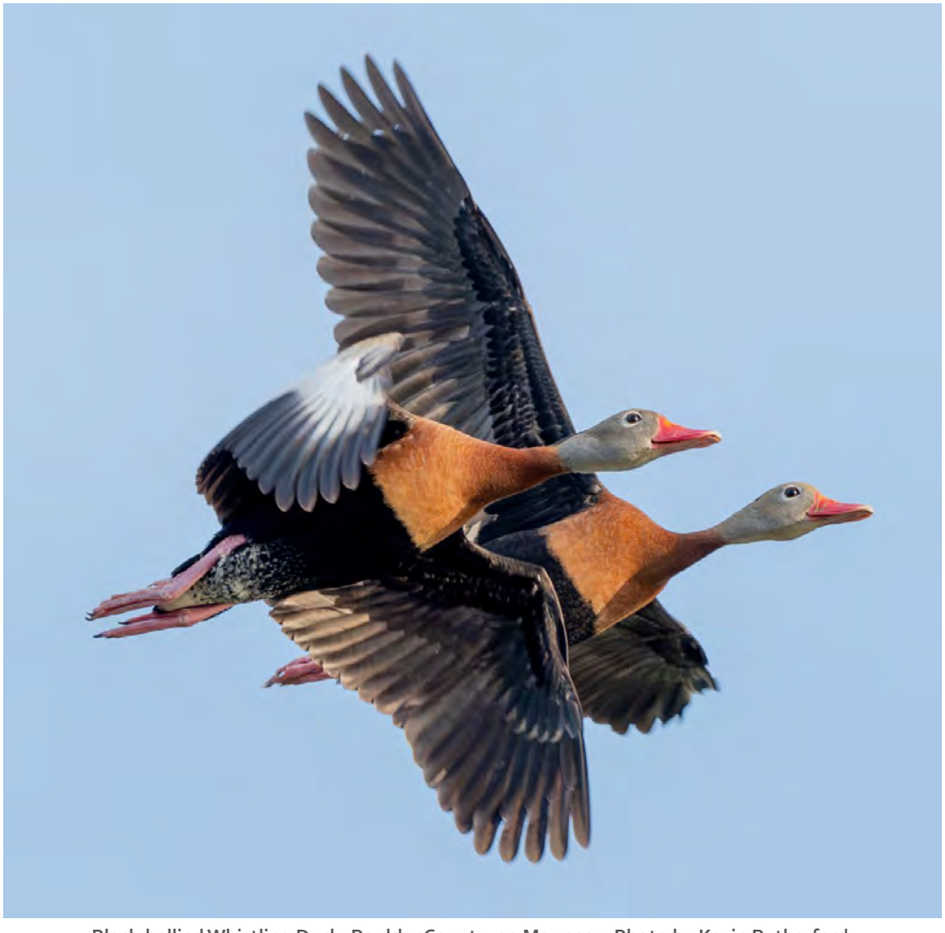
BLACK-BELLIED WHISTLING-DUCK: A group of three made an appearance at East Boulder Community Park, Boulder on 9 May (Kristin Tobias, m.ob.).

Eurasian Wigeon: A male at Neenoshe Res. and nearby Neegronda Res., Kiowa between 19 Apr and 3 May (m.ob.).

MEXICAN DUCK: Many reports from western and central Colorado throughout the period.

Long-tailed Duck: Three at Pueblo Res., Pueblo on 1 Mar (Chris Knight, Brandon Percival, m.ob.). Three at John Martin Res., Bent on 8 May (Sandra Blair). Many other reports of single birds from Arapahoe, Costilla, Garfield, Kiowa, Larimer and Otero counties.

Red-necked Grebe: One continued from winter at pond along Brighton Road, Adams through 29 Mar (m.ob.) Two at Pueblo Res., Pueblo between 1 and 13 Mar (Chris Knight, Brandon Percival,



Black-bellied Whistling Duck, Boulder County. 09 May 2025. Photo by Kevin Rutherford.

Long-tailed Duck, Costilla County. 23 April 2025. Photo by John Rawinski.

m.ob.). Two documented at McPhee Res., Montezuma on 22 Apr (Mike Thompson). One at Big Johnson Res., El Paso between 1 and 11 May (Tyler Stewart, m.ob.).

Lesser Nighthawk: One at North Shields Pond Natural Area, Larimer on 30 Apr (Kitawna Hoover, m.ob.). One at Industrial Park Pond, Montezuma on 23 May and at Totten Res., Montezuma on 26 May (Coen Dexter, Brenda Wright).

VAUX'S SWIFT: One documented at Dolores Ponds, Montezuma on 6 May (Coen Dexter, Tyler Lausten, Brenda Wright).

RUBY-THROATED HUMMINGBIRD: An adult male found at Two Buttes SWA, Baca on 14 May (Adrian Lakin, Brandon Percival).

Black-bellied Plover: Many reports from across the state in April and May.

American Golden-Plover: Two at Fruitgrowers Res., Delta on 21 Apr (m.ob.). One from Costilla County on 6 May (Tiburico Casias). One at Highline Lake SP, Mesa on 20 May (Marissa Benavente, Linda Chittum, Jim Flynn, Ada Jones).

Snowy Plover: One at Elkhead Creek Res., Moffat between 1 and 3 Apr (Kathy Mihm Dunning, m.ob.). One at Sweitzer Lake SP, Delta on 29 Apr (Bill Harris, Jon Horn) and 14 May (Verlee Sanburg).

Vaux's Swift, Montezuma County. 06 May 2025. Photo by Brenda Wright.

American Golden Plover, Costilla County. 06 May 2025. Photo by Tiburico Casias.

Black-bellied Plover, Mesa County. 08 May 2025. Photo by Debbie Tubridy.

One at Cherry Creek Res., Arapahoe on 2 May (Kellen Bryant, m.ob.). One at Towaoc WTP, Montezuma on 15 May (Mike Thompson). One at Boyd Lake, Larimer between 25 and 28 May (Bendan Beers, m.ob.). Other sightings in Baca, Crowley, Kiowa and Otero counties.

Piping Plover: One at Cherry Creek SP, ARAPAHOE on 24 and 25 Apr (Lynn Sauer, m.ob.). One at Neegronda Res., Kiowa between 29 Apr and 23 May (David Suddjian, m.ob.). One at John Martin Res., Bent on 8 May (Sandra Blair).

Whimbrel: One at Highline Lake SP, Mesa on 9 May (Linda Chittum, Ada Jones) and 19 May (m.ob.). Two at Fruitgrowers Res., Delta on 8 May (Jon Horn). Six birds at Spinney Mountain SP, Park on 10 May (Wes Donnell). One at McPhee Res., Montezuma on 21 May (Coen Dexter, Tyler Lausten, Brenda Wright). Multiple other reports from central and eastern Colorado in April and May, including a remarkable count of 40 at Lagerman Res., Boulder on 16 May (Peter Gent, m.ob.).

HUDSONIAN GODWIT: One found at Cherry Creek SP, Arapahoe on 22 May (Brake Bowser, Jonathan Bowser, Matt Newport). One at playa at County Road JJ, Morgan on 25 Apr (Laurel Armstrong, Shay Howlin). One at Pastorius Res., La Plata on 13 May (Katy Shirley, m.ob.). One at Arapaho NWR, Jackson between 24 and 26 May (Natasza Fontaine, m.ob.).

Short-billed Dowitcher: One found at mudflats at Tomichi Creek, Gunnison between 29 Mar and 4 Apr (Matthew

Snowy Plover, Moffat County (2nd county record). 01 April 2025. Photo by Kathy Mihm Dunning.

Whimbrel, Montezuma County.(3rd county record). 21 May 2025. Photo by Brenda Wright.

Swoveland, Sol Vasquez). One at Two Buttes Res., Baca on 8 May (Joey Kellner).

Ruddy Turnstone: One at Neegronda Res., Kiowa between 7 and 22 May (Joey Kellner, m.ob.). One at Lagerman Res., Boulder on 21 May (Ellen Harris, m.ob.).

Short-billed Gull: One at Boyd Lake, Larimer between 10 and 13 Mar (Tao Liu, m.ob.). One at Pueblo West Gravel Pit, Pueblo on 16 Mar (Carly Crow, Matthew Hazelgren, Ben Jacques). One near the South Platte River, Adams on 16 and 20 Mar (Chris Petrizzo, Trenton Voytko). One at Horseshoe Res. and nearby Lake Loveland, Larimer between 4 and 9 Apr (Nick Komar, m.ob.).

Great Black-backed Gull: The individual known as Murray continued from winter at Lake Pueblo SP, Pueblo through 13 Mar (Hannah Criswell). One at Cherry Creek SP, Arapahoe on 28 Mar (Ben Sampson).

Laughing Gull: One at Big Johnson Res., El Paso on 11 (Brandon Percival et al.) and 25 May (Norman Erthal). One at Neegronda Res., Kiowa on 22 May (Luke Pheneger). One at Standley Lake, Jefferson from 27 May through the end of the period (Aaron Shipe, m.ob.).

Laughing Gull, Jefferson County. 29 May 2025. Photo by Rob Raker.

Arctic Tern, Boulder County. 26 May 2025. Photo by David Prentice.

Caspian Tern, Boulder County. 03 May 2025. Photo by Kevin Rutherford.

Least Tern: One at North Gateway Park, Prowers on 24 Apr (Jane Stulp). One at John Martin Res., Bent on 3 May (Cole Wild). One at Highline Lake SP, MESA between 9 and 12 May (Linda Chittum, Amy Hudechek, Ada Jones).

Caspian Tern: Many reports from across the state in April and May.

ARCTIC TERN: One at Lagerman Res., Boulder between 23 and 26 May (Owen Robertson, Archer Silverman, m.ob.).

Red-throated Loon: One at Lake Pueblo SP, Pueblo on 16 Mar (Carly Crow, Matthew Hazelgren, Ben Jacques).

Pacific Loon: One at Lake Pueblo SP, Pueblo on 23 Mar (David Fraide).

YELLOW-BILLED LOON: One at McPhee Res., Montezuma between 30 Apr and 3 May (Coen Dexter, Tyler Lausten, Brenda Wright). One at Rifle Gap SP, Garfield on 7 May (Keith Giezentanner, George Waaler).

Neotropic Cormorant: Multiple reports throughout the season from Arapahoe, Costilla, El Paso, La Plata, Montezuma and Prowers counties.

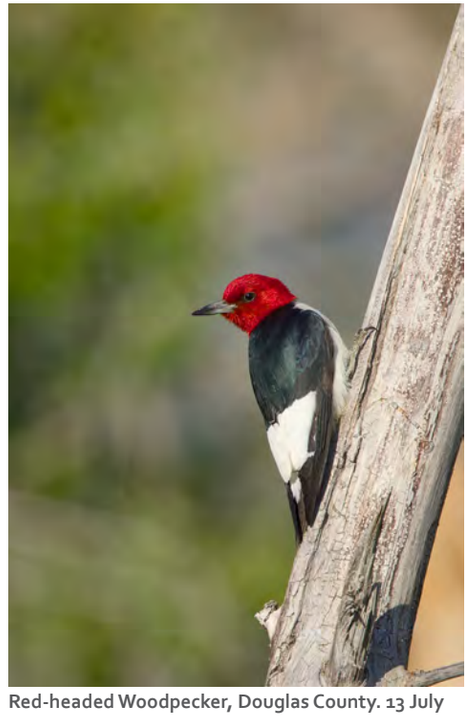
Yellow-billed Loon, Montezuma County. 2 May 2025. Photo by Brenda Wright.

Neotropic Cormorant, Costilla County. 23 April 2025. Photo by John Rawinski.

Glossy Ibis: Multiple reports throughout the season from Bent, Boulder, Fremont, Larimer, Prowers and Weld counties.

Least Bittern: One at Two Buttes SWA, Baca between 8 and 25 May (m.ob.). One in Las Animas, Bent on 19 May (Brian Genge).

Reddish Egret: One at Adobe Creek Res., Bent on 20 and 21 May (Cole Sage et al.).



Red-headed Woodpecker, Douglas County. 13 July 2025. Photo by Dave Prentice.

COMMON BLACK HAWK: One at Lake Pueblo SP, Pueblo between 12 and 28 Apr (Jeremy Ballard, Nathan Cowan, m.ob.).

Red-headed Woodpecker: One at Mountain Home Res., Costilla on 21 Apr (Lisa Clements, John Rawinski) and between 12 and 16 May (Jesse Casias). One found in Salida, Chaffee on 13 May (Trey Rogers). Many other reports from central and eastern Colorado throughout the period.

Crested Caracara, Pueblo County. 13 March 2025. Photo by Pamela Croydon.

CRESTED CARACARA: One along Red Creek Springs Road West, Pueblo between 11 Mar and 16 Apr (Harry Rurrup, m.ob.). The bird had been present since around 4 Mar, observed by local landowners and others prior to documentation by Colorado birders.

Vermillion Flycatcher, Boulder County. 04 April 2025. Photo by Jim Ward.

Vermilion Flycatcher: One found at Hamilton Res., Larimer on 27 Mar (Kurt Warmbier). One along Apple Valley Road and vicinity, Boulder between 2 and 10 Apr (Sheila Webber, m.ob.). One at South Platte Park, Arapahoe on 26 Apr (Ken Stuckey, m.ob.).

Scissor-tailed Flycatcher: One at Horsethief Canyon SWA, Mesa on 19 and 20 Apr (Brett Walker, m.ob.). One at Oxbow SWA, Otero on 27 Apr (Brian Devine, Melissa May). One at Granada SWA, Prowers on 8 May (Brandon Percival, m.ob.). One near Julesburg Res., Sedgwick on 17 May (Carly Crow,

Scissor-tailed Flycatcher, Mesa County. 20 April 2025. Photo by Debbie Tubridy.

Matthew Hazelgren) and at nearby Tamarack Ranch SWA, Logan on 21 May (Steve Larson). One at Arapahoe Bend Natural Area, Larimer on 23 May (Stephen Lee, m.ob.).

White-eyed Vireo: One at Crow Valley Campground, Weld on 14 May (Valentina Roumi). One at Bear Creek Lake Park, Jefferson on 16 May (Mark Chavez, Aaron Shipe). One at Rocky Mountain NP, Larimer on 26 May (Jay Watson) and 31 May (Valerie Griffin). Several other reports from El Paso and Pueblo counties in late April and May.

Yellow-throated Vireo: One at Mallard Pond, El Paso on 24 Apr (John Bruder, Risë Foster-Bruder, m.ob.). One at Prospect Park, Jefferson on 28 Apr and 1 May (Kevin DeBoer, Sharon Kelly).

White-eyed Vireo, El Paso County. 29 April 2025. Photo by Alan Ketcham.

One at Chatfield SP, Jefferson between 12 and 18 May (Joey Kellner, m.ob.). One at Cattail Chorus Natural Area, Larimer on 8 May (Brendan Beers, m.ob.). One at Two Creeks Open Space, Boulder from 22 May through the end of the period (Susan Ringoen, m.ob.). One at Bobolink Trail, Boulder on 23 May (Jeff Tyson).

Yellow-throated Vireo, Boulder County. 25 May 2025. Photo by Ian Loffert.

One at Teller Lakes, Boulder on 24 May (Christopher B.). One at Chico Basin Ranch, Pueblo from 29 May through the end of the period (Coen K., m.ob.).

Philadelphia Vireo: One documented at Two Buttes SWA, Baca on 8 May (Kathy Mihm Dunning, Joey Kellner, m.ob.). One in Colorado Springs, El Paso on 12 May (Alan Versaw). One at Brett Gray Ranch, Lincoln on 25 May (Daniel Maynard, Mark Peterson). One found along Rist Canyon Road, Larimer on 27 May (Simon Tolzmann). One in Holyoke, Phillips on 27 May (Luke Pheneger).

PACIFIC WREN: One at Sylvan Dale Guest Ranch, Larimer on 1 Mar (Scott Rashid). One at the Wild Basin area of Rocky Mountain NP, Boulder from 28 May through the end of the period (Melissa Mezger, Emily Paciotta, Laura Steadman).

Winter Wren: One at Yellowjacket Canyon, Montezuma between 24 Mar and 2 Apr (Mike Thompson). One at Two Buttes SWA, Baca on 3 May (Nathan Pieplow et al.). Numerous other reports from Boulder, Custer, El Paso, Jefferson, Larimer and Pueblo counties.

Eastern Bluebird, Adams County. 30 March 2025. Photo by Ian Loffert.

CRISSAL THRASHER: Up to three birds reported from Cottonwood Canyon, Baca and Las Animas between 1 Mar and 22 Apr (m.ob.).

Eastern Bluebird: One at Home Lake SWA, Rio Grande on 8 Mar (Les Barstow). Two at Snowmass Creek Road, Pitkin on 30 May (Liz Bokram, Susan Proctor). Numerous other reports from across central and eastern Colorado throughout the period.

Varied Thrush: One continued from winter at Tucker Gulch, Jefferson

Varied Thrush, Jefferson County. 24 March 2025. Photo by Steven Rash.

through 24 Mar (m.ob.). One at Poplar Street, Denver on 7 Mar (Colleen Mansfield, Allan Peryam). One at Brett Gray Ranch, Lincoln on 18 May (Mark Peterson).

Gray-cheeked Thrush: One at Chico Basin Ranch, Pueblo on 5 May (Scott Shaum) and 27 May (John Drummond). One at Grandview Cemetery, Larimer on 9 May (Henry Holden, Simon Tolzmann). One on private property in Prowers on 9 May (Joey Kellner). One at Two Buttes SWA, Baca on 11 May (Brian Genge et al.). One at Melody Tempel Grove, Bent on 13 May (Adrian Lakin, Daniel Maynard, Mark Peterson). One at Brett Gray Ranch, Lincoln on 22 May (Mark Peterson). One at Wray City Park, Yuma on 24 May (Daniel Maynard). One at Holyoke Cemetery, Phillips on 27 May (Luke Pheneger).

Wood Thrush: One at Lake Hasty, Bent on 25 Apr (Brian Devine, Melissa May). Reports from Chico Basin Ranch, El Paso throughout May (m.ob.). One at Long Lake Regional Park, Jefferson on 17 May (Mark Chavez et al.). One at Stalker

Gray-cheeked Thrush, Prowers County. 10 May 2025. Photo by Rob Raker.

Lawrence's Goldfinch, Pueblo County. 28 April 2025. Photo by Peter Burke.

Lake SWA, Yuma on 26 May (Daniel Maynard).

Bohemian Waxwing: One at Walden Ponds, Boulder between 13 and 23 Apr (Jeremy Alcorn, Winston Liu, Stephen Sears).

LAWRENCE'S GOLDFINCH: One coming to backyard feeders in Rye, Pueblo on 27 and 28 Apr (Gib Rokich, m.ob.).

Lapland Longspur: One at Eleven Mile SP, Park on 5 Mar (Joe Tuttle). One at Monte Vista NWR, Rio Grande on 7 Mar (Russell Clayshulte). One at Pastorius Res., La Plata on 11 Apr (Kristi Streiffert et al.). Many other reports from northern and eastern Colorado.

Black-throated Sparrow: One at Chatfield SP, Jefferson on 28 Apr (Mike Henwood). One in Canon City, Fremont on 25 May (Irene Shonle). Many other reports from across western and southern Colorado.

Golden-crowned Sparrow: One continued from winter at Cherry Creek SP, Arapahoe through 8 Mar (Doug Schoch). Another continued from winter at Ryan Gulch Res., Larimer through 29 Apr (Kristin Tallis). One at Barr Lake SP, Adams on 1 Mar (Candice Johnson).

Rusty Blackbird: One at Lake Pueblo SP, Pueblo on 5 Mar (Brandon Percival). One at Fountain Creek Regional Park, El Paso on 7 Mar (Liam Pentangelo). One in Holly, Prowers on 16 Mar (anonymous). One in a backyard in Colorado Springs, El Paso on 20 Mar (Marty Wolf). One at Holbrook Res., Otero on 3 Apr (Brandon Percival, Chris Wood). One in Silverton, San Juan on 4 Apr (Levi Burford, Katrina Fenton).

Black-throated Sparrow, Mesa County. 29 April 2025. Photo by Debbie Tubridy.

Worm-eating Warbler: One at Stalker Lake SWA, Yuma on 6 May (Daniel Maynard).

LOUISIANA WATERTHRUSH: One at Pioneer Res., Yuma on 26 May (Daniel Maynard).

Golden-winged Warbler: One at Two Buttes SWA, Baca on 8 May (Kathy Mihm Dunning, Joey Kellner, m.ob.). One at Chico Basin Ranch, El Paso between 19 and 22 May (m.ob.).

Blue-winged Warbler: One at Clement Park, Jefferson on 28 Apr (Bryan Arnold, Kristin Arnold, Scott Somershoe). One at Inspiration Point Park, Denver on 8 May (Isaac Boardman, Jake Shorty). One at Crow Valley Campground, Weld between 13 and 18 May (Gjon Hazard, m.ob.).

Lucy's Warbler, Larimer County. 28 April 2025. Photo by Dave Leatherman.

Blue-winged Warbler, Prowers County. 14 May 2025. Photo by Dave Leatherman.

One in Lamar, Prowers 14 May (Dave Leatherman). One at Long Lake Regional Park, Jefferson on 17 May (Mark Chavez, m.ob.).

Tennessee Warbler: Multiple reports in May, from Baca, Boulder, Chaffee, El Paso, Jefferson, Kit Carson, Larimer, Lincoln, Phillips, Prowers and Pueblo counties.

Lucy's Warbler: One at Fort Collins City Park, LARIMER on 28 and 29 Apr (Henry Holden, Kalder Korte, m.ob.). One at Adams Open Space, EL PASO on 8 May (Scott Shaum, m.ob.). One at North Shields Pond Natural Area, LARIMER on 16 May (Michael Adams, m.ob.). Multiple other reports from Mesa and Montezuma counties.

Mourning Warbler: One at Brett Gray Ranch, Lincoln on 17 May and two there on 22 May (Mark Peterson). One at Chico Basin Ranch, Pueblo on 22 May (Hannah Criswell). One at Plaster Res., Broomfield on 22 May (Jason Cole, m.ob.). One banded at Dixon Res., Larimer on 24 May and continued there through 29 May (Simon Tolzmann, m.ob.). One at Pioneer Res., Yuma on 26 May (Daniel Maynard).

Tennessee Warbler, El Paso County. 22 May 2025. Photo by Alan Ketcham.

Hooded Warbler: One at Hugo SWA, Lincoln on 29 Apr (Glenn Walbek). One in Garfield, Chaffee on 4 May (Joseph Gowen, Maxine Gowen). Many other sightings from central and eastern Colorado throughout May.

Cape May Warbler: One at Melody Tempel Grove, Bent on 13 May (Daniel Maynard, Mark Peterson). One at Chico Basin Ranch, Pueblo between 13 and 15 May (Adrian Lakin, m.ob.).

Magnolia Warbler: One at Runyon/Fountain Lakes SWA, Pueblo on 22 Apr (Mark Yeager). One at Chico Basin Ranch, Pueblo on 12 May (m.ob.). One at Horse Creek Ranch, El Paso on 17 May (Steve Getty et al.). One at Matthews-Reeser Bird Sanctuary, Larimer between 19 and 21 May (Jeramia Cibulka, m.ob.). One banded at Chatfield SP, Jefferson on 20 May (Audrey Hicks, LeAnn Joswick). One at South Republican SWA, Yuma on 21 May (Luke Pheneger). One at Brett Gray Ranch, Lincoln on 25 May (Daniel Maynard, Mark Peterson).

Hooded Warbler, Boulder County. 02 May 2025. Photo by Courtney Rella.

Bay-breasted Warbler: One at Brett Gray Ranch, Lincoln on 22 May (Mark Peterson). One at Lamar Community College, Prowers on 26 May (Joshua Smith). One at Platte Canyon Res., Douglas (Al Guarente).

Blackburnian Warbler: One at Brett Gray Ranch, Lincoln on 22 May (Mark Peterson). One at Melody Tempel Grove, Bent on 23 May (Hannah Criswell).

Chestnut-sided Warbler: Multiple reports in May, from Baca, El Paso, Jefferson, Kit Carson, Larimer, Lincoln, Prowers, Pueblo, Teller and Yuma counties.

Black-throated Blue Warbler: One at private property in Larkspur, Douglas on 9 May (Alder Nichols). One at Horse Creek Ranch, El Paso on 14 May (Steve Getty, JoAnne Peterson). One at Melody Tempel Grove, Bent on 14 May (Philip McNichols). One at Chico Basin Ranch, Pueblo on 17 May (Scott Shaum, m.ob.). Two at Boulder Mountain Park, Boulder on 18 May (Jim Hill).

Prairie Warbler: One at North Gateway Park, Prowers on 7 and 8 May (Kathy Mihm Dunning, Brandon Percival). One at Cottonwood Canyon, Baca on 24 May (Kevin Groeneweg, Tom Ewert).

Townsend's Warbler: Four at Old Saint Vrain Road, Boulder on 17 May (Joo Tan). One at Pueblo City Park, Pueblo on 17 May (Evan Carlson). One at Brett Gray Ranch, Lincoln on 17 May (Mark Peterson et al.). One at First Creek, Denver on 21 May (Christopher B.).

One at Mesa Verde NP, Montezuma on 30 May (Julia Snieder).

Black-throated Green Warbler: One in a backyard in Fort Collins, Larimer on 18 May (Belle Farley Ciezak). One at Plaster Res., Broomfield on 22 May (Kyle Carlsen, m.ob.).

Scarlet Tanager: One at Higbee Valley Road, Otero on 13 May (Daniel Maynard, Mark Peterson). One in a backyard in Laporte, Larimer on 19 May (Grant Campbell).

Northern Cardinal: A singing male along Deer Creek in Littleton, Jefferson between 23 Mar and 9 Apr (Diane Roberts, m.ob.). One in the vicinity of Hawthorn Gulch, Boulder on 26 Apr (Thomas Heinrich, m.ob.). Many other reports from eastern Colorado.

YELLOW GROSBEAK: One at a private residence in Bennett, Arapahoe on 8 May (Marion Buntyn, m.ob.).

Northern Cardinal, Jefferson County. 24 March 2025. Photo by Bil Ford.

Rose-breasted Grosbeak: Many reports from across the state in April and May.

Painted Bunting: One at County Road PP, Prowers on 6 May (Kathy Mihm Dunning, Brandon Percival). Up to two birds at Higbee Valley Road, Otero from 11 May through the end of the period (Karen Drozda, m.ob.).

Chestnut-sided Warbler, Prowers County. 26 May 2025. Photo by Dave Leatherman.

Rose-breasted Grosbeak, Larimer County. 11 May 2025. Photo by Erin Werner.

Acknowledgements

The sightings reported by contributing observers to eBird and COBirds are greatly appreciated. Special thanks to Coen Dexter, Brandon Percival, and John Rawinski for compiling regional reports.

Abbreviations

m.ob. – many observers; **NP** – National Park; **NWR** – National Wildlife Refuge; **Res.** – Reservoir; **SP** – State Park; **SWA** – State Wildlife Area

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The Hungry Bird

Birds Eating Japanese Beetles in Colorado

By David Leatherman
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My father's parents lived in Madison, New Jersey. Madison is a quaint, tree-filled town about 25 miles west of New York City. As a kid growing up in Columbus, Ohio, my family was fortunate to visit Grandma and Grandpa Leatherman's beautiful home and attached lot for a week most summers of my youth (1950s-early 1960s). The vacant lot was primarily mowed grass but also contained two gardens, one for Grandma's flowers and the other for Grandpa's vegetables. I spent many pleasurable hours chasing swallowtails with my net in the flower garden amid pink phlox up to my chest. One year my grandparents offered a bounty for each Japanese beetle (JB) I could catch and deposit in one of Grandpa's old Sir Walter Raleigh tobacco cans. Such was my introduction to *Popillia japonica*.

In its native range, the main islands of Japan, the JB is not a major pest. Apparently the two factors responsible for this status are the lack of extensive turf areas and adequate populations of natural enemies. JB was brought to the United States via human commerce. First reported at a nursery in Riverton, New Jersey in 1916, it no doubt reached our country on plant material years earlier. This was probably before 1912 when Congress passed the Plant Pest Act instituting port of entry inspections (Fleming 1963).

Once ashore in the East, JB flourished in an environment rich in moist turf for larval development, hundreds of plant species suitable for adult feeding and the absence of natural enemies. Only a few dozen individuals made up that original discovery in southern New Jersey. By 1929, a mere 13 years later, population estimates of 150 grubs per square foot of soil and 500 million adults per square mile were reported! A golf course had an estimated 7.41 million (presumably all life stages) per acre (an acre is about a football field) (Smith and Hadley 1926, Fleming 1963). By 1962, JB inhabited an area of 100,000 square miles.

Entomologists initially speculated that natural JB spread west of the 100th Meridian was unlikely. The dryness and winter temperatures of the Great Plains would form

a barrier, or so we thought. However, winter temperatures notwithstanding, some of the early literature on JB biology did predict conditions favorable to it in the Rocky Mountains and other portions of the West all the way to California where artificial irrigation was prevalent. If the beetle could get there, it might do OK provided it did not get too cold in winter.

JB was first detected in Colorado in the early 1990s via USDA-Animal Plant Inspection Service and the Colorado Department of Agriculture inspections and monitoring traps. Apparently, humans were inadvertently bringing it here with regularity, but for many years it did not establish a reproducing population. It is uncertain what transpired, but perhaps climate change quietly affected winter temperatures just enough to allow survival of sustaining numbers. Whatever has happened, at present JB is doing quite well along Colorado's Front Range and shows potential for spread to other regions of the state.

If one can divorce one's self from what JB does to plants we care about, the adults are actually quite attractive. Looking somewhat like Tesla trucks forged from bronze and green metal, with a row of white spots ringing the rear abdomen, these small scarabs are about 3/16ths of an inch long (Figures 1-2).

Figures 1 & 2. At left, a typical adult JB. At right, a copulating pair. In very dense populations, mating "balls" have been reported with 25-300 males attending one female! Photos by David Leatherman.

The larvae, found in the upper few inches of soil, are dirty-white, C-shaped grubs with easily visible legs and caramel brown head capsules (Figure 3).

Eggs are laid by females in the soil. The larvae hatch in about two weeks and spend 10 months in the soil feeding on plant roots, mostly those of grasses. In Colorado adults begin emerging in early summer and can be found out and about until September. The adults live about 30-45 days.

Irrigated turf is the staple of choice for Japanese beetle larvae. The menu of a restaurant popular with adults would be several pages long. The array of ornamental and native plants they feed on includes hundreds of species. High on their list here in Colorado are roses, grapes, asparagus, Virginia creeper and woody plants like

Figures 3 & 4. At left, a mature larva ("grub") in typical C-shaped posture. Photo by David Cappaert, Bugwood.org. At right, typical skeletonizing of rose foliage by adult JB. Photo by David Leatherman.

linden and elm. Their leaf feeding centers on tender green material, leaving only a network of veins (Figure 4). Readers are directed to the abundant on-line literature for suggestions of plants they do NOT like.

As mentioned, natural enemies of JB in North America are sparse. A few wasps and flies have been identified. Several insects regulating their populations in Japan have been identified, with over 40 being imported into the U.S. Biocontrol efforts have had limited success. The one factor that does limit populations on occasion is milky disease caused by the bacterium Bacillus popilliae (Fleming 1963,1968 & 1972, Hadley and Hawley 1934, Clark and Gage 1996).

This brings us to the subject of "The Hungry Bird:" bird diets. What birds eat JB? Along the Front Range from Fort Collins south to Trinidad, one does not need to be too observant to realize that, while the beetles are hard to miss, bird predation on them is mostly absent.

The early literature reports the following wild bird species (in no particular order) as eating JB adults in the eastern United States on multiple occasions: Purple (Common) Grackle, House Sparrow, (Eastern) Meadowlark, European Starling, (American) Robin, (Northern) Cardinal, Gray Catbird and Ring-necked Pheasant (Smith and Hadley 1926, Hadley and Hawley 1934). Wood Thrush was added by Brackbill (1947). Brown Thrasher joined the list (Tanger 1945). Finally, there is mention of Red-headed Woodpecker, Northern Mockingbird, Eastern Kingbird, Blue Jay and Scarlet Tanager (Hadley and Hawley 1934, Brackbill 1947) (Figures 5 through 19). One document mentions the New Jersey state legislature thought highly enough of the pheasant's predator potential, it passed a law (no date given) making it illegal to kill pheasants for a five year period (Athunes 1932). The woodpecker was singled out for praise in Baltimore in 1945 for going after beetles in an American elm at the rate of a dozen in 10 minutes (Brackbill 1947).

Figures 5,6,7 & 8. From l to r: male Ring-necked Pheasant, adult Red-headed Woodpecker, Wood Thrush and Eastern Kingbird. Photographs by David Leatherman.

Figures 9,10,11& 12. From l to r: Eastern Meadowlark, Scarlet Tanager, Common Grackle and Northern Flicker (yellow-shafted). Photos by David Leatherman.

Figures 13, 14 & 15. From l to r: Gray Catbird, Brown Thrasher and Northern Mockingbird. Photos by David Leatherman.

"Gulls," European Starling, Common Grackle and American Crow are documented digging large numbers of grubs, especially when fields have been recently plowed (Fleming 1963).

In addition to wild birds, domestic poultry (chickens, turkeys, guinea fowl and ducks) were recognized early on as readily eating Japanese beetle adults and grubs (Fleming 1963, Hadley and Hawley 1934). Recent use of free-range chickens in an apple orchard found them effective in reducing JB numbers, but not apple damage (Clark and Gage 1996).

Given the steady spread of JB in North America since its arrival, birds have not exerted much population control. Why not? The adults are conspicuous, abundant and accessible. With a little digging, so are larvae. I could find no mention of JB being chemically defended. Apparently, the issue with smaller birds at least, besides initial unfamiliarity with a new entrée, is the adult beetles are mostly armor. Too much exoskeleton, legs with spines, not enough meat and juice. However, birds capable of overcoming the beetle's hard exterior obtain a morsel that is 22% protein

(Hadley and Hawley 1934). House Sparrows have been observed turning adults on their backs and pecking out the guts, leaving the "shells" (Fleming 1963). That's a lot of work, maybe too much, especially if other easier foods are available.

Recently, I asked the members of two prominent listservs in Colorado for information they might have regarding birds eating JB. These were COBIRDS, with a few thousand subscribing bird enthusiasts, and PestServ composed of gardeners, arborists, landscape professionals and other members of the "Green Industry." The following summarizes by species the modest number of responses received to date.

Figures 16 & 17. At left, a European Starling forages in the grass as it would to feed on adult JB above ground or larval JB in the upper soil. At right, an American Crow ready to rumble with crunchy beetles or anything else it can find. Photos by David Leatherman.

House Sparrow

Wendy VanDeWalle of Iowa reports House Sparrows as the only bird eating JB in her "bushes" in recent years and credits them with significantly reducing the population.

In midsummer 2024, prominent Denver area birder Steve Stachowiak witnessed a group of about 10 House Sparrows working a fence covered with JB-infested Virginia creeper in the northeast Denver neighborhood of Berkeley. He exclaimed, "Finally, a redeeming trait for House Sparrows!"

On 29 August 2023 I saw a small group of House Sparrows in Fort Collins in a grape arbor heavily infested with JB. I suspect they were eating beetles but have no proof.

Black-billed Magpie

David Gulbenkian of Lakewood posted on COBIRDS in August 2024 that 3-4 magpies ate JB in his grapes for about a week.

On 20 July 2025 Pat and Joel Hayward of Masonville visited Crown Hill Cemetery in Wheatridge. The Haywards witnessed a group of 17 (probably 2-3 families)

Figures 18 & 19. Female House Sparrow at left, male House Sparrow at right. Along with magpies, perhaps our new best friend in the JB-eating business. Photos by David Leatherman.

Figure 20. A Black-billed Magpie, logo species of the Colorado Field Ornithologists. Photo by David Leatherman.

magpies roaming a multi-acre grass-clover open area feasting on a large population of copulating JBs. Let's thank the magpies for their ecological service! Each female JB produces 40-60 eggs and I suspect in this episode, many were preparing to enter the upper soil to lay eggs.

European Starling

The Haywards said a few starlings joined the magpies in eating JB at Crown Hill Cemetery. Charlie Chase of the Denver area says starlings were interested in a few JB when they first started showing up in early summer on his Virginia creeper but the birds did not sustain their interest.

Mallard

As an experiment, on 21and 22 July 2025 I picked JB adults from infested roses, threw them in Sheldon Lake in Fort Collins City Park and non-adult-male Mallards rushed to swoop them up. The park's ducks are technically wild. But perhaps "semi-domesticated" is better, because they are quite habituated to being fed despite signs urging visitors not to do so. Sue me (Figure 21).

Northern Flicker

The Haywards took a cellphone video of a flicker working the Crown Hill Cemetery area with the large density of JB. They felt certain the flicker, at least occasionally, was taking beetles. It might also have been pecking ants from mounds. It might have been doing both.

Figure 21. A female or young male Mallard spies a human-provided JB snack at Sheldon Lake on 22 July 2025. Photo by the human (David Leatherman).

American Robin

Another "probable" JB eater at the Crown Hill Cemetery situation was a robin. One would think this lawn lover finds JB all the time. It has learned to utilize exotic earthworms to the max and it is a mystery why they do not seem more interested in JB.

Northern Cardinal

Speaking of "probables," Wendy VanDeWalle of Iowa thought she saw a cardinal get JB in her yard. Considering the 20th century reports from New Jersey, this seems plausible.

Figures 22 & 23. At left, female Northern Cardinal. At right, Blue Jay. Photos by David Leatherman.

Blue Jay

Yet another "maybe" involves a Blue Jay flying to David Gulbenkian's JB-infested grapes to snatch something that was not a grape.

Dark-eyed Junco

Bill Wuerthele of Denver's Hilltop neighborhood has documented the interesting nesting extension of the gray-headed subspecies of Dark-eyed Junco from the mountains into urban habitat. This has happened in other places of late, including California. He provided a photo of a parent junco taking what might well be an adult JB to nestlings on 21 July 2021. The resolution of the photo does not quite allow confirmation.

Domestic Fowl

All other reports I have received involve domestic chickens or ducks.

Char Gottlieb of Arvada catches JB adults and feeds them to her chickens, which they eagerly accept.

Charlie Chase gifts JB adults, live or dead, to the chickens of a relative. He reports his neighbor's chickens do a decent job of keeping JB in the lower portions of grapes and Virginia creeper cleaned up but can not reach the higher ones. Since JB adults like to feed in the sunny parts of plants, the upper leaves support the majority of the population. Therein lies the rub with any hope we might have of fowl performing effective control.

Figure 24. One of Ron and Lauri's chickens wanting more JB, Fort Collins. Photo by David Leatherman.

George Beidenstein, arborist, reports catching JB by hand or in commercial traps that utilize JB pheromone bait, freezing them ("so they don't fly off") and giving them to his domestic ducks. George has even planted Virginia creeper inside pens to attract JB to their doom.

Fellow arborist D. Davis puts a baited PVC pipe over a pen to feed the attracted JB to chickens and ducks.

My innovative entomology colleague at Colorado State University, Dr. Whitney Cranshaw, has also modified commercial traps by replacing the collecting bag with a 4" diameter PVC pipe to funnel JB into pens to the delight of domestic fowl.

And just for the confirmational joy of it, on 21 July 2025 I plucked JB off an infested grape vine and fed them to chickens down the alley from my Fort Collins patch of Grandview Cemetery. When I walked on, five chickens pressed the wire clucking, "More, more…"

What To Do About Japanese Beetles

Short of throwing up our hands, a combination of the following seems best:

1. Diversify the landscape plant mix with a liberal complement of plants JB does not particularly like.

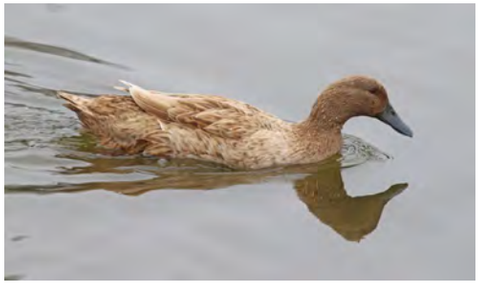
2. Reduce the square-footage of turf.

3. Cut back on lawn watering or convert to low-water grass varieties.

4. Employ domestic fowl (grandkids are ineffective) (Figures 25 & 26).

5. Install adult beetle traps (Figures 27 and 28).

6. Practice tolerance.



Figures 25 & 26. At left, one of the many domestic Mallard types, this one a "Khaki Campbell." At right, a guinea fowl. Photos by David Leatherman.

Figures 27 & 28. At left, a commercially available JB adult trap which utilizes a pheromone bait to attract flying JB into a hard, plastic baffle. The beetles hit the baffle wings, fall into the attached bag and most die of heat without need of pesticide. At right, a view into the writhing mass of beetles caught on one hot July day in Fort Collins. Locate traps away from JB-preferred plants, as not all attracted individuals make it into the bag.

Much information on homeowner management of JB exists online. Positive thoughts about one super hard freeze per winter might also be in order. Government natural resource agencies, NGOs and private "Green Industry" professionals, all tasked to some degree with monitoring biodiversity, including organisms of threat to our plants, deserve our support.

Speculation

Based on what has/does eat JB, future species I would suspect we might see eating JB at least on occasion if not aggressively, in Colorado are Canada Goose, Wood Duck, Wild Turkey, Killdeer, Upland Sandpiper (at turf farms), Ring-billed Gull, California Gull, Franklin's Gull, American Kestrel, Lewis's Woodpecker, Western Kingbird, Woodhouse's Scrub-Jay, House Finch, Song Sparrow, Spotted Towhee, Yellow-headed Blackbird, Western Meadowlark, Bullock's Oriole, Great-tailed Grackle, Western Tanager, Black-headed Grosbeak and Blue Grosbeak. Plenty of prospects exist among other species not mentioned.

Summary

The Japanese Beetle is here, probably for good. As is the case elsewhere in the United States since JB's introduction on the East Coast 100+ years ago, bird response has been subdued. In Colorado we know the House Sparrow and Black-billed Magpie, along with domestic chickens and ducks, readily accept them. A limited number of other bird species eat them on occasion. We should continue to watch and document bird responses. Perhaps with time and greater familiarity, more species will eat them in bigger numbers. Adaptation abounds in the natural world, and as the bumper sticker I despise ought to say, "Evolution Happens."

Acknowledgments

I appreciate all the folks who responded to my inquiry for anecdotes and information about birds and Japanese beetles. My solicitation was just before press time. If significant additional information materializes, I will pass it along here and/or on COBIRDS.

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Science News

Paper to PDF: Gent and Liu Fill 30-year gap in Rare Bird Records

150 Years of Bird Record-Keeping in Colorado

By Heather McGregor
Science Editor

A neck-banded Trumpeter Swan spotted in Littleton in 1975 and tracked to its original bander in Alberta, Canada. A starving Magnificent Frigatebird that attacked a windsurfer on Green Mountain Reservoir in 1985. An injured Gyrfalcon found on a roadside near Center in 1997, meticulously sketched by a birder as part of his Bird Records submission.

These are some of the gems recently added to the archives of rare bird sightings on the Colorado Bird Records Committee website. It's a multi-year effort by Peter Gent, chair of the Bird Records Committee, with help from Winston Liu, a CFO member with a scanner in his home office. Gent, of Boulder, and Liu, of Lafayette, are filling in a 30-year gap in CFO's online record of rare bird sightings by scanning nearly 1,600 sets of paper documentations and uploading them to the Colorado Bird Records website.

These paper documentations of rare bird sightings date from the committee's founding in 1972 to 2006, when the committee made its final transition to all-electronic submissions. These files provide the detail-rich supporting evidence for rare bird sightings that, in most cases, were already posted to the Colorado Bird Records website, but in bare-bones form. Listings that consisted only of a date, location and the names of those making the submission are now, gradually, gaining the full depth of information about the sighting.

150 Years of Bird Record-Keeping in Colorado

Records of bird sightings in Colorado go back to the 1870s, and were maintained for nearly a century by the Denver Museum of Natural History, now the Denver Museum of Nature and Science. Museum curators collected hundreds of bird specimens and kept card files to track sightings. In 1965, the museum published an authoritative, narratively rich and beautifully illustrated compilation of sightings,

Peter Gent, center, Chair of the Colorado Bird Records Committee, initiated the project to digitize old paper records of bird sightings.

Winston Liu is assisting Gent by scanning hundreds of old paper records. He has come across several gems in the process.

setting the state's list at 439 species. The two-volume "*Birds of Colorado*" was researched and written by museum director Alfred M. Bailey and staff naturalist Robert J. Niedrach, both with extensive field experience in Colorado and across the globe (Bailey, 1946), with plates painted by 23 artists and photographs by 36 photographers.

In 1992, a new generation of museum staff and active birders across the state, led by Robert Andrews and Robert Righter, produced a compilation that set the state's documented species list at 444. "*Colorado Birds: A Reference to their Distribution and Habitat*," also published by the Denver Museum of Natural History, includes range maps, seasonal occurrence bars, population status and records for each species. (By 2025, Colorado's accepted list of species reached 521.)

While Colorado Field Ornithologists first formed in 1935 as the Colorado Bird Club, CFO did not begin to systematically track bird sightings until 1972. That's when Jack Reddall and other CFO members formed what was called the Official Records Committee (Reddall, 1973). The project gave birders across Colorado an opportunity to fill out a multi-page form documenting their rare bird sightings. It also established what's now known as the Bird Records Committee, a team of experts that scrutinized submissions and voted on whether they should be accepted, laid aside for further evidence, or not accepted. For the next 30-some years, sightings were submitted in paper form, circulated by mail to committee members and published in the *Colorado Birds* journal.

By the late 1990s, committee members began building an electronic spreadsheet to keep track of accepted sightings. Over time, members also tapped the Denver Museum books to note the earliest sightings of rare birds, and added many of those records to the spreadsheet. In 2004, Mark Peterson, a committee member, built the first version of the Colorado Bird Records website, setting up an online submission form and the means for committee members to vote on records using the website. Paper documentations still trickled in, but by 2006, all submissions were submitted and reviewed electronically.

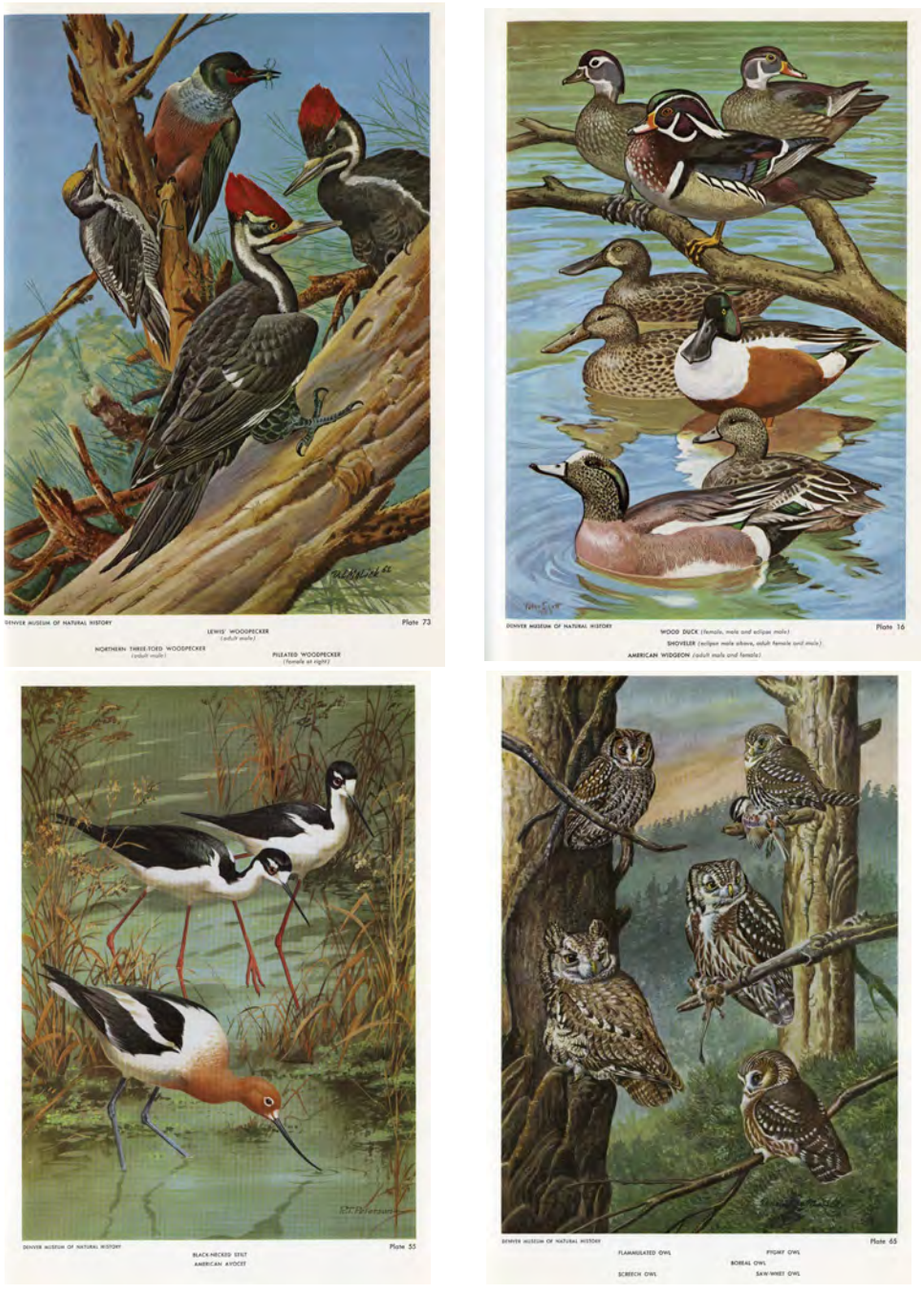
Websites gained sophistication over the next decade, and members of the Bird Records Committee sought a more robust version for their site, according to Doug Faulkner, a former editor of *Colorado Birds* and former Records Committee member and chair. Faulkner's connection with Kay Niyo of Evergreen, a former editor of Iowa's state birding journal, linked him to Des Moines resident Ann Johnson, who had built Iowa's bird records website in 2000. CFO hired Johnson to build a new Colorado site, which launched in 2013 (Johnson and Faulkner, 2013). This site continues to serve the Colorado Bird Records Committee today, at COBRC.org. It's separate from CFO's organizational website, CoBirds.org, and users must set up a separate account from their CFO account.

To populate the site, Johnson used the Records Committee's spreadsheet that, at the time, contained more than 3,200 records. The overhauled site added a submission portal that warns birders if their sighting is not as rare as they might think, as well as an option to upload photos and audio, a searchable database, and an archive of Bird Records Committee annual reports. Johnson still maintains the CBRC website, and recently added a feature to make it easy to directly submit eBird reports to the website. The current committee consists of nine members, seven of whom vote on each record, which ensures that committee members do not vote on their own records.

Sort, Discard, Sort Again, Scan, Upload

From the 1870s to the present, birders have kept track of sightings, employing the customs and technology of their times. It began as collected specimens and card files in museum drawers, then evolved into paper records and photos in manila file folders, and are now electronic records with digital images and audio hosted on the CBRC website and accessible in a searchable database. The work under way by Gent and Liu is taking the last remnants of hard copy documents from the paper records phase and digitizing them for the online archive.

Previous Bird Records Committee members started some of this scanning work for the 2013 website, Faulkner said, but the boxes were numerous and the task was daunting. Now with Gent and Liu chipping away at the stacks, the skimpy online



Four of the 124 color plates, painted by 23 artists, included in the two-volume "Birds of Colorado," published in 1965 by the Denver Museum of Natural History. Upper left, Plate 73, Lewis's Woodpecker, top, (Northern) Three-toed Woodpecker, lower left, and Pileated Woodpeckers, painted by Donald L. Malick. Upper right, Plate 16, Wood Ducks, top, (Northern) Shovelers, middle, and American Wigeon, bottom, painted by Peter Scott. Lower left, Plate 55, Black-necked Stilt and American Avocet, painted by Roger Tory Peterson. Lower right, Plate 65, Flammulated Owl, upper left, Pygmy Owl, upper right, Boreal Owl, center, (Western) Screech Owl, lower left, and (Northern) Saw-whet Owl, lower right, painted by Donald L. Malick. Plates from "Birds of Colorado, Vols. I and II," courtesy Denver Museum of Nature and Science.

records of the paper era are gaining the documents birders submitted to validate their sightings. “We tried this as a pilot, but it fizzled out. It takes a lot of time,” Faulkner said. “Peter and Winston should be given a medal of some kind.”

The paper-era supporting detail typically starts with CFO’s two-page submission form, with questions calling for details about the bird’s size, shape, plumage and behavior, along with the habitat and the birder’s prior experience identifying the rare bird and similar species. Birders also submitted letters, sketches, copies of photographs, newspaper clippings, mentions in scholarly journals and articles from the CFO Journal. Together, these observations and other evidence tell some intriguing stories about rare bird sightings during this time. (More about that TRSW, MAFR and GYRF below.)

To make this trove of detail available online, Gent’s first task was to hunt through the files, which had been organized by date, to eliminate the duplicate copies. In that pre-digital era, the Bird Records Committee made several paper copies of each submitted sighting, which were then circulated, by mail, to committee members. A lot of those duplicates ended up in the file boxes. Gent said it took about a year to weed out duplicates while making sure one copy of every sighting remained. “Most were copies, but for about 5 percent, there was no other record of that sighting,” he said.

He spent another six months re-sorting all the records into files by species, and then sorting the species files to the current taxonomic order. By the end of 2022, Gent had the files pared down and organized to align with the taxonomic structure of the Colorado Bird Records website. Now he needed help with the digital scanning. CFO Board Member Megan Jones Patterson put out a call to members, and Winston Liu stepped forward. “My first scan was on Jan. 29, 2023, for a Fulvous Whistling-Duck,” Liu said. That folder had only one documented sighting, from Weld County in 1990 by Jerry Cairo and Joseph Himmel.

“Peter asked me to start with the species that had the least number of records. Now we are into the species with more documented sightings,” said Liu. “I just scanned about 24 sightings for Scarlet Tanager.” Once the documents are scanned and joined into a single PDF for each sighting, Liu emails those PDFs back to Gent, who then uses a backside portal on the website to upload the PDF file. By August 2025, Gent and Liu had scanned and uploaded about 700 sets of documentations, leaving about 800 more to go.

Most uploads take about 10 minutes, because Gent must take the extra step of creating a location map for that sighting’s webpage. Using the birder’s narrative as a guide, Gent locates the spot on an electronic map to obtain the latitude and longitude coordinates, adding that data to the sighting's page. Once he enters the coordinates, website visitors can click on a tiny Colorado map to get a pop-up window showing a map or satellite view of the exact location.

An oddity Gent has dealt with is the two systems of numbering for rare bird sightings. In 1972, Jack Reddall set up a three-number system in which the first number was based on the taxonomic order of bird families at the time, the second was the last two digits of the year of the sighting, and the third was the sighting’s chronological number as it was submitted that year. Thus, the code for that Fulvous Whistling-Duck is “8-90-14,” with “8” for the family of ducks and geese, “90” for the submission in 1990, and “14” for Cairo and Himmel submitting the 14th rare bird sighting for that year.

When Larry Semo took over as chair of the committee in 1997, he was well aware that bird taxonomy was changing and Reddall’s numbering protocol had become obsolete, Gent said. By then, ducks and geese, for example, showed up at the top of the taxonomic list. Semo implemented a simple, durable two-number protocol. The first number is the four-digit year of the sighting, and the second number remains the sighting’s chronological number as it was submitted that year, but in three-digit form. Sightings submitted since 1997 use this two-number code, as do historic sightings that have been added to the website since then. Thus, the first state record of a Crissal Thrasher, seen Nov. 30, 2024, in Cottonwood Canyon by Brian Genge and Luke Pheneger, and a few days later by Josh Bruening, is numbered 2024-032.

Left, Plate 64, Black-billed Cuckoo, top, Yellow-billed Cuckoo, middle, and Roadrunner, by Orville O. Rice. At right, Plate 32, Prairie Falcon, top, and Peregrine Falcon, bottom, by E.L. Poole. Plates from "Birds of Colorado, Vols. I and II," courtesy Denver Museum of Nature and Science.

Similarly, the new system is applied to many historic records, such as the September 1927 collection of an Anhinga in Adams County by Jacob Muzik, numbered 1927-001.

Now, About that Wayward Swan, the Desperate Frigatebird and the Injured Gyrfalcon

Trumpeter Swan *(Cygnus buccinator),* Dec. 1, 1975, Bowles Lake in Littleton, Arapahoe County, and Main Reservoir near Lakewood, Jefferson County. Record No. 8-75-160.

Walter Graul, a non-game wildlife officer with what was the Colorado Division of Wildlife, spotted a Trumpeter in the mostly-frozen Bowles Lake that afternoon, along with two Mute Swans. He noted a six-inch-wide yellow neck collar on the bird, and was able to read the band number with his 10-power binoculars: 18TA. As explained in a letter to Jack Reddall, Graul tracked the band number to Dr. W.D. Stephens of the Canada Wildlife Service in Edmonton, Alberta. Stephens had banded the bird in the Grand Prairie region 280 miles north of Edmonton, on Sept. 9, 1975. "Banding recoveries indicate that the Grand Prairie Trumpeter Swan population winters along the Snake River in Idaho. So, the Bowles Lake bird appeared to be off-course!" Graul wrote.

The Associated Press picked up the story, published in the *Denver Post* on Dec. 7, 1975. An alert reader, Henry Pelon of Denver, had also seen the swan several miles away on the grassy western shore of Main Reservoir, and took a photo with his Kodak Instamatic X30. He contacted Graul and submitted his own rare bird report to CFO. "Alert and somewhat shy. Walked very slowly, large feet about the size of a man's hand. When the bird flew away, the wingspread looked as if it might be as much as 8 feet," Pelon wrote.

Magnificent Frigatebird *(Fregata magnificens)*, Sept. 14, 1985, near Chatfield Reservoir, Arapahoe County, and Sept. 16, 1985, on Green Mountain Reservoir, Summit County. Record No. N-85-35.

Hans-Joachim Feddern and Thomas Clay Bohanon, both of Littleton, spotted the Frigatebird twice on Sept. 14, for about five minutes each time, circling high in the air in the Chatfield Reservoir area. They first saw it near a hot air balloon, chased it in their car and spotted it again circling over a pond at Kipling and Ken Caryl. Betsy Webb, then-curator of zoology at the Denver Museum of Natural History, takes up the story in her vivid article, "Against All Odds: First Record of a Magnificent Frigatebird in Colorado," published in the Winter 1985 edition of the *CFO Journal* (Webb, 1985).

Plate 10, a pair of Trumpeter Swans, top, and a pair of Whistling Swans (now called Tundra Swans), painted by F.L. Jaques. Plate from "Birds of Colorado, Vols. I and II," courtesy Denver Museum of Nature and Science.

Webb reported more sightings of the bird, next from Marion Metsopoulos of Lakewood, who saw the bird circle overhead, and then from Heeney, 50 miles west and over the Continental Divide, where E.R. Timken and his neighbor, John Colishaw, spotted it over Green Mountain Reservoir. The story takes a dark turn two days later at the reservoir, when the bird hovered over and then attacked windsurfer Jerry Mulliken of Vail, delivering a gash to one of his hands while striking at him with its bill and feet.

"Mulliken made it to shore with the bird in pursuit. In defense, a group of windsurfers gathered onshore began throwing stones to ward off the attacks," Webb wrote. Taking hits to its body and head, the bird soared upward, and then fell to the ground. Its right wing was broken and bleeding, and an older wound on its neck was infected. "The group that had gathered decided to dispatch the bird by wringing its neck." Webb reported.

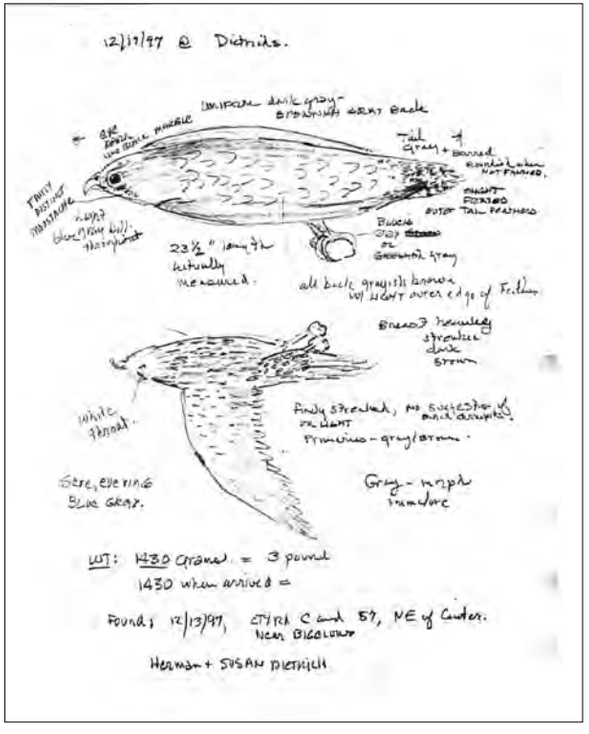
Mulliken kept the carcass and called the Division of Wildlife. Officer Bill Andree retrieved the carcass, identified the rare tropical bird, put it in a freezer and then sent the frozen carcass to the Denver Museum of Natural History. A necropsy there revealed a wounded female bird, in molt, 30 percent underweight with no body fat and a gut packed with parasitic roundworms. Webb noted that Hurricane Elena had recently ripped across the Gulf of Mexico, and may have blown the bird inland and more than 1,000 miles out of its normal range.

Gyrfalcon *(Falco rusticolus),* Dec. 13, 1997, near Center, Saguache County. Record No. 1997-22.

Wildlife veterinarians Herman and Susan Dieterich, then-owners of the Frisco Creek Wildlife Hospital and Rehabilitation Center near Del Norte, picked up an injured falcon on Dec. 13, 1997, from a roadside near the Bigelow Springs ponds on Saguache County Road C, along with the Mallard hen it had caught. They took the bird to their facility to care for its injuries. Susan asked John Rawinski, then a U.S. Forest Service soil scientist in the San Luis Valley, to help identify the bird, which she described as "either a Gyrfalcon, or a Prairie Falcon on steroids." Rawinski visited the wildlife rehab center on Dec. 17, 1997, with another local birder, Jerry Poe, and again on Jan. 17, 1998, with his wife, Lisa Rawinski. All three concurred with Susan's identification of the bird as an immature female Gyrfalcon.

Rawinski's initial submission, made Jan. 23, 1998, included a narrative description using the CFO Sight Record Form, a low-light photograph taken at the rehab center on Dec. 17, and a detailed sketch. "This bird dwarfed other similar falcons," Rawinski wrote. His first impression when Susan opened the cage door "was of a turkey on a platter … it was huge." In a nearby flight cage were an adult Peregrine and an adult Prairie Falcon. "It was awesome to see the size differences!" Rawinski

Upper left, Plate 36, White-tailed Ptarmigan, shown in spring plumage at top, male in fall plumage at center, and in winter plumage at center,and in winter plumage at bottom, painted by Dexter F. Landau. Upper right, Plate 76, Scissor-tailed Flycatcher, painted by Donald L. Malick. Lower left, Plate 117, Lark Bunting female and male, painted by Don. R. Eckelberry. Lower right, Plate 83, a trio of corvids with Clark's Nutcracker, top, Black-billed Magpie, lower left, and Pinyon Jay, lower right, painted by Donald L. Malick. Plates from "Birds of Colorado, Vols. I and II," courtesy Denver Museum of Nature and Science.



John Rawinski of Monte Vista included this detailed sketch of an injured Gyrfalcon with his 1998 submission of a rare bird sighting to the Colorado Bird Records Committee. In the era before affordable digital cameras, some birders included sketches when they submitted rare bird sightings.

Wildlife rehabilitators Herman and Susan Dietrich found the falcon lying injured on a roadside near Center, in Saguache County, in December, 1997. Rawinski made the sketch after viewing the bird a few days later at the Dietrich's Frisco Creek Wildlife Hospital. He noted several indicators in plumage that led to the identification, along with the bird's sizable weight and length.

noted. His full-page sketch showed two views of the bird, back and belly, pointing out distinctive plumage and measurements.

In scanning hundreds of pages of documents from the 1970s, 80s and 90s, Winston Liu has come across many such drawings. "I admire these sketches. Some are truly pieces of art," he said. In an era before widespread availability of digital cameras, sketches of rare bird sightings could illustrate field marks, habitat and, in Rawinski's sketch, precise measurements and plumage notations that helped identify the bird. "I really admire people who have that talent." Liu said.

Still, the Bird Records Committee had doubts, suspecting the bird could have been an escaped captive. Two rounds of committee voting were split. It wasn't until Rawinski submitted a supporting letter from Susan Dieterich in December 1998, along with a memo describing his conversation with Kathy Konishi, falcon permit specialist with the Colorado Division of Wildlife, that the records committee cast a 7-0 vote to accept.

While the Dieterichs successfully cared for hundreds of injured animals during the 15 years they owned the Frisco Creek facility (Malmsbury, 2004), they could not overcome the Gyrfalcon's injuries. "Over a period of two months, medical and surgical management of this falcon was insufficient to overcome subsequent metabolic deterioration," Susan Dieterich wrote. The bird died Feb. 16, 1998.

Dusky Grouse, Plate 34 from "Birds of Colorado," painted by Owen J. Gromme courtesy Denver Museum of Nature and Science.

Colorado Parks and Wildlife now owns and operates the Frisco Creek wildlife rehabilitation center. John Rawinski continues to actively bird and look for rare species from his home in Monte Vista. He is the author of *Birding Hotspots of South-central Colorado*, a guide to the best birding locations in the San Luis Valley, and is at work on a forthcoming memoir about his decades of experience in documenting rare birds in the valley.

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Field Marks

Update on the Status of the Cassia Crossbill (*Loxia sinesciuris*) in Colorado

By Christian Nunes

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The existence of Cassia Crossbill (*Loxia sinesciuris*) (pronounced "CASH-uh") in Colorado is one of the most interesting ornithological phenomena documented from the state in modern times. The species was first noticed in Grand County on 16 July 2021 (see Nunes 2022). The revelation that this cryptic species was present 700 kilometers from their known resident range brought up many questions. Was this just a lucky find? Are there more Cassia Crossbills in the region? If so, how long have they been here? Are they breeding, and if so, are they hybridizing with local Red Crossbills (*Loxia curvirostra* types 2 and/or 5)? Since the initial discovery, Colorado observers have helped document the widespread presence of Cassia Crossbill in the Lodgepole Pine (*Pinus contorta*) zone of the Colorado Rocky Mountains (see Photos 1 & 2), and even into the Snowy Range of southern Wyoming. The crowd sourcing of Cassia Crossbill observations allows us to answer some of the original questions posed by the existence of the species here in the first place and brings up some other more pressing questions as to the evolutionary trajectory of this incipient species.

There appears to be a small, stable population of Cassia Crossbills in Colorado (see Figure 1). Twenty or more documented reports have been submitted every year since their modern discovery in Colorado (see Figure 2). This includes annual reports of breeding activity in the form of recently fledged juveniles. Cassia Crossbills have now been documented from 13 counties in Colorado (see Figure 3), as well as Carbon and Albany Counties in Wyoming. A total of 113 eBird checklists include documented Cassia Crossbills from Colorado between March 2012 and August 2025, encompassing 357 individuals (eBird 2025a).

Nathan Pieplow retroactively discovered Colorado's first Cassia Crossbill at the Wildernest community in Summit County on 17 March 2012 (https://ebird.org/checklist/S120480546) after reviewing historic crossbill audio recordings. Nathan

A male Cassia Crossbill seen at Turquoise Lake, Lake County, 13 April 2025. Photo by Brian Faulkner.

A female Cassia Crossbill seen at Turquoise Lake, Lake County, 13 April 2025. Photo by BrianFaulkner.

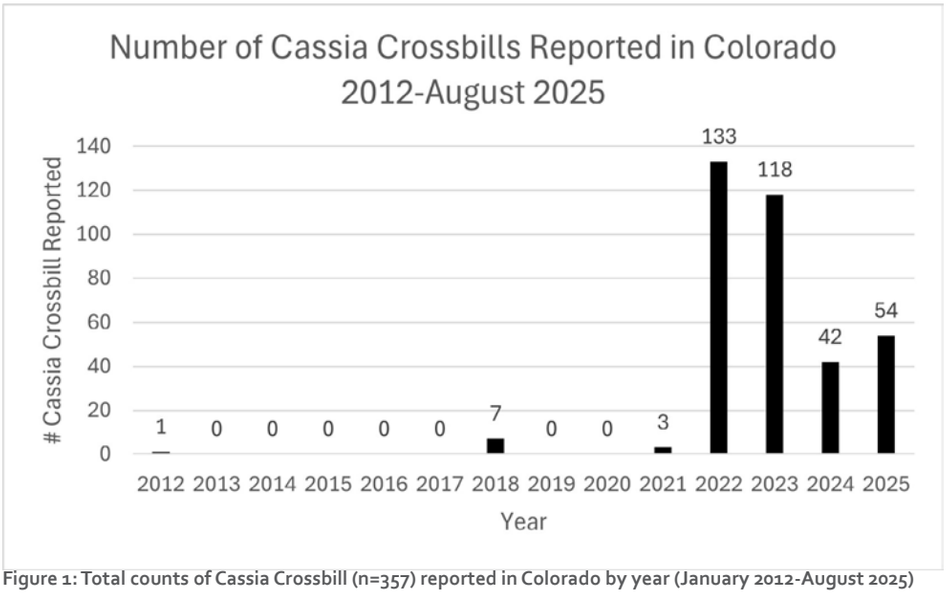

Figure 1: Total counts of Cassia Crossbill (n=357) reported in Colorado by year (January 2012-August 2025) demonstrating the species' persistence in the region since they were first knowingly detected in 2021. The 2012 and 2018 records represent post-hoc records found after review of audio recordings.

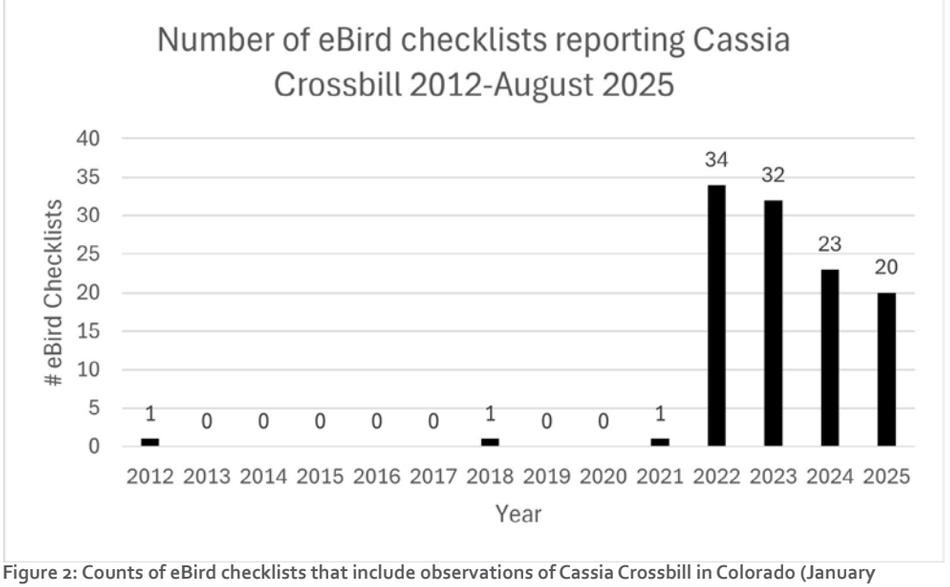

Figure 2: Counts of eBird checklists that include observations of Cassia Crossbill in Colorado (January 2012-August 2025) showing the stable frequency of reports since their presence was first reported in 2021.

also retroactively discovered the first Wyoming Cassia Crossbill record which he documented on 8 July 2018 near Ryan Park, Carbon County, WY (https://ebird.org/checklist/S47108323). All records are from the Montane (Upper Transition) and Subalpine life zones, ranging in elevation from 2,578 m (CR 190, Larimer Co.) to 3,693 m (Independence Pass, Pitkin Co.). This distribution roughly mirrors the

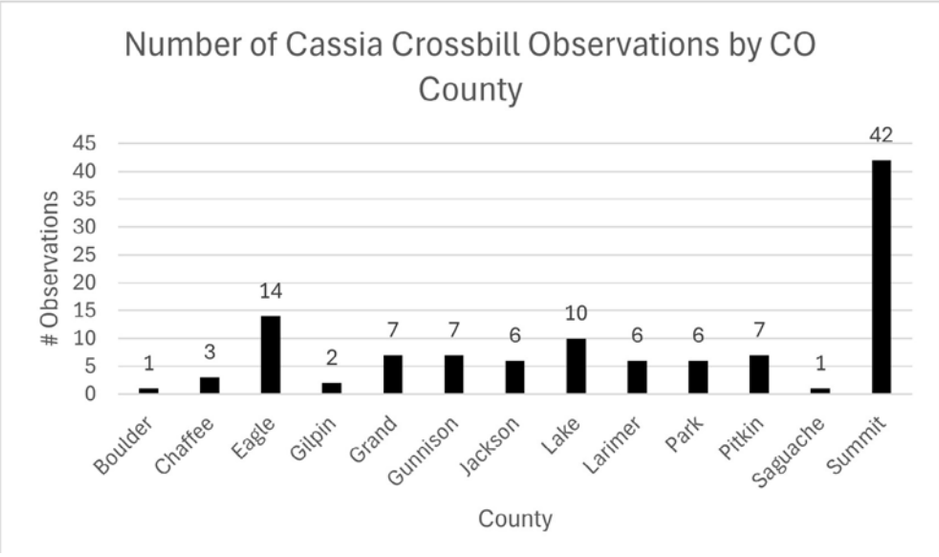

Figure 3: Report frequency of Cassia Crossbill by Colorado county through August 2025.

occurrence of Lodgepole Pine in the region. There are 11 eBird observations of Cassia Crossbills foraging on Lodgepole Pine cones (e.g. Photo 3), but no reports of foraging on cones of other tree species. They also associate with other expected Montane and Subalpine tree species, including Ponderosa Pine (*Pinus ponderosa*), Douglas-fir (*Pseudotsuga menziesii*), Spruce (*Picea sp.*), Subalpine Fir (*Abies lasiocarpa),* and Quaking Aspen (*Populus tremuloides*).

Thirteen Colorado Cassia Crossbill observations report family groups consisting of adult crossbills and streaky juveniles (see Photo 3). Of these, 6 reports document juvenile begging calls ("chitoo" calls; see Benjamin Guo and David Tønnessen's excellent recording here: https://macaulaylibrary.org/asset/640111764). Others including descriptions like, "still clumsy juveniles," (Jack Yanko's report from Gunnison County: https://ebird.org/checklist/S258181525) and Joe Tuttle's description of, "One adult female, one adult male, two juvs, one juv being fed by each adult. Juvs displaying wing quivering while near adult, one juv doing presumed begging call fairly loudly for a good period of time," from Park County (https://ebird.org/checklist/S197376610). Christian Hagenlocher recorded a family group, including a begging, streaky juvenile, at The Link School (Chaffee Co.) on 18 July 2018 (post hoc 2nd state record; https://ebird.org/checklist/S47272367), and the author observed a family group that included a streaky juvenile off FS 555 in Grand County on 26 July 2020 (post hoc 3rd state record; https://ebird.org/checklist/S91855481).

Other reports of begging juveniles include a recording of begging calls by Darcy Juday during a Denver Field Ornithologists' outing to the Rock Creek Trail (Summit Co.; https://ebird.org/checklist/S115817476) on 7 July 2022. There were five reports of juvenile plumaged Cassia Crossbill from the Alfred M. Bailey Bird Nesting Area in Summit County from 21 July-7 August, including documentation of a begging fledgling (https://ebird.org/checklist/S115552501; specifically the second half of this recording: https://macaulaylibrary.org/asset/469608871). Observations of juveniles in Colorado range from 8 July-3 October. In Idaho, active Cassia Crossbill nests have been found from 11 March-21 August, with observations of juveniles peaking in June (Benkman and Porter 2020). Late nests (mid-June-August) are likely second broods. Adult Red Crossbills will continue to feed fledglings up to 33 days post-fledgling (Bailey and Niedrach 1953). The post-fledgling dependence period in Cassia Crossbill is likely similar. Although no active nests have yet been found in Colorado, it seems indisputable that Cassia Crossbills are breeding here and likely have been since at least 2018.

Resident or Irruptive?

The seasonality of Cassia Crossbills in Colorado is strongly summer-biased, but there have been reports throughout the year (see Figures 4 & 5). This pattern mirrors that of Cassia Crossbill counts from Idaho (see Figure 6). The summer spike in observations in both Colorado and Idaho could be explained by the tendency for eBird users to visit the inhabited areas during the summer months, as well as the difficulty of access to these mountainous areas from autumn through the

A juvenile Cassia Crossbill seen at the Alfred M. Bailey Bird Nesting Area, Summit County, 7 August 2022. Photo by Brian Genge.

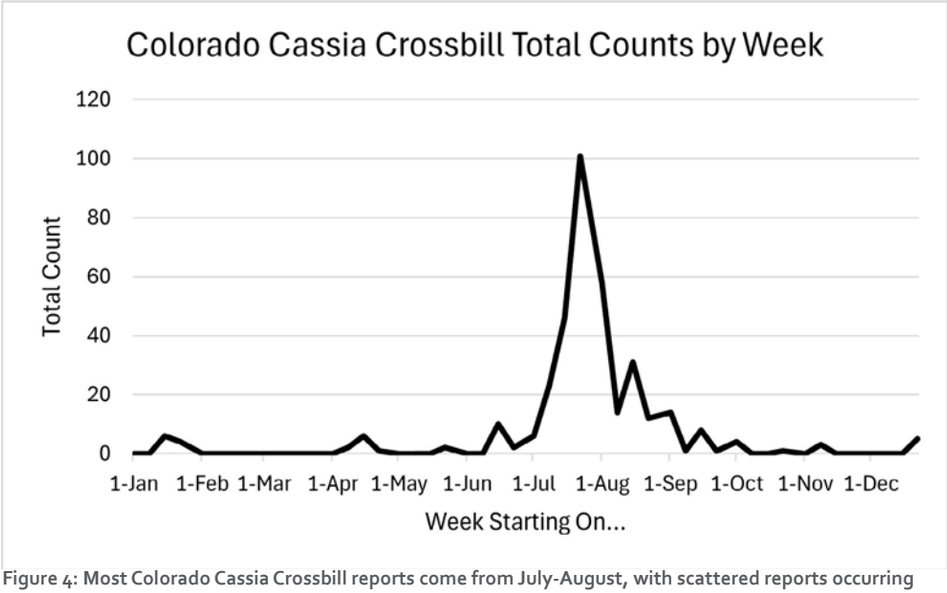

Figure 4: Most Colorado Cassia Crossbill reports come from July-August, with scattered reports occurring throughout the year.

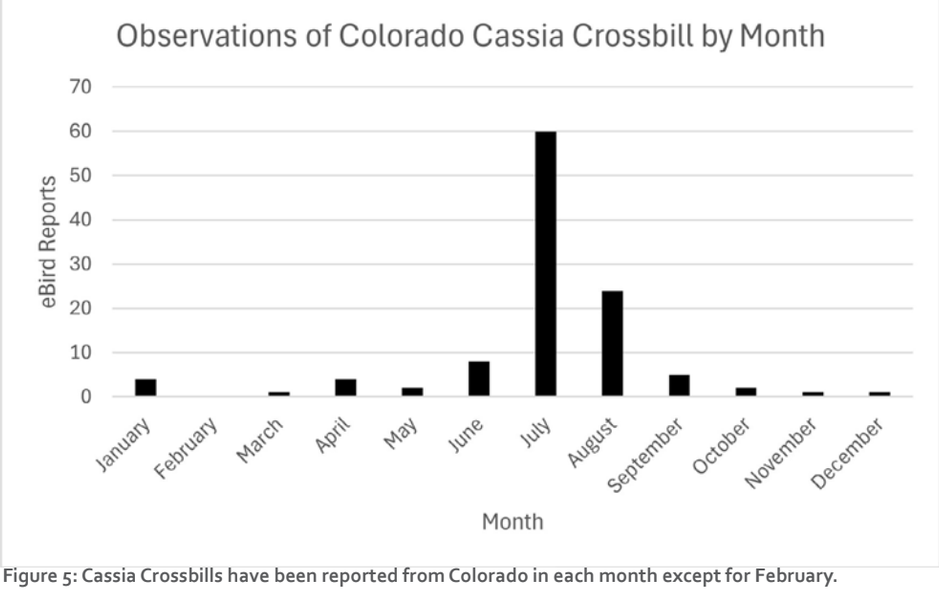

Figure 5: Cassia Crossbills have been reported from Colorado in each month except for February.

spring. Like the core populations in Idaho, Colorado Cassia Crossbills appear to be sedentary, year-round residents.

This contrasts with the report pattern seen with irruptive Red Crossbill types. For instance, there was a major flight of Red Crossbill (Douglas Fir or type 4) in Colorado during the fall of 2023 (see Figure 7), then a smaller pulse the following spring when they moved back through the state on their way back to the core

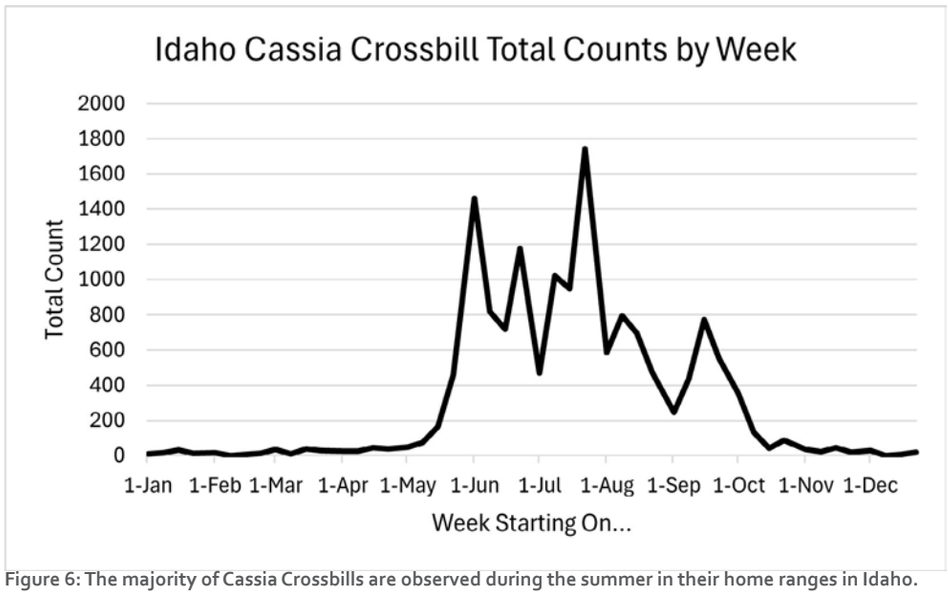

Figure 6: The majority of Cassia Crossbills are observed during the summer in their home ranges in Idaho.

breeding range in the Pacific Northwest (eBird 2025b). These nomadic crossbills were found in a variety of habitats including urban areas with numerous foraging options among planted spruces, firs and pines. Of the 66 reports of type 4 Red Crossbills in Colorado, none indicates evidence of breeding. There are no reports of Cassia Crossbills outside their core elevational range and foraging habitat, supporting their status as a resident and not as part of an irruption of non-breeding individuals as depicted in the Birds of the World range map (see Figure 8).

Benkman et al.'s (2009) work has elegantly demonstrated the unique natural history of the Cassia Crossbill in Cassia County, Idaho, where the primary Lodgepole Pine seed predator, the American Red Squirrel (*Tamiasciurus hudsonicus*) is absent, leading to an evolutionary arms race between the crossbills and the Lodgepole Pine. As Cassia Crossbills became the primary seed predator in the South Hills and Albion Mountains of Idaho, the Lodgepole Pines evolved more serotinous cones. These resinous cones retain their seeds for longer, providing Cassia Crossbills with a stable food source, which in turn leads to a more sedentary lifestyle than Red Crossbills. However, Benkman (2016) describes how populations of Cassia Crossbill in Idaho declined by upwards of 80 percent after successive summers with multi-day heat events where temperatures rose above 31˚C. This type of heat melts the resin protecting the cones, causing the seeds to drop to the ground, which ultimately decreases the available food for Cassia Crossbills. Cassia Crossbill populations returned to pre-heat wave levels by 2015. In addition, multiple wildfires have burned large areas of the South Hills and Albion Mountains of southern Idaho, including the 2020 Badger Fire that burned over 36,400 hectares of Lodgepole Pine and

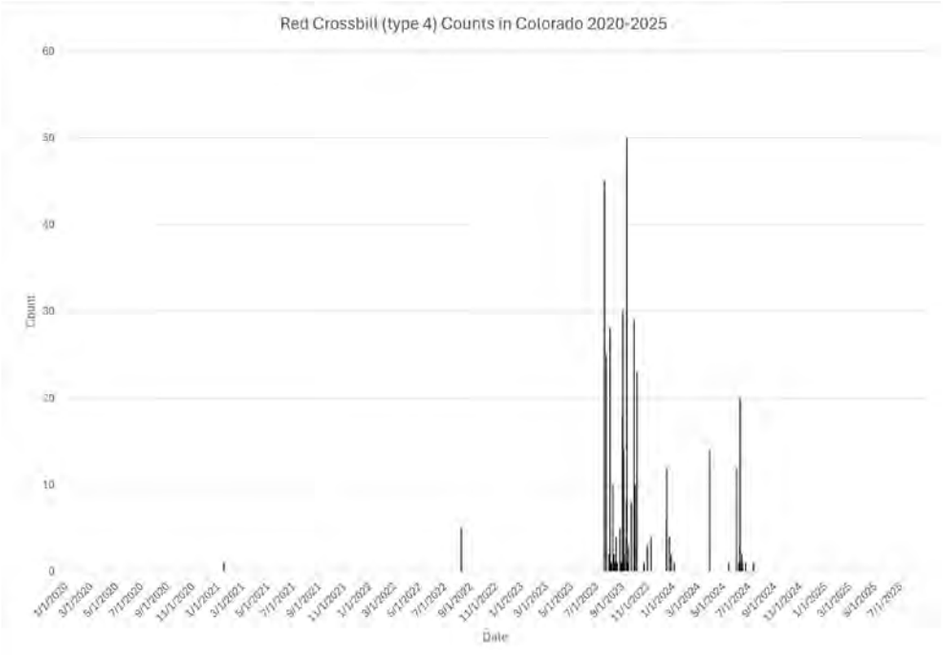

Figure 7: The pattern of reports of Red Crossbill (Douglas Fir or type 4) from Colorado 2020-2025. Note the spike of observations in the fall of 2023, then another blip the following spring (2024). This is a more typical occurrence pattern for nomadic crossbills.

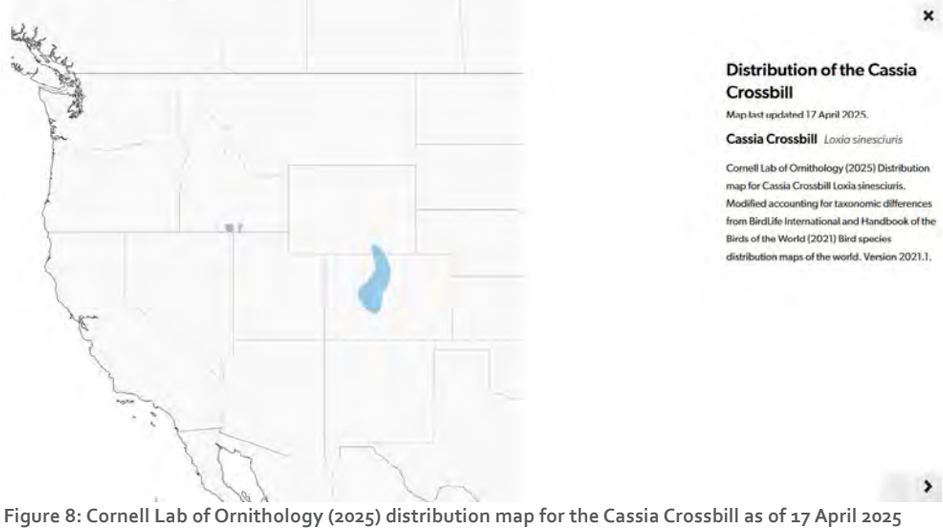

Figure 8: Cornell Lab of Ornithology (2025) distribution map for the Cassia Crossbill as of 17 April 2025 (from Benkman and Porter 2020). Note the large, blue "non-breeding" polygon depicted in Colorado and southern Wyoming.

Sub-alpine Fir forests. Might heat waves and forest fires cause Cassia Crossbills to disperse from their core range, and have they found a suitable niche in Colorado?

The arrival of Cassia Crossbill in Colorado is one of the more perplexing ornithological events in modern times. So many questions are now posed to the ornithological community- How long have they been here? How long will they stay? Are Cassia Crossbills maintaining assortative mating in Colorado? What environmental factors led to this change in known range? Do Cassia Crossbills occur in areas occupied by pine squirrels (*Tamiasciurus* sp.), or are they selecting areas without them? Every report of Cassia Crossbill in Colorado, and beyond, has contributed to our growing understanding of the status, life history, and distribution of this glorious finch. Future observations will illuminate details on population fidelity, identify nest sites, and perhaps provide birders and researchers with an opportunity to study how and if these birds evolve in response to new environmental influences in the southern Rocky Mountains of Colorado.

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Birding by Ear

Colorado Meadowlarks

By Eric DeFonso
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Whatever region of the country you might travel to, one of the first birds you may encounter will likely be a meadowlark. Meadowlarks are so well known and beloved from coast to coast that they are the official state bird in six states, including our neighboring state of Kansas. The Western Meadowlark is indeed one of the most abundant birds here in Colorado (see Fig. 1, a map of the breeding density of WEME), and usually wins the highest number of overall bird detections in the IMBCR field surveys run by Bird Conservancy of the Rockies every spring and summer. Given the ease with which meadowlarks can be detected at those times of year, it's amusing to note that the Western Meadowlark's scientific name is *Sturnella neglecta*, the "neglected little starling."

IMBCR —"Integrated Monitoring of Bird Conservation Regions", a long-running, multiyear survey project similar to the USGS Breeding Bird Survey

As of late 2022, three species of meadowlark are now recognized as occurring within Colorado. Western Meadowlark is nearly ubiquitous. Eastern is rare with the majority of sightings, not surprisingly, from the eastern side of the Continental Divide. The newly-recognized Chihuahuan is very rare, and enigmatic in the local birding community due to its complex origin story and the general remoteness of the places where it has been documented, interestingly on both sides of the Divide and in the north as well as the southern part of the state. Because vocalizations are a very important distinguishing trait among these three species, Colorado birders would do well to learn more about what these distinctions are. Knowing these sounds not only greatly aids identification, but it also enhances our appreciation of these common birds.

In this article, we will first review some of the background of the Colorado meadowlarks to see how ornithologists went from one species to three in the past 120 years. This will help us contextualize the sounds that we will then examine in

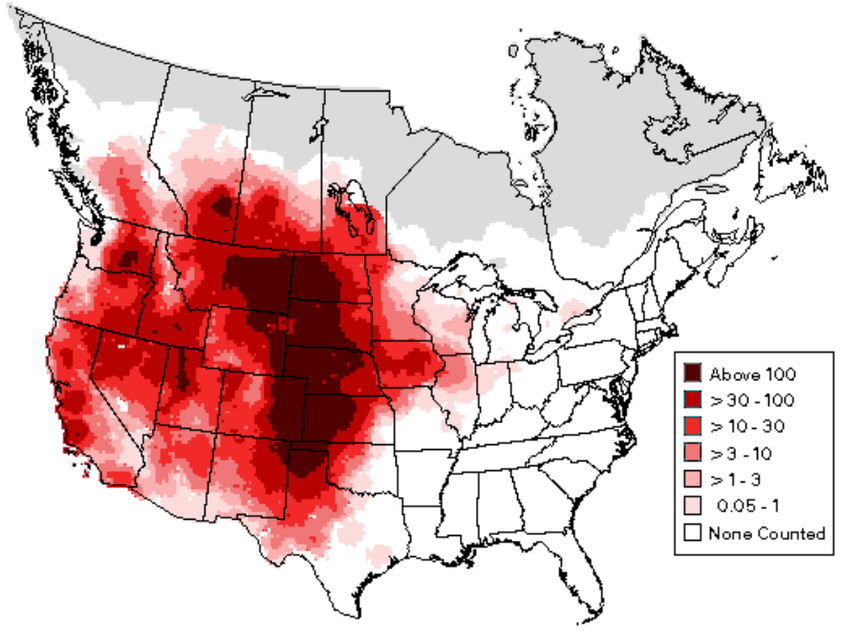

Fig. 1. Data from the Breeding Bird Survey, 1994-2003. From Sauer et. al. 2008.

greater detail, comparing the three species in their typical songs as well as multiple types of call notes. Lastly, we will briefly peek into a couple oddball edge cases where the sounds we detect can be puzzling.

What Are Meadowlarks Anyway?

Meadowlarks belong to the family Icteridae, along with their close relatives the blackbirds, cowbirds, grackles, orioles and Bobolinks. All icterids live in the western hemisphere, and other close relatives of the meadowlarks are found in Central and South America, including some tropical meadowlarks with lots of red and black in them, numerous tropical oriole species, troupials, caciques and the largest of them all, the oropendolas. Orioles and troupials have sweet, melodious songs, while other icterids like grackles, oropendolas, and the famously dissonant Yellow-headed Blackbird, have strange and often striking vocalizations that sometimes accompany quirky courtship displays. In almost all cases though, the birds of Icteridae are known for their distinctive, frequent, and often complex songs and calls. Meadowlarks fit right in with this grouping.

Here in North America, meadowlarks were formally split into two species in the early 1900s, Western (*Sturnella neglecta*) and Eastern (*Sturnella magna*). However, a subspecies of Eastern Meadowlark, known as Lillian's Meadowlark (*Sturnella magna lilianae*), was known to inhabit the Sonoran and Chihuahuan deserts

Useful Definitions for Common Bird Vocalizations:

Songs — generally complex, learned, given primarily by males to establish territory or attract mates.

Calls — generally simple, innate, and given by both sexes and young to communicate other information like alarm, position, food availability.

Songtypes — versions of song common to a species, that are often variations on a theme.

Meadowlark songs are further broken into two categories: the primary or basic "song" and a "complex song." The complex song refers to an emphatic territorial vocalization infrequently given by males after lengthy song bouts or in agitation or in flight. They're so different from the usual basic songtypes that birders often initially mistake them for different species.

of Arizona, reaching into northern New Mexico and perhaps with occasional incursions into southern Colorado.

Beam et. al (2021) published a landmark review along with new research that included molecular and genetic studies as well as a detailed quantitative analysis of meadowlark vocalizations. She demonstrated that Lillian's, together with another subspecies found in western Mexico (*Sturnella magna auropectoralis*) were indeed a separate species, now called the Chihuahuan Meadowlark. At the time of this writing, there are still only a few dozen eBird records of Chihuahuan Meadowlark (*Sturnella lilianae*) in Colorado, but this may reflect difficulty of detection and the dearth of birders in areas where Chihuahuans may be present, rather than absolute scarcity.

Although we focus here on the audible distinctions between these three species, it may help to quickly summarize the most obvious visual differences first. Easterns generally have the most contrasting color patterns of any of the meadowlarks, especially on the crown and face. Chihuahuan patterns more closely resemble those of Western, appearing more pallid in comparison. Eastern's malar region should be pure white with no yellow from the chin extending into it, and this is true for Chihuahuan as well. Westerns, on the other hand, will have yellow extending into this area.

The clearest way to distinguish the three taxa visually is to note subtle differences in the amount of white in the tails of meadowlarks in flight, which is well-depicted in most modern field guides. Westerns average the least amount of white, with only around 2-2.5 white rectrices on each side; Easterns average around 3 per side,

Western Meadowlark, Mesa County, CO. 1 Apr 2023. Photo © Linda Chittum

Eastern Meadowlark, Boulder County, CO. 28 Jun 2020. Photo © Chuck Hundertmark

Chihuahuan Meadowlark, Curly Shoe Ranch Rd, AZ. 27 Mar 2020. Photo © Ginger Spinelli

and Chihuahuans should show nearly 4. Retreating birds will almost always show fanned tails in flight, offering a great opportunity to get a crucial visual indication of species. Successful meadowlark identification often incorporates careful sound detection along with observation of subtle plumage details like these.

Song Comparisons

See Fig. 2 for a comparison of typical songtypes between the three meadowlark species. Descriptively, Western song is generally loud and liquid, often ending with a warbly flourish but sometimes with a short exclamatory whistle. Note in the

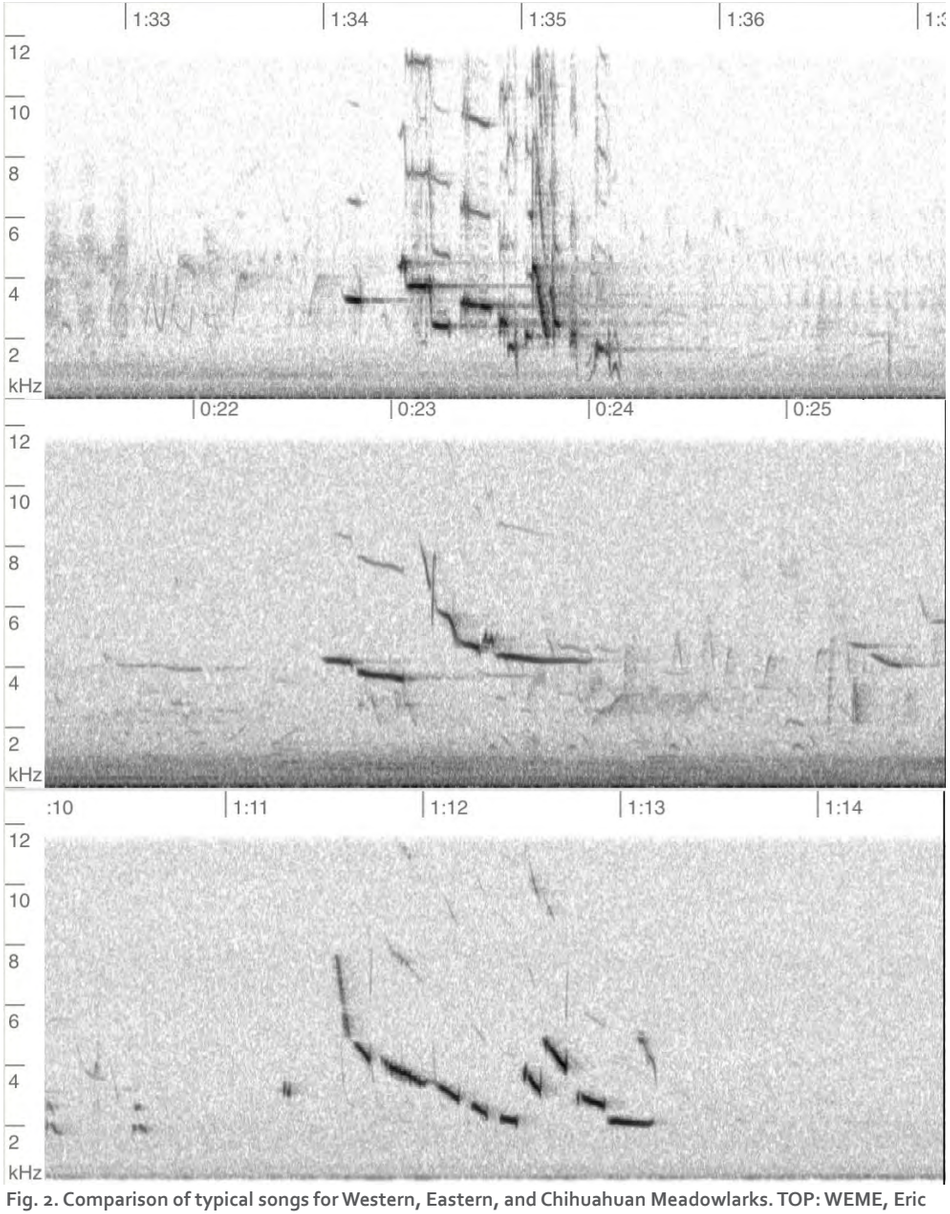

Fig. 2. Comparison of typical songs for Western, Eastern, and Chihuahuan Meadowlarks. TOP: WEME, Eric DeFonso, Larimer County, CO, 29 May 2023. https://macaulaylibrary.org/asset/631450560 MIDDLE: EAME, Eric DeFonso, Riley County, KS, 12 May 2017. https://macaulaylibrary.org/asset/137552921 BOTTOM: CHME, Eric DeFonso, Chaves County, NM, 12 May 2025.) https://macaulaylibrary.org/asset/640877814

Who Sings? Among meadowlarks, only males are known to sing the songtypes described here. However, females regularly participate in a type of "duet" with singing males by delivering a harsh rattle during their partner male's song. (Red-winged Blackbirds, close relatives of the meadowlarks, also perform this kind of duet.) Listen for this during the next breeding season, as this is known to be a reliable way of locating breeding pairs.

spectrogram (top) the numerous notes at the end of the phrase, jumping around in pitch. To my ears, a Western song always has boldness and complexity, and only when the bird is very distant does the song not seem provocative. A dawn chorus on the eastern Colorado plains is often a medley of meadowlark songtypes, all introducing the sunrise. Also, if you've ever been within a dozen or so yards of a singing Western Meadowlark that's facing you, you know that even a single bird can be almost deafening. It may be the loudest bird song in North America. That itself can be a useful field mark.

In contrast, Eastern song (middle) lacks the liquid warble of the Western, often ending on a sustained high note. As a result, it tends to have a more leisurely feel to it, a lilt especially given the overall high pitch of the notes and the fewer notes offered compared to the Western. That high pitch is a notable trait for Eastern, especially when comparing it to Chihuahuan Meadowlark.

Chihuahuan song (bottom) is reminiscent of the Eastern's clean, lyrical style, but averages lower-pitched and virtually always descends 2-3 times in an overall phrase in the manner seen in the bottom spectrogram. The highest average frequency of any Chihuahuan songtype is never as high as a typical Eastern's, and as the Fig. 2 spectrogram shows, many of the notes are below 4 kiloHertz (kHz), while the Eastern song notes are mostly well above that. In addition, although each meadowlark singer learns a number of songtypes, the variation between those songtypes tends to be less for Chihuahuan than for Eastern. That is, that pair of descending sequences in the Chihuahuan song is itself a strong indicator of the species. Easterns never give a phrase quite like that.

Although both Eastern and Western deliver Complex Song (also called Flight Song), only the Western seems to deliver it with regularity. An example is shown in Fig. 3. It's quite different from the primary song, and a birder may at first think it's a different species altogether. The song is often preceded by Teer notes (discussed below) and is reminiscent of a Bobolink for its ultra-rapid jumble of sweet and polyphonic notes. It is not known or yet documented if Chihuahuan has a Complex Song.

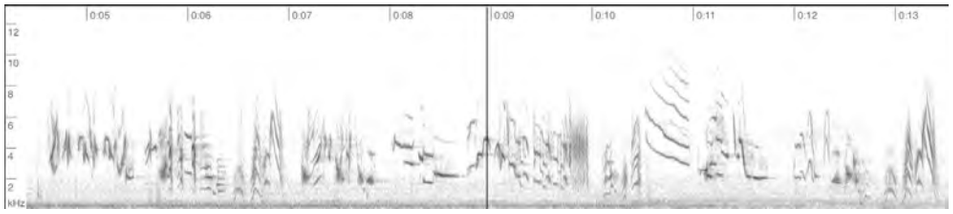

Fig. 3. Complex or Flight song of Western Meadowlark. Nathan Pieplow, Modoc County, CA, 16 May 2023. https://macaulaylibrary.org/asset/581198781

Call Comparisons

Unlike songs, calls in songbirds seem to be innate and therefore cannot be faked or improperly learned. This makes them very useful as "fingerprints" to assist in identification, when songs could simply be imitations of other species learned in adolescence. Of course, call notes are best used as a supplement to other field marks, both visual and auditory. But calls can provide a strong indication of species when other marks are ambiguous or incomplete.

Common calls among meadowlarks include a Rattle, a Teer or Veet, and a Chup or a Dzert. Let's take a moment to consider each of these separately for the insight they provide.

Polyphonic Notes — song or call notes given by a bird using both sides of its syrinx independently, resulting in a single note that has two separate frequencies. Such notes are often perceived as metallic, electric, somewhat nasal or squeaky.

Chup vs Dzert

A comparison of the most common and innate call notes is shown in Fig. 4. It's called the Chup for the Western (top), and Dzert for both the Eastern (middle) and Chihuahuan (bottom). As such, this single call can serve as a very useful diagnostic vocalization, even in the cases where a song might be an imitation of a different meadowlark, since a given bird can only give its specific note and no other. The Dzert always sounds buzzier and more electric than the Western's blackbird-like Chup, so right away it serves as an immediate indicator for Coloradans that an unusual meadowlark is present. By itself it cannot indicate which species, because as the spectrogram shows, the Eastern and Chihuahuan Dzerts are indeed quite similar. But it can at least rule out a pure Western immediately, even before hearing a song or seeing tail feathers. Alternately, any Chup call heard from a meadowlark, either singly or in a series (see below for the Chuckle) immediately identifies the bird as Western, since neither Eastern nor Chihuahuan offers that clearer, staccato note.

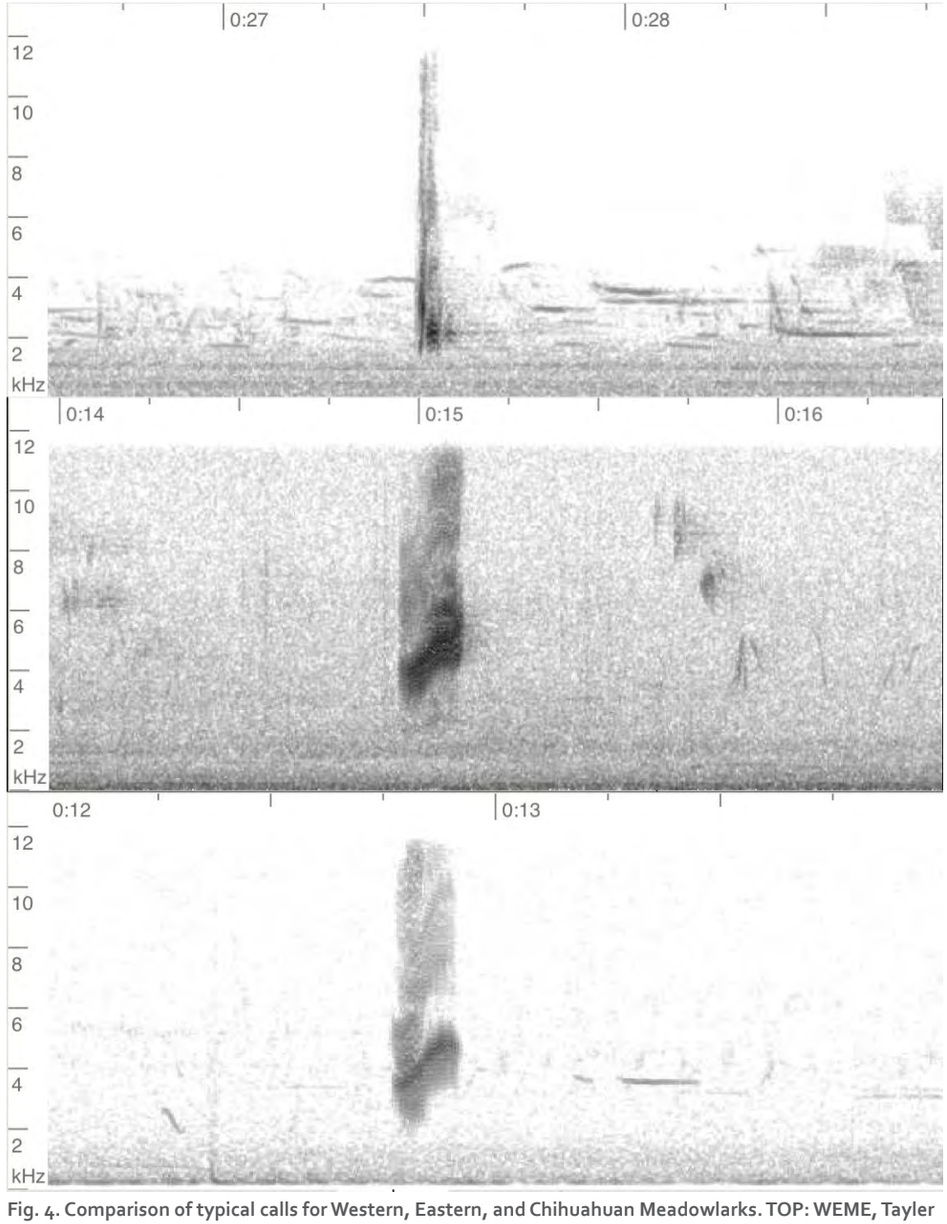

Fig. 4. Comparison of typical calls for Western, Eastern, and Chihuahuan Meadowlarks. TOP: WEME, Tayler Brooks, Logan County, CO, 3 Jun 2018. https://macaulaylibrary.org/asset/115235981 MIDDLE: EAME, Garrett MacDonald, Tippecanoe County, IN, 16 Jul 2017. https://macaulaylibrary.org/asset/63593891 BOTTOM: CHME, Eric DeFonso, Bailey County, TX, 6 May 2024.) https://macaulaylibrary.org/asset/618565885

Teer vs Veet

These are call notes often given interspersed amid a song bout by a singing male, but could be given by females as well. Unlike the previous call type, these notes are longer duration, and in the case of the Western, it often precedes the delivery of the Complex Song. Fig. 5 shows the clear Teer note from the Western (top) and the buzzy Veet from the Eastern (bottom). An analogous note from Chihuahuan has not yet been documented, although it's possible that if it does exist, it would be more similar to the Eastern's call.

Rattle vs Chuckle

The Rattle is a call common to all three meadowlark species, but each species' rattle sounds slightly different, and may be given in somewhat different ways by the sexes depending on context. See Fig. 6 for a comparison of meadowlark Rattle calls between Eastern and Chihuahuan. (The Western's related calls will be discussed separately.) For all species, the Rattle is often given by the female apparently as part

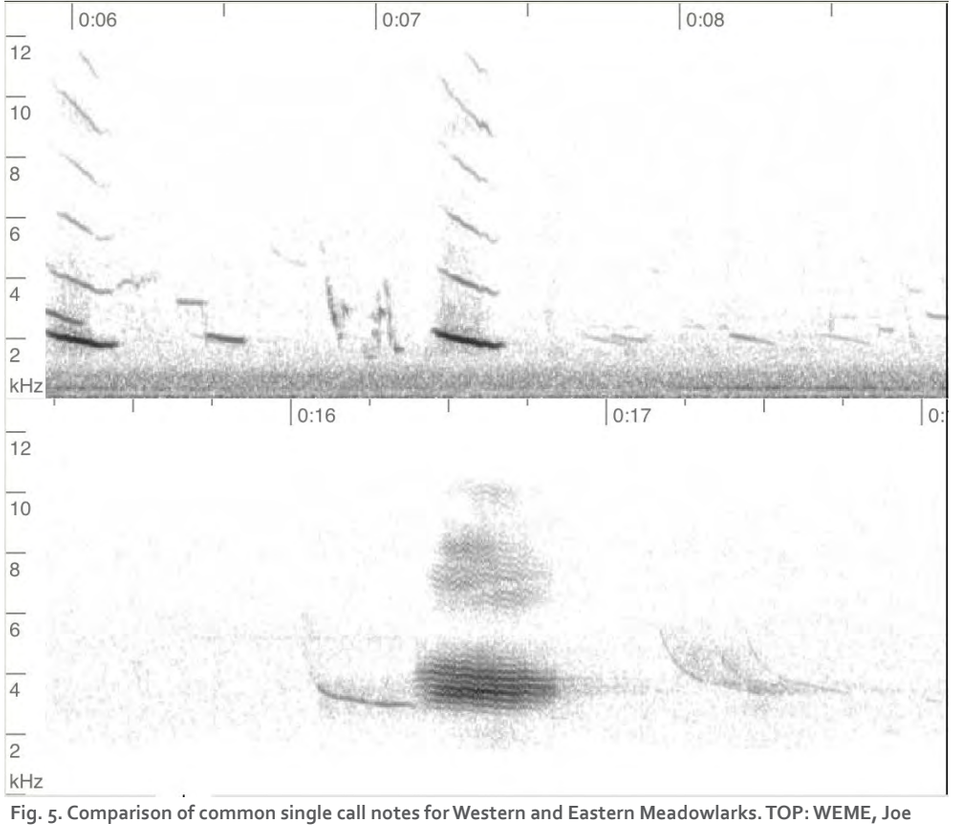

Fig. 5. Comparison of common single call notes for Western and Eastern Meadowlarks. TOP: WEME, Joe Tuttle, Park County, CO, 27 Apr 2025. https://macaulaylibrary.org/asset/634530844 BOTTOM: Daniel Jauvin, Quebec, CA. 19 Jun 2023. https://macaulaylibrary.org/asset/587452371

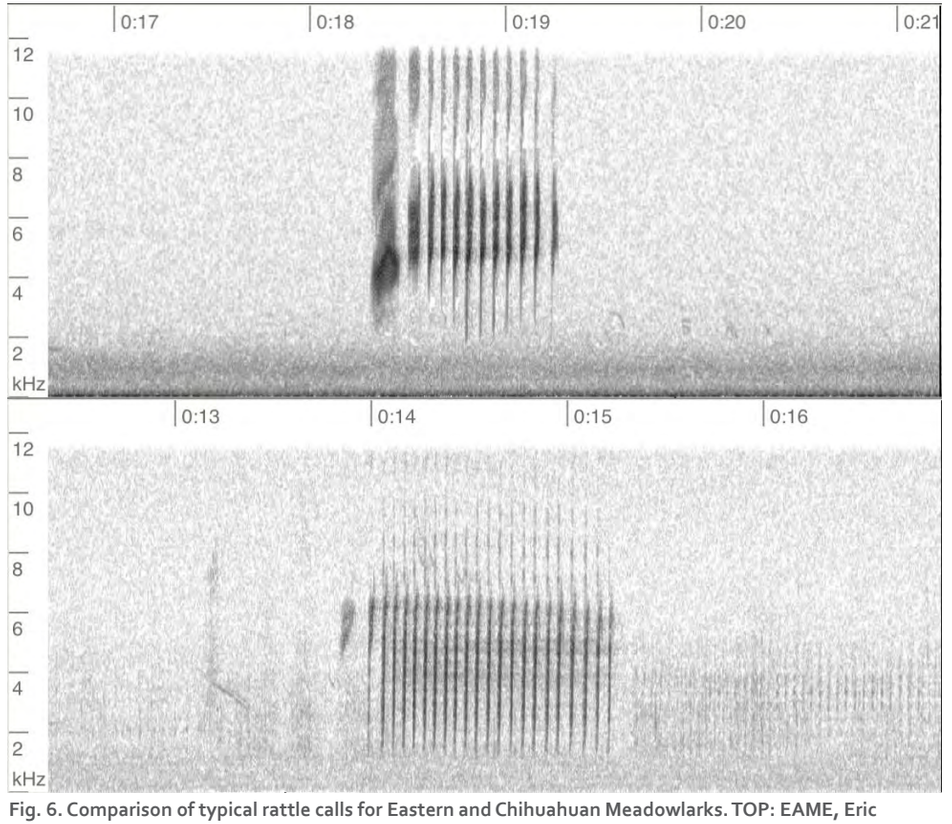

Fig. 6. Comparison of typical rattle calls for Eastern and Chihuahuan Meadowlarks. TOP: EAME, Eric DeFonso, Boulder County, CO, 12 Jun 2013. https://macaulaylibrary.org/asset/206894901 BOTTOM: Paul Marvin, Santa Cruz County, AZ, 11 Jan 2018. https://macaulaylibrary.org/asset/109244751

of a duet with the song of their male partner, often in the middle of or immediately after his song delivery. As such, a fair question arises as to whether this might actually be an example of female song! To complicate matters though, this same call is also sometimes given by Eastern and Chihuahuan males as a threat response. This situation illustrates the gray area in our understanding of the differences between songs and calls, since especially in the case of the icterids, many of the sounds they make seem to serve multiple functions, depending on context.

Do Western males have a threat response type call? They do, and it is called the Roll or Chuckle, and is shown in Fig. 7 in comparison to its own version of Rattle. The Chuckle is a sequence of rapid Chup notes that appears to serve the same function among males as the Eastern Rattle, but is less sputtering and more percussive, making it a quick and easy species determinant in the field. Neither Eastern nor Chihuahuan meadowlarks give this Chuckle. In all the aforementioned call note examples, the Westerns are distinctly separate from the Eastern and Chihuahuans, befitting of the previously accepted notion that the latter two forms were conspecific and obviously separate from Western.

Cautionary Notes

In late June 2023 I was in the San Luis Valley of Colorado conducting IMBCR bird surveys in the mornings. One day in Conejos County after surveying, I drove through the vast stretches of agricultural land looking and listening for meadowlarks in the hopes I might encounter a Chihuahuan. It seemed like a longshot since the northern extent of their regular range was still at least 100 miles south of there, but it was still relatively close and in such an underbirded region, it was worth a try. Imagine my shock and delight when, with the windows rolled down, I heard the distant strains of a Chihuahuan Meadowlark song! I angled my way down county roads to finally locate the source of the song, coming from private property and apparently far behind a fence and not all that close to the road.

I obtained recordings, and observed that the bird sang only seemingly one songtype of Chihuahuan-style song (see Fig. 8), never reverting to a Western song like I was hearing in many other places in the Valley. But I needed to get a look at the bird, or hear a call note, and unfortunately the bird was slow to cooperate.

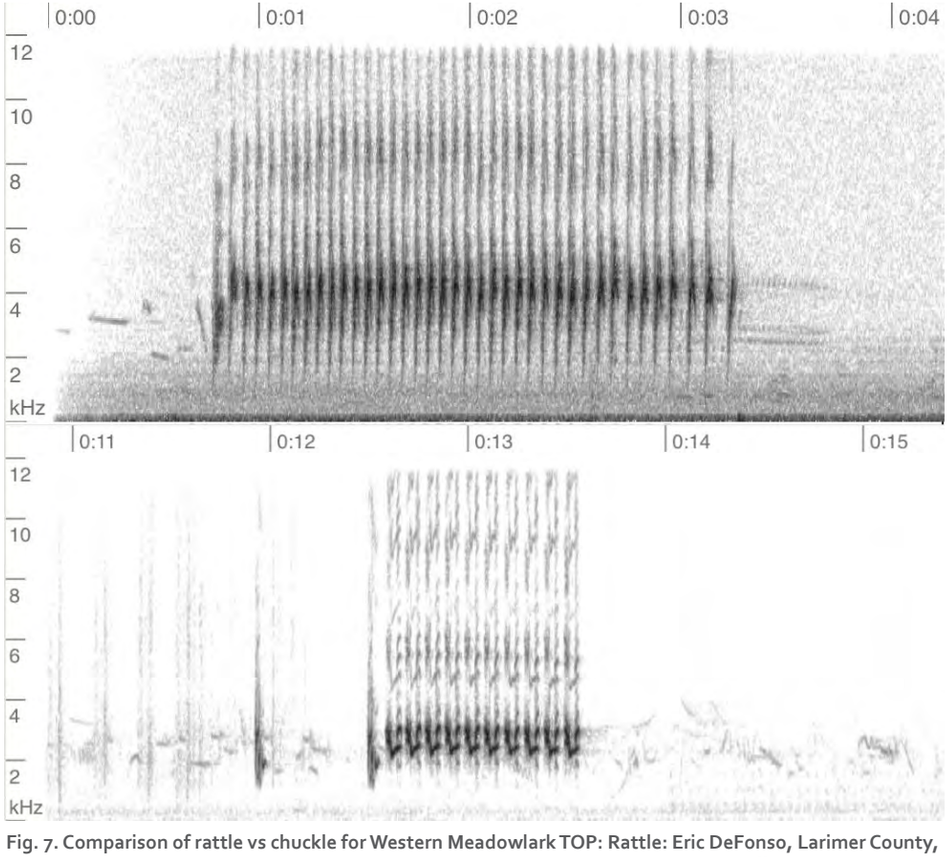

Fig. 7. Comparison of rattle vs chuckle for Western Meadowlark TOP: Rattle: Eric DeFonso, Larimer County, CO, 28 Apr 2023. https://macaulaylibrary.org/asset/631521365 BOTTOM: Chuckle, Geoffrey Keller, Modoc County, CA, 12 May 2002.) https://macaulaylibrary.org/asset/120225

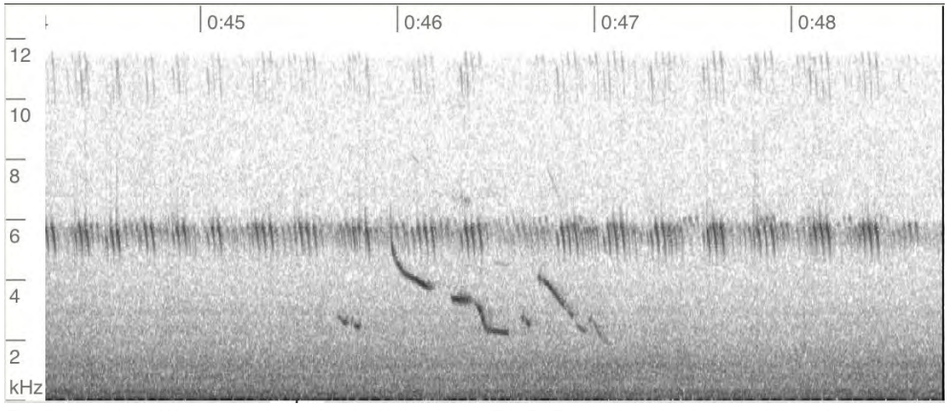

Fig. 8. Song from Western in the style of a Chihuahuan. Eric DeFonso, Conejos County, CO, 27 Jun 2023. https://macaulaylibrary.org/asset/588861541

My eBird checklist describing this encounter (https://ebird.org/checklist/S142884312) goes on to show the eventual photos and video I obtained, and a description of the calls I heard. I was genuinely surprised to hear Western-style Chup notes coming from the same bird, visually confirmed, that was singing the Chihuahuan-style song. Views of the bird also showed largely Western traits, and recently I shared the sighting with Johanna Beam who agreed that this bird is almost certainly a Western Meadowlark, despite singing a perfect Chihuahuan song and only that style.

Is hybridization possible, and if so what might such an offspring sound like? Christian Nunes documented a fascinating case here in Colorado in 2021 and 2023, where his eBird checklist (https://ebird.org/checklist/S140784744) shares intriguing sound files and descriptions of his encounters with an elusive bird giving both Western and Chihuahuan-style vocalizations, both song and calls. Beam (2022) pointed out that earlier studies on hybrid pairings between Western and Eastern showed very limited viability and fertility for offspring. She continued by pointing out that these species are more closely related to each other than they are to Chihuahuan, suggesting that hybridization between Western and Chihuahuan would likely have an even smaller chance at survival.

What to make of these cases? These are of course only two instances out of many other far more clearcut examples of Chihuahuan occurrence in Colorado, but they serve to illustrate the usefulness of birding by ear to locate these intriguing interlopers alongside the caution that must be exercised to properly apply our understanding of how songbirds learn their songs, and more specifically how meadowlark species interact in their contact or overlap zones. It's clear that in such areas meadowlarks could learn the "wrong" songs even with both parents being conspecific, and that perhaps the two species can hybridize albeit only rarely with any success. The mystery continues.

A Confluence Of Meadowlarks

Although the Western is by far the most numerous and likely of the three species, Colorado is fortunate that Eastern and Chihuahuan Meadowlarks can show up in the state at almost any time and can be readily detected if they are vocalizing. If they do show up, Easterns are most likely in the lower elevations (below 5500') in the eastern third in areas with taller grass, while Chihuahuans will likely prefer areas similar to those preferred by Western, meaning shorter to medium-height grasslands or very open shrublands.

With this new addition of Chihuahuan to our list of possible meadowlarks, Coloradans can develop an even greater appreciation for all our species including the Western, whose far-reaching songs and calls provide the auditory backdrop for so many locales around the state. Almost every sound they make can give us a hint as to their identities, which is an exciting prospect for those who Bird By Ear.

Western Meadowlark, Stearns Lake, Boulder County, CO. 1 May 2023. Photo © Eric DeFonso

Chihuahuan Meadowlark, Muleshoe NWR, TX. 6 May 2024. Photo © Eric DeFonso

Web Resources

https://academy.allaboutbirds.org/peterson-field-guide-to-bird-sounds/

https://macaulaylibrary.org/

https://birdsoftheworld.org/

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Evidence of a Second Clutch for American Kestrels in Colorado

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In 2023, thanks to the generous support of a grant awarded by Colorado Field Ornithologists, and in collaboration with the City of Arvada, I was able to build and install three American Kestrel (*Falco sparverius*) nest boxes on City open space. These three nest boxes, in addition to a nest box that was installed in my backyard in 2013, make up my small Arvada Kestrel Project nest box monitoring program.

The Arvada Kestrel Project collaborates each season with Jennifer Redmond, affiliated with the Colorado Avian Research and Rehabilitation Institute, to band the adults and nestlings from each successful box. To date we have banded five adults and 28 nestlings dating back to 2022 when we banded the adult female at my backyard nest box. This female has used my backyard nest box every year since at least 2022. The nesting phenology and nest fidelity data gathered from the banding of this particular female, helped Jennifer and me document two very unusual occurrences during the 2024 nesting season. Our observations were recently published in the September 2025 issue of the Journal of Raptor Research.

Jennifer Redmond from Colorado Avian Research and Rehabilitation Institute banded an adult male American Kestrel from a nest box on City of Arvada open space. Photo credit: Kirstin Chapman.

Kirstin Chapman from Arvada Kestrel Project holds the recently banded adult female from a nest box on City of Arvada open space. Photo credit: Jennifer Redmond.

For the first time in Colorado, we were able to document a second clutch laid by a confirmed mated pair of American Kestrels following a successful first brood. In North America, this occurrence in wild American Kestrels has only been reported twice in the literature, one in Missouri and the other in Idaho (Toland 1985, Steenhof and Peterson 1997). This Colorado case marks the third reported occurrence. We also report the first documented case of an offspring fledgling kestrel taking on a nest-helper role, by assisting the adults with incubation and egg-rolling duties over a 48-hour period.

These discoveries were made possible because the nest box is situated within 10m of my house and the kestrels' most-used perches are within view of multiple windows, which allowed me to study and photograph their behaviors. The nest box is equipped with an infrared interior nest camera that streams 24/7 via an accompanying app to a local iPad. This nest camera allows the observation of nesting behaviors.

In 2024, during her third confirmed season at this nest box, the banded adult female initiated nesting a full nine days earlier than the previous two years. She laid her first egg of a five-egg clutch on 29 March. All five young hatched on 4 May, and they all successfully fledged on 2-3 June. On 6 June, we witnessed the adult pair mating atop backyard trees, while the fledglings were perched nearby, sometimes even in the same tree, begging for food. This was a behavior we had not witnessed in previous years. Also unusual, during the first two weeks post-fledge, the adult male appeared to be the only one provisioning food for the fledglings. We never observed the female supplying food to the young. On 21 June, we observed a food exchange between the adults and watched the female consume her meal in front of a begging male fledgling. All of these behaviors appeared very much like mating behavior, which would be unusual during the post-fledging dependency period, so we turned the camera back on (it had been turned off after the first brood fledged) and discovered the female sitting on an egg. She laid a second egg on 21 June and her final egg on 23 June. We were able to confirm that this clutch was from the same mated pair because of the band on the female and matching plumage details in photos of the male taken throughout the season.

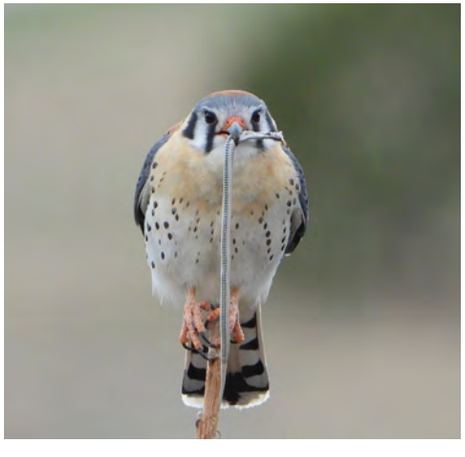
The female laid the first egg of the second clutch just 16 days after her first brood of five nestlings fledged. The adult male continued provisioning food for the female and their fledglings while she resumed incubation duties. At 16 days post-fledge, the fledglings had begun venturing farther from their nest area and were seen perching and hunting together in nearby open space. However, once incubation of the second clutch began, the fledglings seemed to regress into a post-fledging dependency state. They began spending more time near the nest box begging for food, and were frequently seen on or inside the box. Remarkably, one of the male fledglings was observed helping with incubation duties after several unsuccessful

The adult kestrels with their five nestlings from the first brood. Photo credit: Nest cam screen capture taken by Kirstin Chapman (backyard nest box in Arvada).

Left: A male American Kestrel nestling from a nest box on City of Arvada open space. Photo credit: Kirstin Chapman.

Bottom left: This photo of the second clutch was taken 14 August 2024 on the afternoon the adults finally abandoned the nest. Notice how many feathers the adults had molted while incubating. Photo credit: Nest cam screen capture taken by Kirstin Chapman (backyard nest box in Arvada).

Bottom right: The adult male kestrel with a snake he's caught for his five nestlings. Photo credit: Kirstin Chapman (backyard nest box in Arvada).



attempts to obtain food in the box. On 29-30 June, he exchanged incubation duties with his parents, rolled and moved the eggs and shimmied down on top of them. The adults tolerated his presence in the box, often leaving him alone with the eggs for extended periods of time. We could find no documentation in the literature of fledgling helping behavior in American Kestrels and can only speculate that the fledgling's behavior in the nest box was purely exploratory and did not constitute true cooperative breeding.

Eventually the fledglings dispersed and were not seen again after the first week of July.

The adults continued incubation, with both adults sharing incubation duties. However, the eggs were frequently left unattended, sometimes for several hours a day. Twice the eggs were left unattended all night, which never happened in past seasons. The adults incubated the eggs well past the expected hatch date, finally abandoning the nest on August 14th. Although the second clutch failed to hatch, this occurrence is significant as the first reported case in Colorado of a confirmed mated pair of American Kestrels laying a second clutch after a successful first brood.

As in Colorado, the other two cases of double-brooded kestrels in the literature occurred in early nesters who had enough time in their annual breeding cycle to raise a second brood (Toland 1985, Steenhof and Peterson 1997). Climate change has contributed to milder winter temperatures and earlier springs, leading to a shift in nesting phenology (Heath et al. 2012). As American Kestrels initiate breeding earlier, there may be a corresponding increase in second nesting attempts. Based on our observations, our recommendation is to continue nest checks at successful boxes at least a month past the fledge date of the first clutch, especially for early nesters. This extra step could lead to more documentation of the occurrence of second clutches.

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Field Notes

Blue Jay Freed from Cooper's Hawk When Mobbed by Other Flock Members

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Editor's Note: Colorado Birds encourages its members to submit firsthand accounts of interesting avian behavior, notable sightings or other intriguing encounters with birds. Send articles and photos to editor@cobirds.org.

Mobbing behavior, which involves an attack of one or more individuals against a threat, has been observed against many species of vertebrate predators (e.g., Altmann I956; Owings and Coss 1977). This behavior functions to deter predation, alert others to the presence of a potential predator, defend nests or young, and convey enemy recognition to others (e.g., Curio *et al*., 1976). In particular, Blue Jays (*Cyanocitta cristata*) are not passive towards real or perceived predators and will aggressively mob raptors and other taxa of potential predators.

Accipiters, especially Cooper's Hawks (*Accipiter cooperii*) are among the variety of aerial predator taxa known to prey on Blue Jays (Bielefeldt et al. 1998, Smith et al. 2013). Accordingly, Cooper's Hawks have been observed to be the subject of Blue Jay mobbing attacks (Ehrlich and Drickamer 1993, Heintzelman 2004, McWhirter 2000, Roth and Lima 2003, 2006).

Here, I describe a mobbing attack by Blue Jays that served to safely free a Blue Jay captured by a Cooper's Hawk. The encounter was witnessed on 23 June 2025 at 15:35 h on a warm, sunny day (29°C) in an urban area on the west edge of Fort Collins. This observation was prompted by a raucous commotion by Blue Jays nearby. On the ground at the convergence of the street pavement and the concrete gutter, a Cooper's Hawk had captured and was holding down a Blue Jay. A group of three other Blue Jays was mobbing the Cooper's Hawk with close-in physical attacks, thereby preventing the Cooper's Hawk from attending to its quite-alive prey. Ultimately, the Cooper's Hawk was sufficiently harassed to release its grip on the Blue Jay and attempted to escape the mobbing, but with difficulty as the attack continued as the hawk fled. During this time, the Blue Jay captured by the Cooper's Hawk flew away, apparently unharmed.

While Blue Jays are well-known for mobbing attacks on potential predators, this is the first instance of which I am aware that a mobbing attack freed a captured Blue Jay seemingly unharmed from a Cooper's Hawk.

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DFO Dinosaur Ridge Hawk Watch

2025 Spring Migration Report

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Introduction

The 2025 spring migration season at Denver Field Ornithologists (DFO) Dinosaur Ridge Hawk Watch marked a milestone of **3144 raptors counted, the most since 2002**, with a season running from March 1 to May 10.

This year marked the fourth consecutive year that DFO employed full-time seasonal Hawk Counters. Emma Riley served as Lead Counter and Project Lead, while Audrey Anderson returned for her second season as a full-time Counter. Having two professional counters allows us to continue to follow protocol of at least one Counter and one Observer per count day and count with full coverage during peak migration periods. Our dedicated Dinosaur Ridge Hawk Watch Counters enhanced count coverage by overlapping their shifts on many days of the count.

An additional goal of Dinosaur Ridge Hawk Watch is to provide meaningful opportunities for aspiring professionals to gain real-world experience in the field of biology. Two college-level part-time Observers supported our weekend coverage: Laura Campbell from Colorado State University and Laura Farnsworth from University of Colorado in Denver. High School Intern Haley Caron joined us from Bear Creek High School to aid as an observer.

Scheduled volunteers also contributed significant amounts of their time to assist in raptor observations over the season. Their commitment and passion were vital to the success of the monitoring effort to help observe and provide consistency to the count.

Total observation time reached **495 hours in 2025**. This was the fourth highest observational recorded time since the count at Dinosaur Ridge began, and exceeded both the 2023 and 2024 hourly count times by more than 17 hours.

Daily site management responsibilities—including staff management, volunteer scheduling, group event coordination, organizing educational outreach, leading scheduled Dinosaur Ridge Hawk Watch and other educational field trips, social media, communications, etc. — were carried out by volunteers from the Dinosaur Ridge Hawk Watch Committee.

Count Summary

The table below shows total raptor counts for the 2025 season alongside comparative data from the last three seasons (2022 – 2024) where both professional counters and volunteer observers contributed to the count.

SPECIES	2025	2024	2023	2022
AMERICAN KESTREL	952	501	386	337
RED-TAILED HAWK	524	463	504	768
TURKEY VULTURE	381	394	445	513
COOPER'S HAWK	309	231	284	213
BROAD-WINGED HAWK	274	140	170	54
SHARP-SHINNED HAWK	358	115	107	96
OSPREY	86	54	65	59
BALD EAGLE	47	49	58	61
SWAINSON'S HAWK	46	48	77	54
NORTHERN HARRIER	61	27	32	39
GOLDEN EAGLE	24	25	41	40
FERRUGINOUS HAWK	29	23	65	63
MERLIN	17	21	24	17
PEREGRINE FALCON	15	16	20	21
AMERICAN GOSHAWK	2	9	9	9
PRAIRIE FALCON	3	6	5	11
ROUGH-LEGGED HAWK	2	0	0	3
UNIDENTIFIED RAPTOR	14	28	29	48
TOTAL	**3144**	**2,150**	**2,321**	**2,406**

Observations

The graph below displays the distribution of the most frequently observed raptor species during the 2025 spring migration.

The American Kestrel was the most observed species this season at 952 individuals — **for the fourth time in Dinosaur Ridge Hawk Watch history**. Our Counters and Observers witnessed significant numbers of American Kestrels flying past the ridge for consecutive days in late April 2025, with a whopping one-day peak totaling 177 American Kestrels.

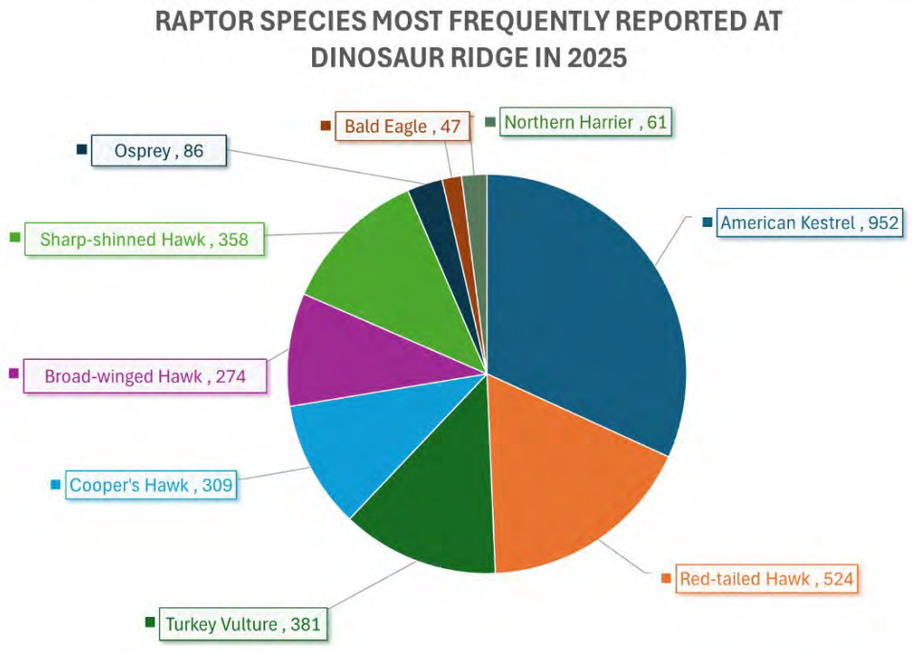
(For reference, the all-time high American Kestrel count at Dinosaur Ridge Hawk Watch occurred in 1997 with 1298 American Kestrels.)

Other top species included Red-tailed Hawk, Turkey Vulture, and Cooper's Hawk similar to years' past. Species observed in lower numbers and in order of sightings (not shown in the chart) include: Swainson's Hawk, Golden Eagle, Ferruginous Hawk, Merlin, Peregrine Falcon, Northern Goshawk, and Prairie Falcon.

This year's count also included the observation of two Rough-legged Hawks, bringing the Dinosaur Ridge Hawk Watch **total recorded raptor species number to seventeen** this season.

Seasonal Count Highlights

- **Red-tailed Hawk** numbers increased from the 2024 low of 463 to a 2025 count total of **524**. This number still falls below the historical average since 1990 of 570. (no count data exists in 2007, 2003, 1999).
- **Broad-winged Hawk** numbers increased yet again to **274**, **making 2025 the highest count ever for Broad-winged Hawks at Dinosaur Ridge**. Only in 1997 did Broad-winged Hawk numbers come close, with 207 individuals recorded.
- **Osprey** observations made a marked increased in 2025 to a total of 86 individuals. 2025 becomes the **third highest count of this species at Dinosaur Ridge.**
- **Ferruginous Hawk** counts increased only slightly to 29 individuals and remain below the historical average of **35**.
- **American Kestrel** numbers continue to rise, with 2025 being the **third highest season in over two decades**.
- The **Golden Eagle to Bald Eagle ratio** stayed consistent at **1:2**, down from **7:10** in previous seasons.
- **Over 11,000 raptors** have been observed at Dinosaur Ridge Hawk Watch **since 2021.**



Visitors

Hawk Watch staff and volunteers interacted with over **1,300 visitors** in the 2025 season, including local residents, educators, fellow hawk watchers, and international guests.

Dinosaur Ridge Hawk Watch continues to be an eBird hotspot, with an all-time count of 132 species recorded and over 945 checklists from more than 300 eBirders. In addition to all the majestic raptors seen flying by this year, the observation of over 100 Gray-crowned Rosy Finches was a very exciting event for our hawk watch team.

Education and Outreach

Field Trips

This season, Dinosaur Ridge Hawk Watch led 3 successful field trips to the observation platform. Dinosaur Ridge Hawk Watch partnered with Denver Audubon to lead two exciting youth field trips to Dinosaur Ridge, entitled Hikes for Homeschoolers. A total of 22 children (ages 7-12) and their guardians engaged with our team to learn how to identify raptors, and use binoculars to observe birds in flight. Our staff and volunteers had a great time sharing their knowledge and enthusiasm with these new birders.

Dinosaur Ridge Hawk Watch also partnered with the Feminist Bird Club for an adult education field trip to the ridge. Energetic participants learned about the research goals and conservation importance of the count as well as to learn new skills to identify raptors on the wing.

While we had two additional DFO sponsored field trips planned, unfortunately the weather prevented them from taking place. We hope to schedule similar field trips next season to offer more hands-on experiences in raptor watching and identification.

Youth Education and Outreach

For the second year, Dinosaur Ridge Hawk Watch coordinated and partnered with Nature's Educators to present a raptor education program (focused on Rocky Mountain species) to three local elementary schools in Jefferson County: Bear Creek, Welchester, and Westgate Elementary. K–5 students had the exciting opportunity to meet raptor ambassadors and learn about their vital roles in the ecosystem, as well as the importance of wildlife and habitat conservation.

Community Engagement

Even before the official season began, the Hawk Watch Committee had the opportunity to interact with Girl Scouts in fall 2024 to help them learn about raptors and birding at the annual Girl Scout Days at Dinosaur Ridge.

Finally, beyond their work on the ridge, our Counters stepped into outreach roles this year, collaborating with partner organizations to inform and inspire others to learn about raptors and the importance of conservation efforts. Audrey Anderson gave a presentation about the importance of community science projects and hawk migration monitoring during Evergreen Audubon's April meeting. Emma Riley was invited to be a guest on Denver Audubon's The Curious Bird podcast where she discussed her relationship with raptors and conservation efforts.

Raptor Population Index (RPI) Site Data

Dinosaur Ridge Hawk Watch is one of only 80 sites that are analyzed for the **Raptor Population Index (RPI)**, a collaborative initiative that monitors and shares trends in migratory raptor populations across North America.

Project Direction

Dinosaur Ridge Hawk Watch continues to make vital contributions as a part of the RPI (Raptor Population Index) network of North American raptor migration monitoring sites. It remains the only such site in Colorado and its inclusion as a data gathering site among only 80 participants is a testament to the consistency and value of the raptor data collected.

Partner and Donor Recognition

A sincere thanks goes out to all our partners whose collaboration, generous support of time and resources, and commitment have been essential to the success of Dinosaur Ridge Hawk Watch this year. Our partners include: Aiken Audubon, Colorado Field Ornithologists, Denver Audubon, Evergreen Audubon, Hawk Migration Association (HMA), Jefferson County Open Space, Jefferson County Open Space Foundation, and Nature's Educators.

We are also deeply grateful to Aiken Audubon, Colorado Field Ornithologists, Denver Audubon, Jefferson County Open Space Foundation, and the Three Birds Foundation for their generous grant and financial support and commitment to our ongoing mission.

Finally, a heartfelt thank you to all our individual donors. Your generosity played a crucial role in helping us reach our 2025 goals and we could not have had such a successful season without you. – Natalie Uschner-Arroyo, Dinosaur Ridge Hawk Watch Chair

Kinglet

Dry Creek Trail on the
Last day of glorious fall
A Wall of yellow thicket on the left
And Chic..chic..chic.
"Ohh, actual birding"I smile.
"Pissh pissh" I offer, and
Out pops a tiny round bird,
Now quiet...curious, quick,
Watching me, turning to go.
Bushtit, likely. No, I see the eye ring
Blue-gray gnatcatcher! No,
I see the single wing bar!
Ruby-crowned Kinglet
Ruby-crowned Kinglet
Oh, the Joy.

By Carol Blackard

Photo by Peter Burke