

## WILDLIFE CONSERVATION

# A BIRD'S-EYE VIEW OF POPULATION DECLINES



PHOTOS BY HELEN H. RICHARDSON — THE DENVER POST

After weighing it, Meredith McBurney releases a western tanager out of a tube. Birds were being caught and banded and information was being collected about the migrants that make pit stops at Barr Lake State Park, near Brighton, on Sept. 27.

## Bird Conservancy of the Rockies, volunteers collect data on migrating birds to assess species' health, threats they face

**By Judith Kohler**

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The tiny round-bodied, yellow-bellied bird in Meredith McBurney's hands looked delicate, a creature to be handled with a lot of TLC.

"They're long-distance migrants. They're tough birds," McBurney said of the Wilson's warbler, squirming and trying to flutter away. "But boy, you take out their forests, and they've got nothing."

The warbler is one of millions of birds streaming across North America and heading south to their winter homes in Texas, Mexico and even South America. McBurney and other Bird Conservancy of the Rockies staffers and volunteers have been busy the past two months catching, banding and collecting information about the migrants that make pit stops at Barr Lake State Park, near Brighton.

"The big purpose is to conserve birds, and in order to conserve birds you have to



McBurney, left, banded and volunteer coordinator with Bird Conservancy of the Rockies, puts a warbler into the hand of Robin Boden to release it. The information is helping map the birds' travels and explain why their populations are dropping.

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Dale Campau, left, a volunteer with Bird Conservancy of the Rockies, and Emily Munch, banding trainee, head back to the banding station with birds.

## Birds

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understand their full annual life cycle," McBurney said.

Information collected at Barr Lake in the fall and at Chatfield State Park, in Littleton, in the spring is crucial in mapping the lives of birds and understanding why their populations are dropping.

Almost half of all bird species worldwide are in decline, according to a 2022 report by BirdLife International. The U.S. and Canada have lost 3 billion breeding birds since 1970, the State of the Birds report said.

Scientists are using information about where birds are born, their migration routes and where they winter to assess the health of species and pinpoint trouble. The data collected at spots such as Barr Lake, including genetic information from the birds' tail feathers, help scientists fill in gaps on the map.

"Our work doesn't happen without their work," said Jacob Job, associate director of the Bird Genoscape Project. "Our success is built on the efforts of so many people across the hemisphere."

The project is a kind of Ancestry.com for birds. Tom Smith, a professor at the University of California-Los Angeles, and his graduate students began collecting tail feathers gathered at bird banding stations in the 1990s. The Bird Genoscape Project was started in 2009 and moved to Colorado State University when co-director Kristen Ruegg went to CSU.

The project works with The Institute for Bird Populations to get tail feathers gathered at banding stations on bird breeding grounds across the U.S. and Canada. Genetic information collected at migratory stopovers and wintering grounds is helping scientists connect the dots for a complete picture of what is happening with the wildlife.

The goal is to map the "genoscape" of 100 of North America's most threatened birds. Wilson's warbler is among the 13 species whose profiles have been completed. Job said another 12 to 13 are in progress or close to completion. Volunteers and organizations from Alaska to Argentina are involved.

### A bird magnet

On a recent fall morning, McBurney, in charge of volunteers for the Bird Conservancy of the Rockies, called out a bird's weight in grams and attached a minuscule band to one of the bird's legs. Volunteer Susan Rosine and Cynde Barnes recorded the information about each bird and the numbers on the bands.

A yellow-rumped warbler weighed a little more than half an ounce. She plucked two tail feathers — one from the left, one from the right — and put the bird on a volunteer's flattened hands, palms up. The bird immediately took off, maybe on its way to Mexico.

"The best comparison is pulling a couple of hairs from a human's head," McBurney said of the feather-plucking. "It's the easiest, least-invasive way to get DNA



Clockwise from top left: Meredith McBurney checks the band numbers on a Wilson's warbler with magnifying glasses. McBurney blows on the feathers of a warbler to check how much fat is on the bird. McBurney holds a House Wren during a daily banding session. Volunteer Susan Rosine writes down information on each bird brought in from the nets — such as species, gender, weight — and places its feathers inside an envelope during a daily banding session.

from the bird."

The plentiful tail feathers are more loosely attached than other feathers and start growing back right away, she said.

To catch the birds, 25 nets strung between poles are placed on the shore on one side of Barr Lake, among the cottonwood trees and marshland. The nets, about 12 feet long, are made of a fine, soft nylon mesh called mist netting.

A bird will fly headfirst into the net and get its feet caught. Conservancy staffers frequently check the nets, remove the birds, put them in individual cloth bags to try to keep them calm and take them to the banding station.

"We try to be pretty quick. Our goal is to get birds in and out of the stations in about a half hour so they can get back on their way," said Colin Woolley, the bird conservancy's banding manager.

A 2011 study into the safety of the nets found the average rate of



McBurney holds a Wilson's warbler. Bird banding has been used to study wild birds since the late 1800s.

injury to birds was 0.59% and the mortality rate was 0.23% based on 20 years of records from 22 bird-banding organizations.

The banding typically starts just before sunrise and lasts about five hours. Woolley said the work will end early if the weather is hot. The birders roll up all the nets each day before they leave.

About 1,100 birds were banded at Barr Lake in 2021. Early this week, McBurney said about 1,700 had been banded this fall.

"One of my favorite things about fall is we get waves of migratory birds coming through," Woolley said. "It starts with hum-

mingbirds and shore birds, some of the grosbeaks and orioles. Warblers have been really busy over the last two weeks."

Some of the smallest birds fly the longest distances, Woolley said. The breeding grounds for some Wilson's warblers stretch into Canada and Alaska. They'll migrate to Mexico, Costa Rica or South America.

Barr Lake State Park is a magnet for birds that need food and rest.

"If you think about the surrounding area, it's either kind of degraded grassland or developments," Woolley said.

### Where have all the birds gone?

What is the condition of birds' habitat — where they breed, eat and rest — and is it behind the population decreases? That's one of the critical questions the Bird Genoscape Project hopes to answer.

Scientists were trying to figure out why a population of Wilson's warblers whose breeding grounds were in California was declining. McBurney said they discovered that the birds' wintering grounds had become a tourist area and a lot of the habitat was "taken out."

Loss of habitat is a big culprit in the loss of bird populations, Job of the genoscape project said. "Deforestation, transfer of land to new development, oil and gas de-

velopment: all of the reasons that habitat is being destroyed is hurting birds."

Light pollution is an obstacle because birds migrate mostly at night, Job said.

The light can disorient them, leading them to smash into buildings. Domestic cats living outside kill billions of birds a year in the U.S., Job added.

Researchers are exploring the role of climate change, which could lead to a mismatch between birds' arrival and the hatching of insects and the growth of plants. Drought coupled with sudden severe cold weather are believed to have contributed to a mass die-off of birds in the West in 2020. Scientists say they likely starved to death.

Job said identifying trouble spots will allow people to focus conservation efforts where they will do the most good, improving life for birds and people.

He said the same spaces that birds need also provide psychological and environmental benefits for people.

Robin Boden of Longmont visits Barr Lake a few times a year and started taking her father, Roy Hanna, with her during the pandemic.

"We're getting him into bird watching. He's early in his journey," Boden said.

"I'm enjoying it," said Hanna, who lives in Loveland. "There's so much in life, all sorts of things."

The banding sessions also have drawn students. McBurney was getting ready to talk to a high school class studying avian conservation.

"People don't care about things they don't understand, they don't see," McBurney said. "Showing a bird to people close up, it's an experience they don't forget."



Collin Woolley, banding manager with Bird Conservancy of the Rockies, lets students from the Rocky Mountain School of Expeditionary Learning release a white-crowned sparrow.