



STAFF

Susan Spaulding
Senior Wildlife
Biologist

Dave Hoerath
Wildlife Biologist

Mac Kobza
Wildlife Biologist

Jon DeCoste
Wildlife Biologist

Tim Shafer
Wildlife Biologist

Michelle Durant
Wildlife Biologist



Wildlife

Boulder County

2020 Annual Report

Our Mission

County wildlife biologists work toward the preservation and restoration of wildlife species and habitat on open space.

We rise to the challenge of managing public lands increasingly impacted by effects of development, fragmentation, resource extraction, climate change, and recreation.

We strive to utilize the best available research to inform our management recommendations in a consistent, science-based manner.

Strategic Planning

Desired Future Condition Statement:

Diverse and representative habitats and landscape connectivity are preserved, conserved, and enhanced to ensure biological diversity and ecological health at a regional scale.

Natural processes including disturbance regimes are embraced to ensure complete ecosystem function.

Overarching Goals for Our Program:

1. Preserve wildlife habitat to ensure protection from anthropogenic impacts in order to maintain regional native biodiversity.
2. Conserve wildlife habitat to ensure native biodiversity is maintained in a multiple-use-focused landscape while allowing for sustainable use of natural resources.
3. Restore degraded wildlife habitats to bolster ecosystem function, connectivity, and resilience.
4. Promote and manage for functional wildlife movement corridors to facilitate migration and dispersal at multiple scales.
5. Allow or re-create natural disturbance processes to ensure ecosystem function and resilience.

Breeding Birds Surveys— Long-term Data Analysis

Standardized bird surveys have been a regular part of biological field work for Parks & Open Space wildlife biologists since 2003. Since then, 31 transects on 21 properties have been surveyed on a rotating basis starting with a three-year effort to collect baseline data. Surveys are repeated every five years, in hopes that over time and with enough effort, our dataset might provide a snapshot of trends occurring on a changing landscape. Wildlife staff uses a survey protocol developed by the Bird Conservancy of the Rockies' Field Protocol for Spatially Balanced Sampling of Landbird Populations. Combined with an understanding of habitat characteristics and other influences such as recreation, forestry, and fire, we can use this protocol to identify areas of stability or change that can contribute to local conservation efforts.

Survey design, data collection methods, and the analysis of bird data, has evolved over the years from simple counts at designated locations to sampling methods designed to reveal better estimates of species numbers and densities. With updated survey methods comes a new challenge of making sure the data is collected in a manner that best serves the statistical analysis needed to produce accurate information. In 2020, we submitted a Stewardship Funds Project proposal towards enlisting the help of a statistician to examine our data, and run analysis to develop population, density, and occupancy results. This work will occur in 2021. This closer examination of the data can also tell us where we can improve our survey methods or adjust our protocol for more clear results.



Landscape Permeability Study 2020

As part of our group's focus on landscape level collaboration with partner agencies, we reached out to potential researchers via our small grants program. Our priority research topic for 2020 was related to large-scale modeling of landscape permeability (connectivity) and potential limitations due to future climate change impacts. We coordinated this outreach within our department (GIS group) and with both Jefferson County Open Space and City of Boulder Open Space and Mountain Parks.

We were fortunate to get a proposal from a well-known spatial analysis and modeling expert, Dr. Dave Theobald. Dave's work has revolved around modeling of ecological integrity, land use effects on habitat, landscape fragmentation and identification of wildlife movement corridors on multiple scales.

The results of Dr. Theobald's spatial modeling, created via data inputs that the agencies provided, showed the relative permeability of areas, based on factors such as roads, urban areas, 'protected' areas and trails. The results of this modeling will help with management planning related to:

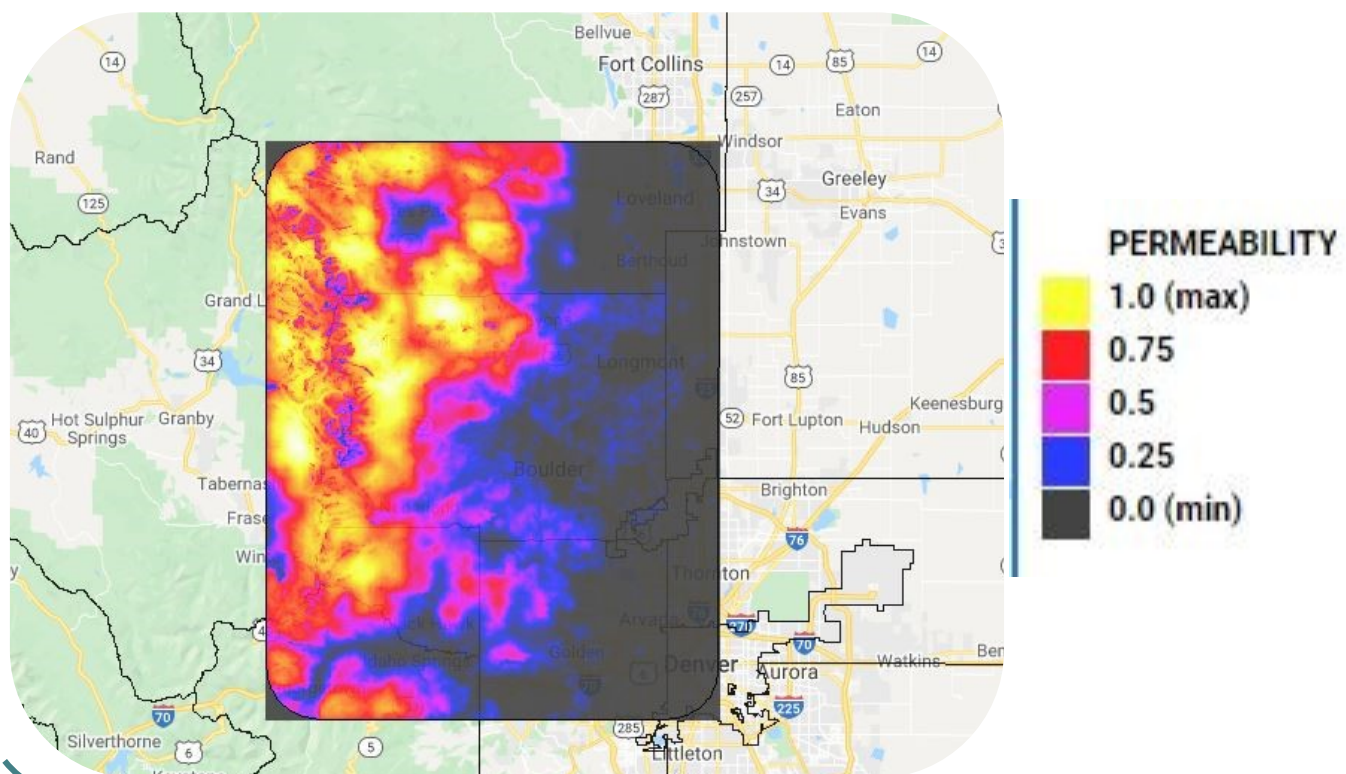
- Targeted restoration or management activities to facilitate wildlife movement (at multiple scales).
- Targeted acquisitions or protections of adjacent or nearby lands to enhance the existing system of connectivity.

We also will be able to build on this initial modeling effort to fine-tune management related to climate-induced expected habitat shifts for specific wildlife species. In addition, Dr. Theobald created a site using the Earth Engine Application where it is possible to add/insert the created spatial layers for visual interpretation.

This work also ties into the Land & Water Stewardship Core Group, which came out of our department's Strategic Plan.

The Land & Water Core Group's joint target statement is:

To proactively find cooperative strategies to improve and sustain the ecological functions of our land, water, and species across the landscape to achieve mutual benefits for the resources we steward.



Native Fish Movement Corridors

Our department has constructed two new multi-objective fish passages on the St. Vrain Creek, the Niwot Ditch and the Longmont Supply Ditch. The goals of these projects include allowing native fish and brown trout to pass freely up and down the creek and ensuring ditch water rights are protected. These ditches were appropriated in the 1860's, meaning that fish will be able to freely pass through these areas of the creek for the first time in about 150 years.

The Longmont Supply Ditch passage project (aka R3P2) is located at the Western Mobile Complex Open Space. It was completed this year with many thanks to Sharla Benjamin and Carrie Cimo, among many other open space staff. Students and faculty from the St. Vrain Valley School District have already begun to study how fish use the new passage.



Longmont Supply Fish Passage: Students install underwater video cameras to monitor fish movements in the reconstructed creek channel.



Niwot Ditch Fish Passage: After dam removal, the creek was reshaped into a natural channel and used buried boulders instead of concrete to divert decreed water rights.

The Niwot Ditch project is located at the Golden-Fredstrom Open Space directly north of the Ron Steward Parks & Open Space Building. It was ranked by CPW as the highest priority for native fish conservation on the Front Range. The USFWS National Fish Passage Program will use this project as the best example of fish passage design for the East Slope of Colorado. A long-term fish monitoring program with CPW and USFWS begins in July. Among many significant contributors from BCPOS are Tim Shafer, Tim Zych, Obadiah Broughton, and Brad Winckelmann. It will be fully completed by Fall of 2021.

Environmental Resources Element Coordinator Position



ER 1.05 Boulder County shall work in partnership with private landowners and non- governmental organizations to protect, conserve, and restore designated environmental resources using a variety of tools. Boulder County has invested considerable forethought, effort and progressive principles into the development of the Environmental Resources Element (ERE) of the Boulder County Comprehensive Plan (BCCP). The tenets of the ERE focus on the preservation and enhancement of the unique and distinctive natural features and ecosystems within the county.

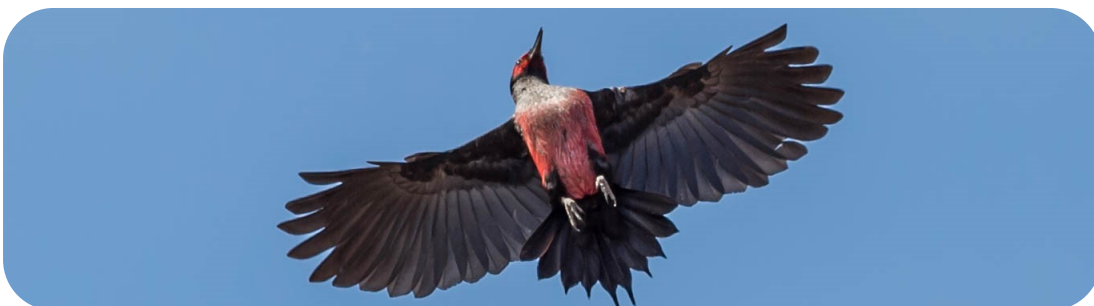
While BCPOS resource specialists provide input on behalf of natural resources for internal planning processes, we are consistently focusing on the bigger picture, in line with the ERE's goals and objectives. However, there existed no position within the County, including within BCPOS, which was tasked with proactive implementation of the ERE goals and policies.

Therefore, in 2019, our program submitted a proposal to the POS Foundation for funds from the Bonnie Shepard donation to enable the creation of an ERE Coordinator. While we received approval and funds from the POS Foundation in 2019, this position was not given the go-ahead until late 2020. We are excited about this opportunity and our own Tim Shafer will fill the role. He will work collaboratively with BCPOS, Community Planning and Permitting, and other departments on directed efforts which will preserve, conserve and restore environmental resources.

We expect this program to include projects that require significant public partnerships and inter-governmental relationship building, grant writing, data gathering and communication. As a first step in building this program, Tim is working with our Conservation Easement program to strategize outreach to private landowners.

Overview of Job Duties:

- Acts to protect the biodiversity and ecological resiliency of small and large-scale ERE-designated resources using partnerships with private landowners, non-governmental organizations, partner agencies, education and outreach to the public, and provides advocacy at state and federal levels.
- Curates and updates information related to the ERE, including the list of Species of Special Concern (SSC), and maps of resources designations. Documents impacts/enhancements to designated environmental resources, monitors long-term ecological change, assesses resources on-the-ground and incorporates the best scientific information to mitigate impacts and enhance conditions.
- Creates and assists in implementation of conservation and recovery plans for priority Species of Special Concern (plant and wildlife).
- Provides education and outreach about ERE, history of the BCCP and legacy of open space programs in Boulder County.



St. Vrain Supply Canal Wildlife Bridges

The Saint Vrain Supply Canal traverses through Ron Stewart Preserve at Rabbit Mountain and along the base of Indian Mountain. During the summer, this canal is a barrier to wildlife movement due to its steep, concrete sides and flowing water.

The Northern Colorado Water Conservancy District (Northern Water) operates this canal, as well as other water conveyance structures along the Front Range. They contacted BCPOS in early 2020 with the prospect of placing some wildlife bridges along the canal. The concept of wildlife movement and removing barriers has long been a priority for the Wildlife group – to connect local habitats and improve travel corridors for animals.

Northern Water used their expertise and experience to design and fabricate the new wildlife bridges. BCPOS Wildlife Staff worked out an agreement to share the costs and to help site the new bridge locations in the field. The first bridge was installed in the fall of 2020 at the south end of the canal. The other two bridges were installed in the spring of 2021!





Resource Management Wildlife

For a copy of the full report please contact:

Susan Spaulding

Phone: 303-678-6292

Email: sspaulding@bouldercounty.org

