



**Paper Session Schedule
2019 Colorado Field Ornithologist Annual Convention
Montrose, Montrose County
June 15, 2019**

1:30 – **Introduction to the paper session.** Christy Carello and Stephanie Pitt

1:35 – **Bird Collisions with Power Lines: A Global Perspective.** Rick Harness. EDM International, Inc., Fort Collins.

1:55 - **First Confirmed Nesting of Baird's Sparrow (*Centronyx bairdii*) in Colorado.** Andy Bankert (presenter) and Erin Youngberg. Bird Conservancy of the Rockies, Fort Collins.

2:15 - **Grazing shapes shortgrass steppe habitat structure and bird populations.** Amber Carver (presenter), Kristin Davis, Angela Dwyer, Cameron Aldridge, Susan Skagen, David Augustine, Justin Derner, and Michael Wunder. University of Colorado, Denver.

2:25 – 2:50 - Break

2:50 – **Hummingbird research at the Rocky Mountain Biological Laboratory.** Dr. David Inouye, University of Maryland. Rocky Mountain Biological Laboratory, Crested Butte.

3:10 – **Rocky Mountain Raptor Program 2018 Annual Report.** Stephanie Pitt (presenter), Gail Kratz, and Carin Avila. University of Northern Colorado, Greeley, and Rocky Mountain Raptor Program, Fort Collins.

3:30 – **Nasal Bristle Length in Common and Chihuahuan Ravens: A Quantitative Study.** Nathan Pieplow (Presenter) and Andrew Spencer. University of Colorado, Boulder.

3:50 – **Concluding remarks.** Christy Carello

Bird Interactions with Power Lines: A Global Perspective.

Rick Harness – *EDM International, Inc.*, 4001 Automation Way, Fort Collins, Colorado 80525. rharness@edmlink.com.

Animal interactions with power lines are a persistent global issue for the electric utility industry. Concern over avian collisions with high-tension lines has existed at least since 1876 (Coues 1876) and continue. Loss et al. (2014) estimate between 12 and 64 million birds are killed each year at U.S. power lines, with between 8 and 57 million birds killed by collision. Rioux et al. (2014) estimate between from 2.5 million to 25.6 million birds are killed per year by Canadian transmission lines. Collisions are thought to be compensatory but there are impacts on declining species, such as Trumpeter Swans (*Cygnus buccinator*), Whooping Cranes (*Grus americana*) and the Indian Bustard (*Ardeotis nigriceps*). Mitigation measures include marking power lines and a new technology tested by EPRI; illuminating spans with ultraviolet light; the Avian Collision Avoidance System (ACAS) (EPRI 2018). The ACAS successfully reduced Sandhill crane collisions at the Rowe Sanctuary in Nebraska (EPRI 2018) and is being tested for warblers in 2019. Smart Vision Cameras and Birds Strike Indicators can also be used to remotely monitor lines. This presentation will cover research on various mitigating and monitoring measures.

First Confirmed Nesting of Baird's Sparrow (*Centronyx bairdii*) in Colorado.

Andy Bankert¹ and Erin Youngberg² – *Bird Conservancy of the Rockies*, 230 Cherry St #150, Fort Collins, Colorado 80521.

¹andy.bankert@birdconservancy.org, ²erin.youngberg@birdconservancy.org.

Prior to 2014 ornithologists considered Baird's Sparrow (*Centronyx bairdii*) to be a rare and seldomly seen migrant in eastern Colorado, but in 2015 a few singing male Baird's Sparrows set up territories at Soapstone Prairie Natural Area north of Fort Collins, Colorado. Over the next two years, sparrows continued to set up territories in localized wet areas with taller grass on the prairie, but small-scale nest searching efforts failed to document successful breeding in the area. In 2018, Bird Conservancy of the Rockies set up an intensive nest searching effort across all seven sites where Baird's Sparrows had established territories in previous years. Throughout the 2018 season, we recorded over 30 singing Baird's Sparrows at six different sites as well as placed color bands and geolocators on a total of ten male sparrows at three of these sites. By following color-banded individuals we observed that most of the Baird's Sparrows in the area held territories for less than a month before moving elsewhere to establish a

new territory, possibly due to a lack of females in their original territories. Despite the high turnover rate of territories, we documented successful nesting of Baird's Sparrows in Colorado on 17 July by capturing and photographing a fledgling Baird's Sparrow incapable of sustained flight. Over the next several days we watched an adult Baird's Sparrow feed four young in a relatively small area. This project provided the first evidence of Baird's Sparrow nesting in Colorado, over 500 km from the nearest known breeding population.

Grazing shapes shortgrass steppe habitat structure and bird populations.

Amber Carver¹, Kristin Davis², Angela Dwyer³, Cameron Aldridge⁴, Susan Skagen⁵, David Augustine⁶, Justin Derner⁷, and Michael Wunder⁸ –

^{1,8} University of Colorado, Denver, Colorado 80217, ^{2,4} Colorado State University, Natural Resource Ecology Laboratory, 1499 Campus Delivery, Fort Collins, Colorado 80523-1499, ³ Bird Conservancy of the Rockies, 230 Cherry St #150, Fort Collins, Colorado 80521, ⁵ United States Geological Survey, Fort Collins Science Center, 2150 Centre Avenue, Bldg C, Fort Collins, Colorado 80526, ⁶ USDA, ARS, NPA, Crops Research Laboratory, 1701 Center Ave., Fort Collins, Colorado 80526, ⁷ USDA, ARS, NPA, High Plains Grasslands Research Station, 8408 Hildreth Road, Cheyenne, Wyoming 82009-8899.

¹amber.carver@ucdenver.edu, ²kristin.davis@colostate.edu,

³angela.dwyer@birdconservancy.org, ⁴cameron.aldrige@colostate.edu,

⁵skagens@usgs.gov, ⁶david.augustine@ars.usda.gov, ⁷justin.derner@usda.org,

⁸michael.wonder@ucdenver.edu.

Local grassland bird community composition depends on the local range of habitat structure, which in turn is a function of recent disturbance history. These habitat associations are presumably reinforced through differential reproductive success, but the importance of vegetation to nest survival is unclear. We measured grassland vegetation and nest survival in northeastern Colorado during the first four years of a long-term grazing experiment involving two contrasting grazing regimes: Traditional Rangeland Management (TRM) and Collaborative Adaptive Rangeland Management (CARM). These regimes employ the same annual stocking rate but differ in steer distribution. Under TRM, all pastures receive moderate-density, season-long grazing, whereas under CARM some pastures are treated with high-density, short-duration grazing while others receive season-long rest. We focused on a suite of seven ground- and shrub-nesting bird species that use different subsets in the spectrum of habitat conditions. Based on 1,302 nests located during our study, we found that collective nest survival increased with vegetation structural diversity and was higher under CARM than TRM in the year when vegetation structural diversity was higher under CARM than TRM. Vegetation structure covaried with grazing

duration and density (steer-days ha⁻¹), and structural diversity under CARM was contingent on number of pastures rested and steer-days ha⁻¹ in the prior year. The influence of specific vegetation attributes on nest survival depended on bird species. These findings demonstrate the importance of habitat heterogeneity to grassland bird community composition and stability, and they suggest that CARM can be used to improve habitat quality for Colorado's grassland breeding birds.

Hummingbird research at the Rocky Mountain Biological Laboratory.

David W. Inouye – *University of Maryland, Department of Biology, Professor Emeritus, College Park, Maryland 20742-4415, Rocky Mountain Biological Laboratory, Principal Investigator, PO Box 519, Crested Butte, Colorado 81224.*
inouye@umd.edu

There's a long history of hummingbird research at RMBL, beginning with Bill Calder in 1971, and much of what we know about the ecology, foraging behavior, demography, and pollination by Broadtailed Hummingbirds is a result of work by Calder, Nick Waser, Graham Pyke, Diane Campbell, David Inouye, and their students and collaborators. More recently, behavioral ecology studies of hummingbird vision (Mary Stoddard and her research group) and genomics (Noah Whiteman and his student Nicolas Alexandre) are ongoing, as are long-term banding studies. I'll give a short review of some of this previous and current research.

Rocky Mountain Raptor Program 2018 Annual Report.

Stephanie Pitt¹, Gail Kratz², and Carin Avila² – ¹*University of Northern Colorado, Department of Biology, 501 20th Street, Campus Box #92, Greeley, Colorado 80639,* ²*Rocky Mountain Raptor Program, 2519 S. Shields St., #115, Fort Collins, Colorado 80526.*
stephanie.pitt@unco.edu, gail@rmrp.org, carin@rmrp.org.

The Rocky Mountain Raptor Program is a non-profit wildlife conservation organization based in Fort Collins, Colorado that rescues, rehabilitates, and releases injured birds of prey—including eagles, hawks, falcons, and owls—and teaches the importance of preserving wildlife and wild places for future generations through its comprehensive environmental education program. RMRP has developed a national reputation for the treatment of raptor illness and injuries, volunteer management, community involvement, and environmental

education. Raptor patients receive wound care, fracture repair, and other medical attention to promote healing with consultation from Colorado State University veterinarians. Those birds that are permanently injured and non-releasable, and who display a temperament adequate for captivity and after evaluation deems them suitable, can become an Educational Ambassador for outreach and education. This talk summarizes the achievements of the RMRP in rehabilitation, education, and research in 2018, a year that smashed every record the Rocky Mountain Raptor Program has ever had: the most raptors ever admitted into rehabilitation, the most days of environmental education, and the most data contributed to research projects.

Nasal Bristle Length in Common and Chihuahuan Ravens: A Quantitative Study.

Nathan Pieplow¹ and Andrew Spencer² – *University of Colorado, Global Studies Residential Academic Program, 317 UCB, Boulder, Colorado 80309-0317.* [1nathan.pieplow@colorado.edu](mailto:nathan.pieplow@colorado.edu), [2gwwarbler@gmail.com](mailto:gwwarbler@gmail.com).

Common and Chihuahuan Ravens present a difficult field identification problem in southeast Colorado. A number of publications cite nasal bristle length as an important field mark: bristles are reported to extend farther down the bill in Chihuahuan Ravens than in Common Ravens. However, the usefulness of this field mark in identification has never been established via a quantitative study. We measured bill length and bristle length in museum specimens of 91 Chihuahuan and 116 Common Ravens. Preliminary analysis indicates that the ratio of bristle length to bill length does indeed average significantly higher in Chihuahuan Raven. Although many ravens fall within the zone of overlap, some can be identified with a high degree of confidence by bristle-to-bill ratio.
