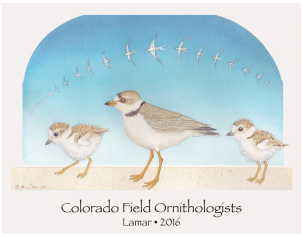
Colorado Field Ornithologists
Annual Convention • Lamar, Colorado
May 5–9, 2016



Science session—Empire Room, Rodeway Inn–Cow Palace, Saturday, May 7, 2016

Abstracts of the presentations, accepted for publication by Colorado Field Ornithologists, are permanently archived at the CFO website (cobirds.org/CFO/Conventions/Abstracts/2016.pdf) and will appear later this year in the peer-reviewed print journal Colorado Birds.

Time	Speaker	Title of Presentation
1:30-1:35	Christy Carello, session moderator	Welcome to the paper session
1:35-1:50	Casey Setash	The teal housewives of Monte Vista: Strategies of nesting Cinnamon Teal, *Anas cyanoptera*, in the San Luis Valley
1:50-2:05	Johanna Beam and Ted Floyd	Attempted nesting by Lilian's Meadowlark, *Sturnella magna lilianae*, in Boulder County, Colorado: A new latitudinal record for the taxon
2:05-2:20	Francis Commercon	Effects of flooding on avian communities: A Colorado case study
2:20-2:35	Nora Covy	Does rock climbing activity affect cliff-nesting birds and their associated communities?
2:35-2:50	Garth Spellman	Geographic variation in the worn-out, shabbily dressed trumpeter (better known as the Rock Wren, *Salpinctes obsoletus*)
2:50-3:15	BREAK	
3:15-3:30	TJ Hathcock	Interspecific communication between Rock Wrens, *Salpinctes obsoletus*, and Canyon Wrens, *Catherpes mexicanus*
3:30-3:45	Nathanial Warning and David Leatherman	Observations of Canyon Wren, *Catherpes mexicanus*, nestling diet during prey delivery
3:45-4:00	Lynn E. Wickersham and John L. Wickersham	Breeding ecology and productivity of the Gray Vireo, *Vireo vicinior*, on Kirtland Air Force Base
4:00-4:15	Ted Floyd	*Tchep, check, tchip, chet*: Differences between the call notes of "Audubon's" and "Myrtle" Yellow-rumped Warblers, *Setophaga coronata auduboni* and *S. c. coronata*

Attempted nesting by Lilian's Meadowlark, *Sturnella magna lilianae*, in Boulder County, Colorado: A new latitudinal record for the taxon

Johanna Beam[1] and Ted Floyd[2]

[1]244 Wichita Road, Lyons, Colorado, 80540; knitter5d@gmail.com. [2]Ted Floyd, 2009 South Fork Drive, Lafayette, Colorado, 80026; tfloyd@aba.org.

The Eastern Meadowlark, *Sturnella magna*, is very rare or casual in Colorado, and the relative statuses in Colorado of subspecies *S. m. lilianae* ("Lilian's" Meadowlark) and nominate *S. m. magna* are not understood. We here present documentation of the occurrence of the "Lilian's" Eastern Meadowlark in northern Boulder County during the summer of the 2015. Multiple birds, including a female and dependent young, were discovered and documented by Beam during the period 21 July–31 August. Photos and audio, contributed by Beam and other observers, establish the identification on the basis of plumage and call notes.

This record constitutes the third or fourth for well-birded Boulder County of Eastern Meadowlark, and the first for *lilianae*. It appears to be the farthest north record anywhere for *lilianae*, and is notable for involving an apparent hybrid pairing (*lilianae* × Western Meadowlark, *S. neglecta*). Many Colorado bird species are experiencing range shifts, and expansion northward is a particularly prominent aspect of the phenomenon. The Boulder County "Lilian's Meadowlarks," rather than being an isolated discovery, thus may be part of a broader pattern of population change at the community level. In that vein, we encourage all birders and field ornithologists to try to understand vagrancy and range expansions in the context of large-scale and long-term avian population dynamics.

Effects of flooding on avian communities: A Colorado case study

Francis Commercon

9396 South Morning Glory Way, Highlands Ranch, Colorado, 80130; siskinbyderailleur@gmail.com.

Riparian forests tend to sustain greater wildlife abundance and diversity per unit area than other land uses and thus hold particularly high value for wildlife conservation. Water resource development, however, has significant impacts on riparian habitats in arid regions. A recently approved project in Chatfield State Park, Colorado, will increase the reservoir level during high precipitation years, periodically inundating over 500

additional acres of park land. How does periodic understory inundation impact avian communities? In May–June 2015, when natural flooding in the park mimicked water levels predicted under future management, I employed standardized point count surveys to compare bird densities in flooded and non-flooded forests. I also compared the Shannon–Weiner diversity index between the two habitat types.

I found that inundated forests do not show lower bird diversity. Species showed a range of responses to inundation. Four species showed no effects of inundation, two species (Yellow Warbler, *Setophaga petechia*; Western Wood-Pewee, *Contopus sordidulus*) had higher densities in flooded forest, and two species (House Wren, *Troglodytes aedon*; Yellow-breasted Chat, *Icteria virens*) had lower densities in flooded forest. Species' foraging strategies may explain preferences. Much of the forest at risk of inundation in the park will be cleared. However, this study indicates that periodically inundated forest still sustains avian diversity and is even preferred by some species, suggesting that leaving forest to be flooded would benefit avian communities.

Does rock climbing activity affect cliff-nesting birds and their associated communities?

Nora Covy

School of Biological Sciences, University of Northern Colorado, Ross Hall, Room 2480, Campus Box 92, 501 20th Street, Greeley, Colorado, 80638; nora.covy@gmail.com.

Cliffs increase the diversity of organisms by adding structural heterogeneity within landscapes and serve as refuges for many unique species, including cliff-specialist birds. The recent increase in the popularity of rock climbing represents a novel disturbance to cliff ecosystems. In this study, I used a holistic approach to examine how rock climbing activity influences the distribution and behavior of avian species at cliff formations in Boulder Open Space and Mountain Parks (OSMP), Colorado. I conducted surveys of birds at 16 high- and 16 low-climbing–use formations.

I found that cliff aspect was the strongest predictor of both avian diversity and cliff use within this system. Lower avian species richness and diversity characterized high climbing use sites, but this pattern was driven by birds near cliffs rather than on cliffs. Contrary to expectation, Violet-green Swallows, *Tachycineta thalassina*, and White-throated Swifts, *Aeronautes saxatalis*, spent more time on cliffs at high-climbing–use sites compared to low-climbing–use sites. Canyon Wrens, *Catherpes mexicanus*, were present for an equal amount of time at high- and low-use sites, but spent more time singing and foraging at low-climbing–use sites. Overall, my work showed that rock climbing does not have a major negative impact on birds that use cliffs in Boulder OSMP.

Tchep, check, tchip, chet: Differences between the call notes of "Audubon's" and "Myrtle" Yellow-rumped Warblers, *Setophaga coronata auduboni* and *S. c. coronata*

Ted Floyd

2009 South Fork Drive, Lafayette, Colorado, 80026; tfloyd@aba.org.

The Yellow-rumped Warbler, *Setophaga coronata*, is probably the most familiar and most frequently detected warbler in Colorado. It occurs statewide on migration, it breeds extensively in Colorado's mountain forests, and it is the only warbler that occurs regularly in winter in Colorado. Two subspecies, the Audubon's, *S. c. auduboni*, and the Myrtle, *S. c. coronata*, occur in Colorado. Plumage differences between *auduboni* and nominate *coronata* are well known to birders, as are differences between the call notes (or "chip notes"). But how, exactly, do these chip notes differ? I here present evidence for a diagnostic spectrographic difference between the two taxa, with the chip note of the Myrtle Warbler consisting of a rising element followed by a falling element, but with the chip note of the Audubon's Warbler consisting of a double-banded rising element not followed by a falling element.

Warbler chip notes are variable, and so it is within the Yellow-rumped Warbler complex. In particular, some Audubon's Warblers on the breeding grounds may give call notes with Myrtle-like spectrographic signatures. Also, Colorado birders and field ornithologists are regularly confronted with Audubon's × Myrtle hybrids, whose chip notes may be intermediate between those of the parental taxa. Nevertheless, typical chip notes of the two taxa are instantly recognizable spectrographically. In many instances, then, spectrograms of chip notes—easily obtained with current technology—can valuably support records of Myrtle and Audubon's warblers out of range.

Interspecific communication between Rock Wrens, *Salpinctes obsoletus*, and Canyon Wrens, *Catherpes mexicanus*

TJ Hathcock

College of Natural and Health Sciences, University of Northern Colorado, Ross Hall, Room 2480, Campus Box 92, 501 20th Street, Greeley, Colorado, 80639; hath3033@bears.unco.edu.

The Canyon Wren, *Catherpes mexicanus*, and Rock Wren, *Salpinctes obsoletus*, are closely related bird species that coexist while exploiting similar ecological niches in cliff habitats. Because they fill similar niches, it might be beneficial for them to communicate to better partition resources when living in close proximity. To investigate if they use vocal signals to communicate, we tested whether the two species respond differently to playback stimuli of conspecific and heterospecific male song. We measured and compared how quickly and

how close males of each species approached the speaker in response to songs of both species. All vocal responses were recorded for 45 minutes after each playback and allowed us to measure each song's high frequency, low frequency, frequency range, maximum frequency, duration, and number of syllables.

Using the approach response data, we found that males of both species significantly respond to conspecific playback but not to heterospecific playback. However, some individuals of both species did respond strongly to heterospecific playback by both approaching and singing, suggesting that there may be some communication happening between the two species. We are now in the process of quantifying the song recordings, which may show changes in singing patterns in response to the different stimuli.

The teal housewives of Monte Vista: Strategies of nesting Cinnamon Teal, *Anas cyanoptera*, in the San Luis Valley

Casey Setash
Colorado State University
Department of Fish, Wildlife, and Conservation Biology, Colorado State University, 1484 Campus Delivery, Fort Collins, Colorado, 80525; csetash@rams.colostate.edu.

The Cinnamon Teal, *Anas cyanoptera*, is an iconic species of the West, and breeds in higher densities in Colorado than nearly any other state. The foundation of effective waterfowl management is an abundant and resilient waterfowl population, which begins with an understanding of what drives population size and growth. Population growth rate is the product of a number of vital rates, all of which remain relatively unknown for Cinnamon Teal. In order to augment the information that currently exists, I am in the process of investigating several environmental (e.g., visual obstruction rating, clutch size, and distance to water) and temporal factors (e.g., nest age and timing of incubation initiation) affecting nest success of Cinnamon Teal on Monte Vista National Wildlife Refuge.

In 2015, my colleagues and I found 40 Cinnamon Teal nests with a nest success rate of 22.9%. Environmental factors around the nest had a greater influence on whether the nest was successful than did temporal factors. These results have strong implications for habitat management and, to some extent, contradict expected waterfowl life history strategies. This research project is ongoing, and more nests will be monitored over the 2016 and 2017 breeding seasons.

Geographic variation in the worn-out, shabbily dressed trumpeter (better known as the Rock Wren, *Salpinctes obsoletus*)

Garth M. Spellman

Department of Zoology, Denver Museum of Nature and Science, 2001 Colorado Boulevard, Denver, Colorado, 80205; garth.spellman@dmns.org.

The Rock Wren, *Salpinctes obsoletus*, is a ubiquitous constituent of arid, rocky habitats in North America and Central America. Rock Wrens in Colorado and the western U.S. all pertain to the widespread nominate subspecies *obsoletus*, but the situation south of the U.S. border involves considerably more geographic variation than is the case here. Taxonomists during the mid-1900s recognized 14 subspecies of the Rock Wren, although subsequent examination of specimens suggested that much of the variation appears clinal, with the result that the number of subspecies was reduced to seven.

I am currently engaged in research that combines analyses of morphology, genetics, and vocalizations to explore geographic variation in the Rock Wren. Preliminary results from the analysis of morphological data suggest that the two Central American subspecies and the oceanic island subspecies (Isla San Benedicto and Isla Guadeloupe) are easily distinguished from their mainland counterparts. Unlike Rock Wrens in Colorado and elsewhere in the U.S. and Mexico, these island and Central American populations have longer, thicker and wider bills and shorter, less-convex wings. I will discuss the taxonomic and evolutionary implications of this work: How does this affect your checklist (taxonomy), and how do morphological characters differ between island birds and migrants (evolution)?

Observations of Canyon Wren, *Catherpes mexicanus*, nestling diet during prey delivery

Nathanial Warning[1] and David Leatherman[2]

[1]Natural Resources Department, City of Longmont, 7 South Sunset Street, Longmont, Colorado, 80501; natwarning@gmail.com. [2]612 Stover Street #7, Fort Collins, Colorado, 80524; daleatherman@msn.com.

We identified prey items being delivered by adult Canyon Wrens, *Catherpes mexicanus*, to nestlings on public lands in northern Colorado using digital photography. Adult wrens delivered single invertebrate prey items from 11 orders in four classes: Insecta, Arachnida, Malacostraca, and Chilopoda. Within Insecta and Chilopoda, we describe invertebrates from four families not previously documented as Canyon Wren prey: Noctuidae, Rhaphidophoridae, Formicidae, and Scutigeridae.

Our observations align with previous studies in other locations indicating that insects and spiders are key components of the Canyon Wren diet. Moreover, our data show that additional locally available invertebrates including centipedes, isopods, and winged ants are captured to provision nestlings. Prey identification from digital imagery is a non-destructive sampling technique which can effectively be implemented for songbirds, and may be suited for citizen science monitoring programs on public lands.

Breeding ecology and productivity of the Gray Vireo, *Vireo vicinior*, on Kirtland Air Force Base

Lynne E. Wickersham[1] and John L. Wickersham[2]

[1]Animas Biological Studies, 138 Overlook Drive, Durango, Colorado, 81301; lynn@animasbiological.com. [2]Animas Biological Studies, 138 Overlook Drive, Durango, Colorado, 81301; john@animasbiological.com.

The Gray Vireo, *Vireo vicinior*, breeds only in the arid Southwest, mainly in piñon–juniper woodlands. Relatively few data exist on their breeding ecology in Colorado or elsewhere. We monitored 196 Gray Vireo breeding territories and 145 nests across 8 years (2008–2015) on Kirtland Air Force Base in New Mexico. Territory size (based on minimum convex polygons) ranged from 0.4 to 23.7 ha (mean=4.5 ha). Return rate of color-banded males ranged from 30.0% to 77.8%; most males returned to the same territory in subsequent years. Nest success, based on exposure days and daily survival rate (DSR), varied widely across years, from a low of 9.5% to a high of 84.0% (mean=26.9%). Almost half of unsuccessful nests (49.4%) failed due to predation. Brown-headed Cowbirds parasitized 13.7% of nests across all years, though the proportion of parasitized nests declined from 2008 to 2015. Host adults abandoned 50% of parasitized nests after cowbirds laid one or two eggs, suggesting egg recognition by Gray Vireos. Only 20% (4) of parasitized nests fledged cowbird young, and 5% (1) fledged cowbird and vireo young.

Statistical modeling indicates that year, mean tree height around the nest, and aspect influenced daily nest survival (DSR). The most compelling data suggest a slight positive effect for mean tree height on DSR. Nest-scale habitat models also point to the importance of mean tree height around the nest site, and suggest that Gray Vireos nested in areas with taller trees relative to available habitat within their territories. In 2016 we will initiate a new study in southwestern Colorado to evaluate Gray Vireo nesting ecology at the northern limit of the species' range.

Annual Convention of the Colorado Field Ornithologists, Lamar, Colorado
Scientific Paper Session—Saturday, May 7, 2016

Time	Speaker	Title of Presentation
1:30-1:35	Christy Carello, session moderator	Welcome to the paper session
1:35-1:50	Casey Setash	The teal housewives of Monte Vista: Strategies of nesting Cinnamon Teal, *Anas cyanoptera*, in the San Luis Valley
1:50-2:05	Johanna Beam and Ted Floyd	Attempted nesting by Lilian's Meadowlark, *Sturnella magna lilianae*, in Boulder County, Colorado: A new latitudinal record for the taxon
2:05-2:20	Francis Commercon	Effects of flooding on avian communities: A Colorado case study
2:20-2:35	Nora Covy	Does rock climbing activity affect cliff-nesting birds and their associated communities?
2:35-2:50	Garth Spellman	Geographic variation in the worn-out, shabbily dressed trumpeter (better known as the Rock Wren, *Salpinctes obsoletus*)
2:50-3:15	BREAK	
3:15-3:30	TJ Hathcock	Interspecific communication between Rock Wrens, *Salpinctes obsoletus*, and Canyon Wrens, *Catherpes mexicanus*
3:30-3:45	Nathanial Warning and David Leatherman	Observations of Canyon Wren, *Catherpes mexicanus*, nestling diet during prey delivery
3:45-4:00	Lynn E. Wickersham and John L. Wickersham	Breeding ecology and productivity of Gray Vireos on Kirtland Air Force Base
4:00-4:15	Ted Floyd	*Tchep, check, tchip, chet*: Differences between the call notes of "Audubon's" and "Myrtle" Yellow-rumped Warblers, *Setophaga coronata audubonі* and *S. c. coronata*