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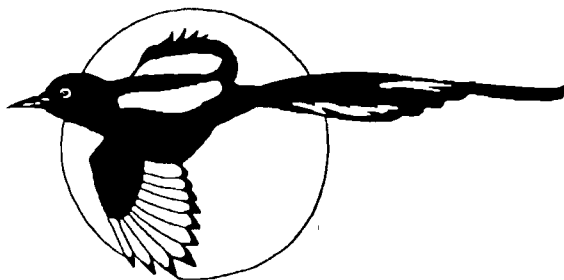
# *Colorado Field Ornithologists*

The Colorado Field Ornithologists' Quarterly

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*Isa Paulsen*



*JOURNAL OF THE COLORADO FIELD ORNITHOLOGISTS* (USPS 0446-190) (ISSN 1094-0030) is published quarterly by the Colorado Field Ornithologists, 3410 Heidelberg Drive, Boulder, CO 80303-7016. Subscriptions are obtained through annual membership dues. Periodicals postage paid at Boulder, CO. POSTMASTER: Send address changes to *Journal of the Colorado Field Ornithologists*, P.O. Box 481, Lyons, CO 80540-0481.

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## PHOTOGRAPHS AND ILLUSTRATIONS

**CURLEW SANDPIPER:** Isa and Emily Paulsen each drew their own rendition of the Curlew Sandpiper that made an unprecedented visit to Colorado on 30 June 1998 (see the Summer 1998 Field Notes, this issue). Isa used colored pencils to capture a portrait of the Curlew Sandpiper, and Emily used pencil. At just 14 years of age, Isa has already proven her talents by winning awards for her artwork. Emily, Isa's younger sister, has her own wonderful style and astonishes her audiences as well. The girls live in Lamar, Colorado.

*Isa Paulsen*.....Front Cover  
*Emily Paulsen*.....76

**WILLET:** Sherrie York, an artist, illustrator, and designer from Golden, Colorado, used pen and ink to sketch this Willet.

*Sherrie York*.....13

**DARK-EYED JUNCO (WHITE-WINGED RACE):** Joseph Rigli sketched this Dark-eyed Junco with pen and ink.

*Joseph Rigli*.....27

**COMMON GRACKLE:** John W. Colvin of Fort Collins, Colorado, caught this "White-tailed" Common Grackle on film. The grackle is displaying a perfect example of partial albinism.

*John W. Colvin*.....34

**CALIFORNIA CONDORS:** Jim Viets had the surprise of his life when three California Condors showed up at Grand Mesa as he conducted an evaluation of the Lands End Observatory.

*Jim Viets*.....35

**DR. ALEXANDER CRUZ AND NICHOLAS A. CRUZ:** Dr. Alexander Cruz and his son, Nicholas A. Cruz (three years old) paused for this photograph in June 1997 at Shadow Mountain Reservoir, just south of Grand Lake, Colorado.

*Diane Cruz*.....42

**WESTERN MEADOWLARK:** Alexander Cruz, Jr., a natural history illustrator for the design and production unit of Archipelago Productions, sketched this meadowlark series with pen and ink to illustrate how a meadowlark forages in matted grass.

*Alexander Cruz, Jr.*.....54

**CALIFORNIA GULL:** David Leatherman, entomologist with the Colorado State Forest Service, photographed this California Gull just south of Denver at Cherry Creek Reservoir on 25 September 1995.

*David Leatherman*.....61

## UPCOMING CFO FIELD TRIPS

**3 March 1999 -- "Song" of the Boreal Owl.** Most people seek visual encounters with Boreal Owls, but how about an evening adventure of searching for their haunting little "songs?" Meet trip leader, Rob Cavallero, at 5:30 p.m. in the parking lot of the Colorado State Forest Service Moose Visitor Center, approximately six miles west of Cameron Pass on the south side of Colorado Route 14. Please call Rob at least one week in advance if you plan to go: 970/206-9782.

**27 March 1999 -- Western Slope Owl Prowl with Grand Valley Audubon Society.** Join Rich Levad for an afternoon /evening (weather permitting) prowl to find Long-eared, Barn, Western Screech, Great Horned, and, with some luck, Saw-Whet, Flammulated, and Boreal Owls. Meet at 1:00 p.m. at the Colorado Welcome Center just off I-70 in Fruita. Please call Rich for details: 970/242-3979.

**24 April 1999 -- Gone Grouse.** Spring is the season when grouse perform their amazing array of breeding displays--strutting, tail and wing spreading, leaping, and much more. Join trip leader, Jim Haskins, as you search for Sharp-tailed, Sage, and Blue Grouse near Hayden, Colorado. Please call Jim at least one week ahead for trip details: 970/276-3338.

### Notice to FIELD TRIP PARTICIPANTS

Please contact the field trip leader at least one week in advance if you intend to participate. Trips often go where the number of participants must be limited or where we must provide notice of how many participants there will be. Knowing the number of participants in advance also helps the leader to plan the best possible trip, ensures that you know where/when to meet, what to bring, etc. Please arrive no later than the scheduled meeting time; leaders may not be able to delay departure for late arrivals. Carpool drivers should inform passengers of their schedule prior to departure to avoid scheduling conflicts. Leaders will make every effort to keep the group together, and drivers should make every effort to stay with the group.

### COLORADO FIELD ORNITHOLOGISTS' MISSION STATEMENT

The Colorado Field Ornithologists exists to: promote the field study, conservation, and enjoyment of Colorado Birds; review sightings of rare birds through the Colorado Bird Records Committee and maintain the authoritative list of Colorado birds; publish the *Journal of the Colorado Field Ornithologists*; and conduct field trips and workshops, and hold annual conventions.



## TAKE A LOOK AT THE **1999 CFO CONVENTION!!**



The 1999 Colorado Field Ornithologists' Convention will be held at the **Marriott Hotel in Ft. Collins, 19 - 23 May 1999**. All convention activities will be at (or leave from) the Marriott, making it a logical place to stay while in Ft. Collins. Rooms are being held at the Marriott for a special convention rate of \$89.00/double; you must mention CFO when making reservations: 1-800-548-2635. **Please reserve your room early.** Workshops begin on Wednesday, 19 May, and continue through the weekend, along with field trips and special convention activities. A schedule of events and a registration form will be mailed to you by 15 February; registration forms must be returned by 15 April. Contact Rachel Kolokoff by phone at 970/495-1751 or by e-mail at [hopko@frii.com](mailto:hopko@frii.com) for more information, or visit the CFO website at: <http://www.frii.com/~hopko>.

CFO is pleased to welcome **William S. Clark, author of the Peterson Field Guide, Hawks**, to the 1999 Convention. His presentation, "Raptor Migration World-Wide," will take place at the evening banquet on Saturday, 22 May. On Thursday, 20 May, he will teach Beginning Raptor ID from 8:00 a.m. to 12:00 p.m. and Advanced Raptor ID from 1:30-5:30 p.m.; the charge to CFO members for each session will be \$20.00.

Other activities planned include: beginner birdwatching lead by Radeaux; numerous exhibits / vendors you can visit during registration on Thursday and Friday evenings; a CFO booth with special convention merchandise; a cash bar and snacks; a game of "Stump the Experts" (a panel of experts attempting to ID slide photos of difficult birds--audience participation welcomed!); lots of great field trips (for beginning to advanced birders) to northern Colorado hotspots, including Wray (for viewing Greater Prairie Chickens) and Estes Park / Rocky Mountain National Park! Meet up with old friends, make new ones; learn something new about birds / bird conservation; sample retail products related to birds and birdwatching.

A self-running, **member slide show** will take place on Thursday and Friday evenings. If you wish to participate (up to 10 slides), please send duplicates (NO originals) by 1 May to: Leon Bright, 636 Henry Ave., Pueblo, Colorado 81005. Mark slides #1 - 10 and include corresponding documentation indicating; photographer name, bird ID, date, and location of the photograph. Slides must be picked up at the end of the convention. CFO will not be responsible for loss, theft, or damage.

## 4TH ANNUAL EAGLE DAY FESTIVAL



Come celebrate the return of wintering Bald Eagles in Pueblo with a full day of activities featuring natural history. The festival is hosted by Colorado State Parks, Colorado Division of Wildlife, Greenway



Nature Center of Pueblo, Arkansas Valley Chapter of the National Audubon Society, and Pueblo County School District 70.

Saturday, 6 February 1999, 9:00 a.m. - 4:00 p.m.

**Pueblo Reservoir State Recreation Area**

Southshore Headquarters (pass required)

### **Speaker**

"Wind Farms and Birds" by Dr. Ron Ryder, Professor Emeritus  
Colorado State University

### **Live Exhibits**

Greenway Nature Center Raptor Program

Hawks Aloft

Air Force Academy Falcon Mascot Program

### **Activities**

Pueblo Zoo Threatened and Endangered Species, Colorado State Parks  
Wildlife Watch ½-day seminar, Barbara Yeager face painting (afternoon)

### **Refreshments**

Jess Price Food Wagon

For More Information: If you wish to be an exhibitor or have any questions, call John Koshak 719/227-5221.

### **REMINDER: REQUEST FOR CBC DATA**

Just a reminder to Colorado's Christmas Bird Count (CBC) compilers: Alan Versaw would like to summarize the results of all Colorado CBCs for the April issue of the *Journal of the Colorado Field Ornithologists*. He would like Colorado CBC compilers to send a copy of their results to him for inclusion in the overall summary. You can contact Alan at:

Alan Versaw

403 Maplewood Drive, Colorado Springs, Colorado 80907  
719/598-7130; [aversaw@juno.com](mailto:aversaw@juno.com)

### **CALL FOR NOMINATIONS FOR THE RONALD A. RYDER AWARD FOR DISTINGUISHED SERVICE TO COLORADO FIELD ORNITHOLOGY**

\*\*\*\*\*

#### **SELECTION CRITERIA**

1. For distinguished service to the Colorado Field Ornithologists and its goals.
2. For scholarly contributions to the Colorado Field Ornithologists and to Colorado field ornithology.
3. For sharing knowledge of Colorado field ornithology with the people of Colorado.

#### **NOMINATION & SELECTION PROCESS**

1. The Award will be given every year.
2. Only living persons may be nominated.
3. Nominations may be made by the membership at large.
4. The Board selects and approves an awardee for announcement at the Annual Colorado Field Ornithologists' Convention.
5. The Award will be a plaque designed to match the original plaque given to Dr. Ronald A. Ryder.
6. Nominations should be submitted in writing to the Award Committee Chairperson on or before February 1 to be considered by the Colorado Field Ornithologists' Board of Directors.

\*\*\*\*\*

Submit nominations to Award Committee Chair:  
Rich Levad, 2924 Ronda Lee Road, Grand Junction, Colorado 81503  
970/242-3979; [levadgj@mesa.k12.co.us](mailto:levadgj@mesa.k12.co.us)



**COLORADO BIRD OBSERVATORY OCCASIONAL PAPERS:  
A NEW FEATURE IN THE  
*JOURNAL OF THE COLORADO FIELD ORNITHOLOGISTS***

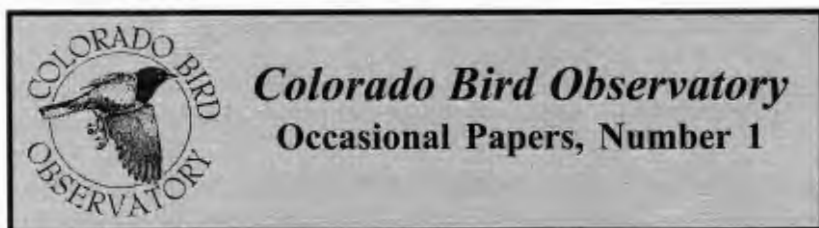
Cynthia Melcher, Editor  
*Journal of the Colorado Field Ornithologists*  
4200 North Shields, Fort Collins, Colorado 80524

Mike Carter, Director  
Colorado Bird Observatory  
13401 Piccadilly Road, Brighton, Colorado 80601

As the title implies, we are introducing a new and permanent section of the *Journal of the Colorado Field Ornithologists* (JCFO) dedicated to reporting contributions made to Colorado ornithology by the Colorado Bird Observatory (CBO). There are several reasons why the JCFO should provide a special section for CBO's contributions, not the least of which is the overlap in our missions to conserve birds in Colorado. Moreover, CBO conducts most of its research, monitoring, and inventory work on Colorado birds--in migration and wintering areas as well as on breeding grounds, thus the most logical place for reporting the results of CBO's work is the one and only publication dedicated to Field Ornithology in Colorado. Finally, CBO has sufficient material to contribute regularly to the JCFO for a long time, thus it makes sense to present that material as a series of papers. Although "occasional" is a standard term used to identify scientific papers produced by a given entity on an intermittent to regular basis, CBO's goal is to contribute one paper per JCFO issue. Among CBO's staff, there are already enough papers to submit one per quarter into the next millennium.

CBO believes that its first paper for this series--Distribution and Numbers of Breeding Willets in Colorado (see page 9)--is a great example of what to expect. The paper reports new and complete information (i.e., not a study in progress) on a Colorado breeding species. As with all scientific papers published in the JCFO, the paper was subjected to peer review and its conclusions reflect the rigor with which it was approached. We anticipate that birders, ornithologists, and managers of Colorado's wildlife alike will find the Willet paper--and all future CBO papers--interesting.





## **DISTRIBUTION AND NUMBERS OF BREEDING WILLETS (*CATOPTROPHORUS SEMIPALMATUS*) IN COLORADO**

Glenn P. Giroir

Colorado Bird Observatory

13401 Piccadilly Road, Brighton, Colorado 80601

### **Abstract**

During the spring of 1998, I conducted surveys of nesting Willets (*Catoptrophorus semipalmatus*) in areas of Colorado where Willets have been recorded as, or suspected of, nesting: North Park, Browns Park National Wildlife Refuge (NWR), the Yampa River valley, Fruit Grower's Reservoir, Antero Reservoir, and Barr Lake. I surveyed all suitable habitat in these areas and found 112 Willets on 94 breeding territories in North Park, and five Willets on three breeding territories at Fruit Grower's Reservoir. No Willets were found at Browns Park NWR, the Yampa River valley, Antero Reservoir, or Barr Lake.

### **Introduction**

Willets (*Catoptrophorus semipalmatus*) are common breeding birds along the Atlantic and Gulf coasts (*C. s. semipalmatus*), and in the Great Basin and northern Great Plains (*C. s. inornatus*). They nest along marshy lake margins and adjacent uplands, coastal intertidal zones, and in salt marshes (Ehrlich et al. 1988). Although they are fairly common migrants on the eastern plains of Colorado, the distribution and, in particular, the abundance of breeding Willets in Colorado is not well studied (Andrews and Righter 1992). In 1931, Niedrach photographed a downy, young Willet at Barr Lake in Adams County to document the species' first breeding record in Colorado; in 1936, the species was found nesting again in the Barr Lake area (Bailey and Niedrach 1965). Andrews and Righter (1992) listed Willets as breeders in North Park, Jackson County, however they did not mention breeding abundance. In 1982 - 1983, Willets nested at Antero Reservoir, Park County (Andrews and Righter 1992), and there have been reports of Willets summering in the Yampa River valley,

Moffat County (Rich Leivad, personal communication). Willets also have been suspected of nesting in Delta County (five records) and in Middle Park, Grand County (one record), although most of the birds reported from these locations were probably nonbreeders (Andrews and Righter 1992).

To better understand the species' abundance and current distribution in Colorado, I conducted a Willet census during spring 1998 in areas where they had been known to occur during the breeding season: North Park, Browns Park National Wildlife Refuge (NWR) (Moffat County), the Yampa River valley, Fruit Grower's Reservoir (Delta County), Antero Reservoir, and Barr Lake. This project was part of the Colorado Bird Observatory's extensive, ongoing project to monitor breeding birds in Colorado.

### **Study Areas**

North Park, located in north-central Colorado, is a glacier-carved valley bordered by the Medicine Bow, Park, and Never Summer ranges of the Rocky Mountains. The valley floor (park), which averages approximately 2500 meters (8200 feet) in elevation, is a vast area extending outward from the centrally-located town of Walden. The valley floor is dominated by sagebrush, grassland, and wetland areas surrounded by upland habitats along the bases of the mountains. Several rivers (North Platte, Canadian, Michigan, and Illinois) wind through North Park supplying water to the local lakes and marshes. Arapaho NWR, which encompasses a series of irrigated meadows, shallow lakes, and ponds, is located in the center of the park, and is managed to provide habitat for waterfowl and shorebirds. Mean annual precipitation in Walden is 27.4 centimeters (10.8 inches). Mean annual temperature is 2.6°C (36.7°F); January is the coldest month [average -8.8°C (16°F)], and July is the warmest month [average 14.8°C (58.6°F)] (National Oceanic and Atmospheric Agency 1998). Although they are lower in elevation than North Park, Browns Park NWR, the Yampa River valley, Fruit Grower's Reservoir, Antero Reservoir, and Barr Lake [average 1500 meters (4900 feet)] are similar in topography / geologic structure (fairly flat, irrigated valleys) and habitat to the areas surveyed in North Park.

### **Methods**

Because North Park was believed to have largest number of breeding Willets in Colorado (Andrews and Righter 1992), I established the Willet census protocol there and then applied those methods in all areas censused. First, I referred to the Colorado Atlas and Gazetteer (Delorme Mapping 1995) and consulted with local wildlife-agency personnel to locate all lakes, swamps, marshes, and other wetland areas in a given study area. Based on the distribution

of suitable habitat, I divided each study area into survey areas (Appendix 1) and surveyed each area to document all suitable Willet-nesting habitat (gently sloping lake margins, riparian wetlands, irrigated grasslands, or mud flats). I then walked the perimeter of every accessible lake, reservoir, and wetland in the survey area, counting each Willet, noting its location (with a handheld Garmin Model II Plus Global Positioning System unit) and behavior. I recorded each single, territorial Willet or pair of Willets as representing a breeding territory. Because all Willets found were on territory and vocal, I was able to conduct surveys throughout the day.

During the week of 23-27 May, I surveyed a total of 70 lakes, ponds, and wetland areas in North Park (Arapaho NWR, Hebron Waterfowl Area, Walden Reservoir, Delaney Butte / Lake John, Cowdry Lake, and Boettcher Lakes; Appendix 1), logging a total of 58 survey hours. During the week of 6-9 June, I surveyed a total of five wetland areas in Browns Park NWR, one wetland area at Fruit Grower's Reservoir, and two riparian wetland areas in the Yampa River valley, logging a total of 22 survey hours; Antero reservoir was surveyed on 12 June and Barr Lake was surveyed several times during the breeding season (Appendix 1).

### **Results and Discussion**

I found a total of 112 Willets on 94 breeding territories in North Park, and five Willets on three breeding territories at Fruit Grower's Reservoir (Table 1). I found no Willets at the Yampa River valley, Browns Park NWR, Antero Reservoir, or Barr Lake (Table 1) locations. Overall, the habitats used most by Willets in Colorado were wet-meadow grasslands, marshes, and vegetated shorelines of large lakes and reservoirs. Normally, I found the birds foraging near the edges of grasslands and marshes and on mud flats near vegetated areas.

Of all areas surveyed, Walden Reservoir supported the largest number of Willets. Suitable habitat occurs around the entire lake, and Willet territories were dispersed evenly along the shore. Arapaho NWR also supported large numbers of Willets, but there the birds were more dispersed than they were at Walden Reservoir, probably due to the large distances between patches of suitable habitat. I found another large group of Willets at Hebron Waterfowl Area, where most Willets inhabited an area of extensive marshlands on the north side of Eighteen Island Reservoir; I also found Willets at two smaller reservoirs, one south and one north of Eighteen Island Reservoir. The Delaney Butte / Lake John areas had little breeding habitat and few Willets; the lakes have fairly steep sides and rocky shorelines, and they sustain much fishing, boating,

**Table 1.** Number of Willets, by location, observed in Colorado, spring 1998.

<b>Location</b>	<b>No. Willets</b>	<b>No. Willet Territories</b>
<b>North Park</b>		
Arapaho NWR	26	23
Hebron Waterfowl Area	22	21
Walden Reservoir	55	43
Delaney Butte / Lake John	8	6
Cowdry Lake	1	1
Boettcher Lakes	0	0
<b>Browns Park NWR</b>		
Flynn Bottom	0	0
Nelson Bottom	0	0
Butch Cassidy Lake	0	0
Hog Lake	0	0
Hoy Bottom	0	0
Fruit Grower's Reservoir	5	3
Yampa River valley	0	0
Antero Reservoir	0	0
Barr Lake	0	0
<b>Totals</b>	<b>117</b>	<b>97</b>

and camping activity. I found no Willets found in the Boettcher Lakes area, despite the extensive presence of apparently suitable habitat.

I found no Willets at the Browns Park NWR, Yampa River valley, or Antero Reservoir survey areas, despite the extensive presence of apparently suitable habitat. At Barr Lake there were no Willets and very little suitable habitat. There were five Willets at the northern end of Fruit Grower's Reservoir (Delta County), where there had been no confirmed breeding records of Willets, but where Rich Leivad (personal communication) had observed Willets during the breeding seasons of 1996 and 1997. On 6 June 1998, I observed a territorial pair of Willets at Fruit Grower's Reservoir, but, despite an extensive search, I was unable to locate a nest. I did see a downy, young shorebird near an adult Willet, but was unable to get a clear-enough view to identify it. On 17 July 1998, Tony Leukering (personal communication) observed a juvenile Willet in the company of an adult Willet at Fruit Grower's Reservoir, although the young bird was full-sized and able to fly. Andrews and Righter (1992) reported that by late July Willets occur as uncommon fall migrants in lowland areas of Colorado, thus it was not possible to determine whether the juvenile bird had hatched in the area. Based on the behavior of the adult birds and the juvenile,

however, it is likely that they nested at Fruit Grower's Reservoir; a more thorough survey of the area during the breeding season is needed to confirm whether Willets nest there.

I found Willets on breeding grounds in fairly large numbers, which indicates that the scarcity of Colorado breeding records for Willets is probably due, in large part, to a lack of prior monitoring efforts. I surveyed all historical Willet-nesting sites in Colorado; however, due to the narrow window of suitable survey time (approximately two months), I was unable to survey all of Colorado's lakes and wetlands. Future work will allow surveys of other sites in Colorado not previously known to be inhabited by nesting Willets, but where habitat appears suitable.

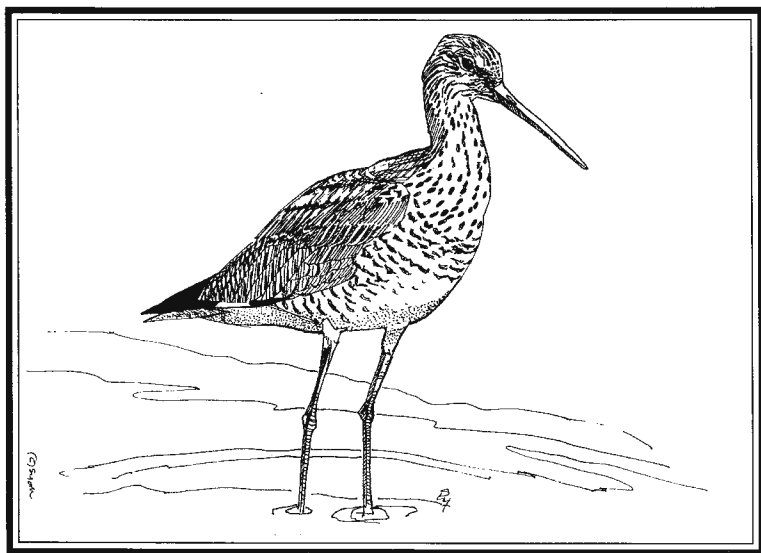
An annual survey of breeding Willets and their habitat would be important for understanding the dynamics of this species in Colorado. I found that Willets consistently used the same habitat type in each area surveyed, thus I would expect them to be sensitive to changes in that habitat. This may explain the absence of nesting Willets at sites used historically (e.g., Barr Lake). An extensive survey of the Barr Lake area in 1998 revealed that little or no suitable Willet habitat remains there, which may explain why there have been no records of Willets nesting at Barr Lake since 1936. Through annual surveys and accurate mapping of Willet breeding territories in Colorado, it will be possible to gain a better understanding of habitat changes and their effects on the abundance of nesting Willets.

### **Acknowledgments**

This study was part of a larger project, Colorado Birds Monitored by 2001, which is funded by the Great Outdoors Colorado Trust Fund (contract # 2183-98) through the Colorado Division of Wildlife. I would like to thank the many people and organizations that assisted me with this study: Tony Leukering, Mike Carter, and Scott Hutchings assisted with the design of this study; the staff of Arapaho NWR allowed me access to all wetland areas in the refuge and provided historical records of Willets in the area; Tom Goff allowed me access to Boettcher Lakes in North Park; Mike Bryant and Christopher Lapp at Browns Park NWR provided access to all wetland areas in the refuge, helped me locate all probable Willet breeding habitat, and provided a vehicle; Rich Levad, Kim Potter, and Coen Dexter all provided historical records of Willets in Delta and Moffat counties; Tony Leukering surveyed Antero Reservoir and Barr Lake; and Rich Levad helped with surveys in North Park and Browns Park NWR.

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Willet  
by Sherri York

**Appendix 1.** Scope of areas surveyed for Willets in Colorado, spring 1998.

<b>Survey Area</b>	<b>Description</b>
Arapaho NWR	
Auto Tour Road	19 small ponds, reservoirs, and irrigated grass meadows
Hwy 125	19 small ponds and reservoirs
Illinois River Basin	4 small reservoirs
MacFarlane Reservoir	1 large reservoir
Hebron Waterfowl Area	
18 Island Reservoir	1 large, shallow reservoir
County Road 34	7 small reservoirs
Walden Reservoir	
Walden Reservoir	1 large reservoir
County Road 12 W	3 small reservoirs
Delaney Butte/Lake John	
North Delaney Butte Lake	1 large reservoir
South Delaney Butte Lake	1 large reservoir
East Delaney Butte Lake	1 large reservoir
County Road 20	2 small reservoirs
Lake John	1 large reservoir
Alkali Lake	1 large reservoir
County Road 12 W	2 small reservoirs
Cowdry Lake	
Cowdry Lake	1 large reservoir
County Road 6 W	2 small ponds
Boettcher Lakes	3 large reservoirs
Browns Park NWR	
Flynn Bottom	1 large wetland
Nelson Bottom	1 large wetland
Butch Cassidy Lake	1 large lake
Hog Lake	1 large lake
Hoy Bottom	1 large wetland
Fruit Grower's Reservoir	1 large wetland
Yampa River valley	
County Road 17	1 riparian wetland
Deerlodge Park	1 riparian wetland
Barr Lake	1 large reservoir
Antero Reservoir	1 large reservoir





## **BIRD SPECIES AND SUBSPECIES DISCOVERED FOR SCIENCE IN COLORADO**

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### **Introduction**

The purpose of this paper is to identify the bird species and subspecies discovered for science in Colorado. A scientific discovery is the first time a species or subspecies is collected and officially documented, thus becoming the "type specimen," as recognized by the fifth and seventh editions of the *American Ornithologists' Union (AOU) Check-list of North American Birds* (AOU 1957, 1998). This paper also evaluates the historical source information to pinpoint as closely as possible the locations ("type location") and dates of Colorado discoveries. A biography is also included for the principal discoverers / describers of species and subspecies so the reader gains a better historical perspective on how type specimens were discovered in Colorado.

Nine species previously unknown to science were documented in present-day Colorado between 1820 and 1874, and 15 subspecies were documented between 1820 and 1939. Seven of the nine species were collected and described by members of Major Stephen Long's 1820 Expedition--Thomas Say described six of those seven. Since publication of the fifth edition of the *American Ornithologists' Union Check-list of North American Birds* (AOU 1957), several new sources of information have surfaced, making type locations and dates of discovery more precise.

### **Events and Circumstances that Lead to Discovery of New Species on Long's 1820 Expedition**

After the United States purchased the Louisiana Territory from France in 1803, expeditions were launched to explore the newly acquired territory. One mission of Long's expedition was to define the western border of the Louisiana Territory. In Colorado, his was the first expedition to include "trained" naturalists.

By default, Edwin James, the expedition's botanist, geologist, and surgeon, became official author of the journals for Long's 1820 Expedition, *Account of An Expedition from Pittsburgh to the Rocky Mountains, Performed in the Years 1819 and 1820, Under the Command of Major Stephen H. Long* (James 1823). Although wonderfully written, James' journals were sometimes a little vague as to precisely where Long's expedition was at any given time. Long and Say added notes and footnotes, but most abridged editions of James' account left

out Say's very important ornithological footnotes. When he wrote the journals, James was not privy to the journals of Captain John R. Bell, who had been appointed by Long to be the expedition's official journalist. Bell was a graduate of the United States Military Academy at West Point, consequently he was far better trained in the calculations of direction and distance than James, who had been trained in the natural sciences. Bell's journals were never published (Evans 1997), but they surfaced mysteriously 134 years later (in 1957); after that, most publications concerning Long's 1820 Expedition incorporated notes found in Bell's journals (Nichols and Halley 1995).

Goodman and Lawson (1995) wrote *Retracing the Major Stephen H. Long's 1820 Expedition*, which focused on the expedition's botanical discoveries. They physically retraced the expedition's route, meticulously checking and rechecking mileages and compass bearings against the accounts of James and Bell. They also compared recent photos of key locations with paintings by Samuel Seymour, the expedition's landscape artist. As a result, Goodman and Lawson were able to describe the expedition's route more precisely. Using this information, as well as the natural histories found in both James' (1823) and the Evans' (1997) accounts, we pinpointed more accurately the type locations and dates of discovery for the seven new species discovered by Long's 1820 Expedition.

Because most of Say's journals, scientific documents, and specimens were stolen by three soldiers who deserted Long's expedition on 31 August 1820, some authors have implied that his descriptions may not be totally reliable (Evans 1997, Farrand 1991). While this probably cannot be discounted totally, Say was a trained scientist, he was founding father of the Philadelphia Academy of Natural Sciences, and he was associated with all the great American scientists of the day. In fact he is probably remembered most as the father of American descriptive entomology (Weiss and Ziegler 1931). We believe that, although Say may have reconstructed some details after the loss of his journals, it is inconceivable that he would fabricate information he couldn't remember. In our opinion, the circumstantial evidence laid out in James' and Bell's Journals, thoroughly checked and rechecked by Goodman and Lawson (1995), confirms the locations and dates of Say's descriptions.

By prior arrangement with Secretary of War, John C. Calhoun, all the natural history specimens collected during Long's expedition were deposited at Peale's Philadelphia Museum for the War Department (Sellers 1980). After 1846, many of the collections from Peale's Philadelphia Museum were sold for \$5000 to \$6000 to P.T. Barnum, who then divided the collection: part of it went to the Boston Society of Natural History, which sponsored the Boston Museum of Natural History (Davis 1994), and part went to Barnum's American Museum

in New York, which eventually was destroyed by fire (Smallwood 1941). The bird collection at the Boston Museum of Natural History was transferred to Harvard's Museum of Comparative Zoology, which still contains collection remnants from Peale's Philadelphia Museum (Davis and Jackson 1995). Bangs (1930), who wrote *Types of Birds Now in the Museum of Comparative Zoology*, did not list any specimens that were collected on Long's expedition. Neither are there any at the Philadelphia Academy of Natural Sciences (Leo Joseph, personal communication), and Stone (1889) stated that the type specimens described by Say and originally deposited in Peale's Philadelphia Museum have vanished. Based on this information, we concluded that the likelihood of there being one or more extant type specimens from Long's 1820 Expedition is remote.

**Bird Species and Subspecies Discovered in Colorado:**  
**Presented in Taxonomic Order According to the 1998 Edition of the**  
*American Ornithologists' Union Check-List of North American Birds*

**White-tailed Ptarmigan:** *Lagopus leucurus altipetens* (Southern White-tailed Ptarmigan) (Osgood 1901). Type location: "Mt. Blaine, Colorado" (AOU 1957); the type specimen, tag no. 69774, is housed at the U.S. National Museum, Washington, DC (Osgood 1901).

This subspecies was first collected by Charles E. Aiken on 3 September 1874, but not at Mt. Blaine, Colorado, which is how the type specimen was labeled and described by the *American Ornithologists' Union Check-List of North American Birds* (1957). According to Henshaw (1905), the specimen was collected on Summit Peak (37°21'N; 106°42'W), in northeast Archuleta County. He stated: "It is important that Summit Peak be recorded as the true locality of Aiken's specimens of ...*Lagopus leucurus*...." Henshaw (1905) explained this error by referring to a letter he received from Aiken, who stated that his White-tailed Ptarmigan specimens were from a mountain that later became known as Summit Peak. Apparently when Aiken was collecting in southern Colorado (Henshaw 1905), there was no name yet assigned to the mountain from which he had collected ptarmigan. At the time, Aiken was told by members the Wheeler Survey that the mountain would be named Mt. Blaine. According to Henshaw, however, "The name Mount Blaine was not bestowed by the Wheeler Survey upon 'Summit Peak' but subsequently was given to a high mountain in Ouray County which appears on the Hayden and other maps as Mount Sneffels." This problem is further confused by the fact that, according to Jacobs (1992), there is a Blaine Peak 1.3 kilometers (0.7 miles) north of Mount Sneffels. Blaine Peak would be 120 kilometers (75 miles) northwest of Summit Peak where Aiken was on 3 September 1874, while Mount Blaine

is 248 kilometers (154 miles) northeast of Summit Peak in the Platte River Mountains of Park County in central Colorado.

Aiken can rightfully be considered the "Father of Colorado Ornithology." His noteworthy Colorado collection, which he started in 1871, became the source for numerous publications dealing with the distribution of birds in Colorado. A large portion of his collection (6,800 skins), originally housed at Colorado College Museum in Colorado Springs, is now at the University of Colorado Museum in Boulder (Ewan 1950, Bailey and Niedrach 1965).

**Blue Grouse:** *Dendragapus obscurus* (James 1823). Type location: "near Defile Creek = about 20 miles north of Colorado Springs, Colorado" (AOU 1998); the type specimen is not extant (Stone 1889).

Both this species and the Band-tailed Pigeon were first discovered by Titian Peale (Mearns and Mearns 1992) on 9 July 1820 at a location now known as Perry Park in Douglas County (39°14'N, 104°60'W). Peale was the assistant naturalist for Long's expedition, and he was in charge of the natural history collections. Peale was engaged in most of the hunting for both specimens and food.

Goodman and Lawson (1995) believe that Long's expedition camped at Dawson Butte, Douglas County on the evening of 8 July 1820. On the morning of 9 July (James 1823), James, Peale, and Seymour traveled west to the mountains and then slightly south to what is now called Perry Park (Goodman and Lawson 1995). As James, Peale, and Seymour traveled towards Perry Park on 9 July 1820, it is conceivable that they first discovered the Band-tailed Pigeon in oak shrublands of the foothills where Bear Creek tumbles out of the mountains and through the park (Richard C. Beidleman, personal communication). As the explorers worked their way higher into the mountains, they probably encountered the Blue Grouse. When the party returned to camp that evening, Say then described the species in his notes.

According to Goodman and Lawson (1995), the Dawson Butte campsite is adjacent to Defile Creek (now known as Plum Creek). The type location for both the Blue Grouse and the Band-tailed Pigeon is Perry Park, 19 kilometers (11.8 miles) southwest of the location listed by the *American Ornithologists' Union Check-List of North American Birds* (1998). The original description for Blue Grouse was made by Say as a footnote in James' account (James 1823), and according to the account, the type specimen was originally deposited in Peale's Philadelphia Museum.

**Sharp-tailed Grouse:** *Tympanuchus phasianellus jamesi* (James' or Plains Sharp-tailed Grouse) (Lincoln 1917). Type location: "three miles west of Castle

Rock, Colorado" (AOU 1957); the type specimen, tag no. 4951, is housed at the Denver Museum of Natural History, Denver, Colorado (Phillips and Webb 1991).

An adult male was collected by A.H. Burns about five kilometers (3.1 miles) west of Castle Rock on 15 February 1916. The subspecies' name honors Harry C. James, "a veteran sportsman" (Lincoln 1917), who was also a trustee of the Denver Museum in the early part of the 20th Century.

**Gambel's Quail:** *Callipepla gambelii sanus* (Mearns 1914). Type location: "Olathe, Montrose County, Colorado" (AOU 1957); the type specimen, tag no. 236328 (adult male), is housed at the U.S. National Museum, Washington, DC (Deignan 1961).

Jesse D. Figgins sent a prepared specimen "...of this very distinct new subspecies..." to the U.S. National Museum in Washington, DC (Mearns 1914). It was collected by C. S. Slocum on 20 December 1912 at Olathe, Montrose County. The specimen was received from the Colorado Museum of Natural History (Denver Museum of Natural History) (tag no. 1210). Figgins was the director of the Colorado Museum of Natural History from 1910-1935 (Niedrach and Rockwell 1939).

**Northern Bobwhite:** *Colinus virginianus taylori* (Lincoln 1915). Type location: "Laird, Colorado" (AOU 1957); the type specimen, tag no. DMNH 4326, is housed at the Denver Museum of Natural History, Denver, Colorado (Phillips and Webb 1991).

An adult male was collected by Frederick C. Lincoln on 27 January 1915 at Laird, Yuma County, and it was named in honor of a Frank Taylor (Lincoln 1915). Lincoln was Curator of Ornithology at the Colorado Museum of Natural History from 1913-1919. He later served with the Federal Bureau of Biological Survey (Biological Survey), where he was appointed to administer their new banding program (Ewan 1950, Barrow 1998).

**Willet:** *Catoptrophorus semipalmatus inornatus* (Brewster 1887). Type location: "Larimer County, Colorado" (AOU 1957); the type specimens (syntypes), tag nos. MCZ 213,529 (male) and MCZ 213,530 (female), are housed at the Museum of Comparative Zoology at Harvard University, Cambridge, Massachusetts (Bangs 1930).

James M. Southwick of Providence, Rhode Island first noted that western specimens of the Willet differed from those found on the Atlantic Coast (Brewster 1887). William Brewster described two type specimens of this

subspecies from his personal collection: tag no. 13,529 (adult male), collected in Larimer County, Colorado on 14 May 1886, and tag no. 13,530 (adult female), Larimer County, Colorado on 5 May 1885 (Brewster 1887). Southwick was Curator of the Natural History Museum in Providence from 1896-1904.

**Band-tailed Pigeon:** *Columba fasciata* (James 1823). Type location: "small tributary of the Platte = Plum Creek, near Castle Rock, Douglas County, Colorado" (AOU 1998); the type specimen is not extant (Stone 1889).

Both this species and the Blue Grouse were first discovered by Peale (Mearns and Mearns 1992) on 9 July 1820 in a location now known as Perry Park in Douglas County (39°14'N, 104°60'W). For a detailed discussion of the adjusted type location, see the Blue Grouse account on page 18. The original description for the Band-tailed Pigeon was made by Say as a footnote in James' account (James 1823).

**Western Screech-Owl:** *Otus kennicottii aikenii* (Brewster 1891). Type location: "El Paso County, Colorado" (AOU 1957); the type specimen, tag no. 207503, is housed at Harvard's Museum of Comparative Zoology, Cambridge, Massachusetts (Bangs 1930).

For health reasons, Brewster traveled in 1882 from Cambridge, Massachusetts, to Colorado, where he encountered Aiken (Ewan 1950). Brewster (1891) stated that the screech-owl specimen was collected by Aiken on 29 May 1872. Apparently Aiken loaned or gave the specimen to Brewster, who explained that the specimen was an "...adult female number 7503, collection of William Brewster, El Paso County, Colorado" (Brewster 1891).

When the fifth edition of the *American Ornithologists' Union Check-List of North American Birds* (AOU 1957) was published, this owl was referred to only as Screech-Owl, *Otus asio aikenii*. In the sixth edition (AOU 1983), the Screech-Owl was split into two species, the Western Screech-Owl and the Eastern Screech-Owl. Based on the type location, we assume that Aiken's specimen was a subspecies of the Western Screech-Owl. Whether the two species are sympatric in El Paso County, Colorado, is not clear (Andrews and Righter 1992).

During his short life, Robert Kennicott, for whom this owl was named, added more specimens to the Smithsonian Institution's collection, both directly and indirectly, than any other naturalist (Mearns and Mearns 1992).

**Eastern Screech-Owl:** *Otus asio maxwelliae* (Ridgway 1877). Type location: "Mountains of Colorado = Boulder, Colorado" (AOU 1957); the type specimen,

tag no. 81893, is housed at the U.S. National Museum, Washington, DC (Deignan 1961).

From Robert Ridgway's description, it is confusing as to which screech-owl species this subspecies belongs. Ridgway (1877) described this subspecies from Mrs. Martha A. Maxwell's collection thus: "This race is a mountain bird and possesses the distinctive features of alpine or boreal races...." In Colorado, the Eastern Screech-Owl is only known from areas along the Platte River drainage in northeastern Colorado and along the extreme eastern portion of the Arkansas River drainage; it is not known to exist in the mountains east or west of the Continental Divide (Andrews and Righter 1992).

Ridgway was a respected systematic ornithologist of the late 19th and early 20th centuries. Spencer F. Baird appointed him Curator of Ornithology at the Smithsonian Institution in 1880. Many paid tribute to Ridgway by naming numerous subspecies after him (Palmer 1954). Maxwell was Colorado's first celebrated female ornithologist. In 1876, Ridgway invited Maxwell to Philadelphia and Washington to display her impressive collection of 234 bird species collected in Colorado. Ridgway was so impressed that he wrote a book about her collection. Unfortunately, after her death in 1881, the collection deteriorated from neglect before it could be housed adequately in a proper museum (Benson 1986).

**Burrowing Owl:** *Athene cunicularia hypugaea* (Bonaparte 1825). Type location: "Western United States = Plains of the Platte River" (AOU 1957); the type specimen is not extant (Stone 1889).

At the campsite along Fountain Creek sometime between 12-15 July 1820, a Burrowing Owl was captured and described by Long's expedition "naturalist" (Evans 1997). There is some controversy over the exact location of the Fountain Creek encampment for the nights of 12-16 July. According to Goodman and Lawson (1995) and Beidleman (personal communication), James' account (James 1823) described the camp at the southern edge of Colorado Springs. Bell's account, however, described the camp about three kilometers (1.8 miles) south of the town of Fountain or about 13 kilometers (8 miles) south of the location described by James. The compass readings taken by Lieutenant William Swift, the assistant topographer on Long's expedition, from the encampment to the top of Pikes Peak, and his mileage reading to Manitou, corroborate Bell's descriptions of the location in his journals. They also generally concur with readings taken by modern-day instruments (Goodman and Lawson (1995). We feel that the preponderance of evidence, as laid out by Goodman and Lawson, favors the location 13 kilometers (8 miles) south of the town of Fountain (38°40'N, 104°41'W).

The first discovery of the Burrowing Owl being actually took place in Chile in 1782, 38 years earlier than Long's 1820 Expedition. Nevertheless, we included this subspecies in our discussion because, according to the fifth edition of the *American Ornithologists' Union Check-List of North American Birds* (1957), the *A. c. hypugaea* subspecies from North America was described first by Bonaparte (1825), with the type location "Plains of the Platte River." Beidleman (personal communication) believes that Bonaparte was referring to the 12-15 July descriptions along Fountain Creek, and that the reference to the Platte River was merely a regional geographic definition. Bonaparte used information obtained on Long's expedition to describe this new subspecies.

On 1 August 1820, just as Long's expedition was about to cross the present-day Colorado / Kansas state line, more Burrowing Owls were noted. Again on 7 August, outside the boundaries of Colorado, Peale collected and sketched an adult Burrowing Owl and its chick (Evans 1997). The Burrowing Owl may have been observed before the 12-16 July encampment but was simply noted as "owl." The owl's haunts and habits were described further on page 37, Vol. 2 of James' account (James 1823).

According to Haug et al. (1993), there are as many as 18 recognized subspecies of Burrowing Owls. They state: "None [have been] critically evaluated with modern systematic methods, but most are geographically distinct and presumably isolated." This suggests that the North American subspecies someday may be reclassified as distinct from the Chilean population, in which case the location along Fountain Creek may very well qualify in the future as the type location for a new species of Burrowing Owl.

**White-throated Swift:** *Aeronautes saxatalis sclateri* (Rogers 1939). Type Location: "Loveland, Colorado" (AOU 1957); the type specimen, tag no. 302514, is housed at the Field Museum of Natural History, Chicago, Illinois (David Willard, personal communication).

William H. Osborne collected a male (original tag no. 836) at Loveland, Colorado, on 26 May 1890. After examining the specimen, Henry Coale noticed that it "...appears to be larger than Ariz. bird." This specimen--with Coale's notations and tag no. 10300--subsequently went all the way to the Princeton Museum of Zoology in Princeton, New Jersey. Charles Rogers, the museum's Curator (Davis and Jackson 1995), compared the specimens to an assortment of White-throated Swift specimens and concurred with Coale. Rogers reclassified it as a new subspecies and named it after William L. Sclater, Director of the Colorado College Museum in Colorado Springs and author of *Birds of Colorado* (Sclater 1912). Osborne was founder and president of the Illinois Central Railroad Company and evidently had an interest in birds (Ewan 1950).



Coale lived in Illinois and acquired a collection of more than 11,000 North American birds (Palmer 1954).

**Hairy Woodpecker:** *Picoides villosus monticola* (Anthony 1898). Type location: "Boulder County, Colorado" (AOU 1957); the type specimen, tag no. 3625, is housed at the Carnegie Museum in Pittsburgh, Pennsylvania (Anthony 1898).

Alfred W. Anthony collected a Hairy Woodpecker somewhere in Boulder County on 27 December 1892. Originally, he assigned the trinomial *P. v. montanus* to this subspecies (Anthony 1896, 1898). Anthony lived in Denver from 1868-1886; he was a mining engineer as well as an excellent field naturalist. The majority of his vertebrate collections are at the Carnegie Museum in Pittsburgh (Ewan 1950).

**Say's Phoebe:** *Sayornis saya* (Bonaparte 1825). Type location: "Arkansas River, about 20 miles from the Rocky Mountains = near Pueblo, Colorado" (AOU 1998); the type specimen is not extant (Stone 1889).

Charles L. Bonaparte, a nephew of the emperor Napoleon Bonaparte, was not on Long's expedition, but he first described this phoebe from a male specimen collected by Peale on 17 July 1820. The original description was published in *American Ornithology* (Bonaparte 1825). In 1854, Bonaparte created the phoebe genus and named it *Sayornis* after Say. According to Peale's manuscript (which was made available to Bonaparte), the bird "...first called attention to its nest, which was built on a tree and consisted chiefly of moss and clay...young birds were... just ready to fly."

Peale was in the vicinity of Long's expedition campsite at Turkey Creek and the Arkansas River on 17 July, thus we believe that the campsite location is also the type location. The campsite is roughly 32 kilometers (20 miles) from the mountains and about 19 kilometers (12 miles) from present-day Pueblo, Colorado (38°17'N, 104°50'W).

**Western Kingbird:** *Tyrannus verticalis* (James 1823). Type Location: "Ash River, near Rocky Mts. = La Junta, Colorado" (AOU 1998); the type specimen is not extant (Stone 1889).

On 20 July 1820, Long's expedition camped about four kilometers (2.5 miles) southwest of Olney Springs in Crowley County (38°08'N, 103°58'W) (Goodman and Lawson 1995). At this campsite, one of the naturalists collected a flycatcher. In describing this flycatcher, Say declared: "We can hardly think it a new species, yet in the more common books we do not find any distinct description of it... in addition to other essential characters it is distinguished...

by yellow belly... simplicity of the wing and tail... absence of bands on side of head...." (James 1823). Evans (1997) agreed: "It seems odd that they [Say and Peale] had not encountered this species sooner, as it is a common and widely distributed western bird." Beidleman (personal communication) explained "...it is entirely possible that the kingbird was seen earlier by the naturalists but not distinguished... [due to] the lack of our present-day, high-powered binoculars and excellent field manuals." The original description was made by Say as a footnote in James' account (James 1823).

**Rock Wren:** *Salpinctes obsoletus* (James 1823). Type location: "Northern part of Douglas Co., Colorado, near junction of Plum Creek with South Platte River" (AOU 1998); the type specimen is not extant (Stone 1889).

This new wren species was most likely first detected by Say or Peale on 6-7 July 1820, at or near the location of Long's expedition encampment. This campsite was about 0.3 kilometers (0.2 miles) from the south side of the mouth of present day Waterton Canyon, Douglas County (39°29'N, 105°05'W), where the South Platte River disgorges its torrents of water from the Rocky Mountains onto the Great Plains. Say, who made the original description of the Rock Wren as a footnote in James' account (James 1823), described the activities of the wren as: "...often seen hopping about on the branches... and trunks [of juniper]... at the campsite." The campsite at Waterton Canyon would be about 6.4 kilometers (four miles) southwest of the type location described by the *American Ornithologists' Union Check-List of North American Birds* (AOU 1998).

Beidleman (personal communication) concurred with the campsite location, but he further refined the description: "...in the valley just west of the dominating Dakota sandstone hogback with the Morrison formation on the lower slope immediately to the west." Benson's (1988) version of James' account (James 1823) stated that the campsite: "...is covered with fine and short grass, and varied with here and there a copse of small oaks... [and] columnar masses of white sandstone, twenty or thirty feet high [6-9 meters], standing remote from each other, having the debris around their bases...." Today their campsite would appear too vegetated for Rock Wren haunts, but a photo of Seymour's painting, "A View from the Chasm," depicts a less vegetated and considerably more inviting habitat for this wren.

While it's conceivable that Say explored south and west along the hogbacks before he discovered the wren, it's inconceivable that he could have ventured north of the Platte River because it was barely passable at that time due to its width, depth, and stream flow. Four of the men did cross the river but only

after one of them, who happened to be a good swimmer, swam with a rope in his teeth across to the north side.

**Veery:** *Catharus fuscescens salicicola* (Ridgway 1882). Type location: "Fort Garland, Colorado" (AOU 1957); the type specimen, tag no. 79460 (adult female), is housed in at the U.S. National Museum Washington DC (Deignan 1961).

In describing this subspecies, Ridgway (1882) recognized how *C. f. salicicola* was more similar in some ways to *C. u. ustulatus*, the nominate race of the Swainson's Thrush, than it was to *C. f. fuscescens*, the nominate race of the Veery. In describing his choice for the trinomial, Ridgway declared: "I have called this new form *C. f. salicicola* on account of its marked predilection for willow thickets.... [found] along the streams in the valleys and lower cañons of the Rocky Mountains...." The Latin meaning for "sali" and "col" mean "willow" and "dwell," respectively (Borror 1960), thus Ridgway accurately depicted this subspecies' preferred summer habitat in Colorado (Andrews and Righter 1992).

Henry W. Henshaw, the natural history collector assigned to the Wheeler Survey, collected the type specimen for this subspecies on 19 June 1873 while stationed at Fort Garland (formerly Fort Massachusetts) (Ewan 1950, Deignan 1961). Henshaw (1875) authored a paper in volume five of the eight-volume *Report Upon the Geographical and Geological Explorations and Surveys West of the 100th Meridian, in California, Nevada, Nebraska, Utah, Arizona, Colorado, New Mexico, Wyoming, and Montana Under the Direction of Brigadier General A.A. Humphreys, Chief of Engineers, U.S. Army*. At the time, volume five was the most detailed report on birds of the Southwest (Welker 1955). Henshaw later became the second Chief of the Biological Survey from 1910-1916 (Ligon 1961).

**American Pipit:** *Anthus rubescens alticola* (Todd 1935). Type location: "Estes Park, Colorado" (AOU 1957); the type specimen, tag number 16748, is housed at the Carnegie Museum, Pittsburgh, Pennsylvania (Todd 1935).

An adult female specimen was sent to the Carnegie Museum in Pittsburgh, Pennsylvania. It was collected by Richard C. McGregor in Estes Park, Colorado, on 20 July 1893 (Todd 1935). McGregor is best known for his interest in the Philippines, where he was Editor of the *Philippine Journal of Science* and published a checklist of birds of the Philippines (Palmer 1954).

**Yellow-rumped Warbler:** *Dendroica coronata memorabilis* (Audubon's race) (Oberholser 1921). Type location: "Ward, Boulder County, Colorado" (AOU

1957); the type specimen, tag no. 13741, is housed at the U.S. National Museum, Washington, DC (Deignan 1961).

With the taxonomic "lumping" of Audubon's Warbler and Myrtle Warbler (AOU 1983), the type specimen referred to here, originally classified as *Dendroica auduboni memorabilis*, became a subspecies of *D. coronata*. Although this subspecies, *D. coronata memorabilis*, technically no longer qualifies as a subspecies for the purpose this paper, we have included it because historically it was described as a separate subspecies.

On 12 June 1893, an adult male was collected near Ward, Colorado, by John A. Loring while he was collecting for the Biological Survey (Oberholser 1921). Loring was a professional collector whose many collecting trips included participation on a Smithsonian Institution-sponsored trip to East Africa in 1909. One of his fellow collectors on that expedition was President Theodore Roosevelt (Mearns and Mearns 1997, Palmer 1954).

**Canyon Towhee:** *Pipilo fuscus mesatus* (Oberholser 1937). Type location: "Baca County, Colorado" (AOU 1957); the type specimen, tag no. 204013 (adult female), is housed in the Biological Survey section of the U.S. National Museum, Washington, DC (Deignan 1961).

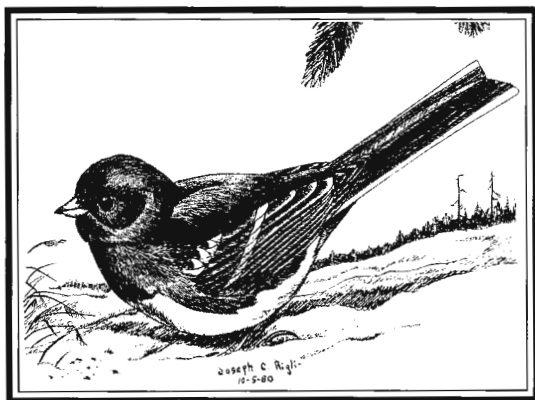
Merritt Cary collected an adult female in southeastern Colorado for the Biological Survey. The specimen was collected at Gaume's Ranch, 1380 meters (4527 feet) in elevation, in the northwest corner of Baca County, Colorado, on 27 November 1907. Cary's original specimen number was 290 (Oberholser 1937).

Cary was in charge of the Biological Survey's expeditions in Colorado from 1905-1909. Although he was a mammalogist, he collected all kinds vertebrates. He was the author of *North American Fauna No. 33*, a biological survey of Colorado (Cary 1911), which biologists still consider a classic for its description of Colorado's physical features, as well as its presentation of the state's natural history. Harry C. Oberholser, who described this subspecies, exercised an extraordinary level of detail when he classified many new species, forms, or subspecies. Perhaps his best-known publication was *The Bird Life of Texas*, in which his keen sense of morphological differences between geographical populations is clear. For many years he worked with and, no doubt, was influenced by Ridgway. His many professional associations included the U.S. National Museum and the Cleveland Museum of Natural History (Aldrich 1968).

**Dark-eyed Junco:** *Junco hyemalis aikenii* [White-winged Junco] (Ridgway 1873). Type location: "Fountain, Colorado" (AOU 1957); the type specimen,

tag no. 61302 (adult male), is housed in the U.S. National Museum, Washington, DC (Deignan 1961).

In the fifth edition of the *American Ornithologists' Union Check-List of North American Birds* (AOU 1957), this subspecies was listed as a species, *Junco aikeni*; in the sixth edition (AOU 1983) the White-winged Junco was reclassified as a subspecies of the Dark-eyed Junco (*Junco hyemalis*).



Dark-eyed Junco (white-winged race)  
by Joseph Rigli

Ridgway (1873) originally described this subspecies from one of the specimens sent to him by Aiken, who had collected several near Fountain, El Paso County, Colorado, on 11 December 1871 (Deignan 1961). More specifically, Beidleman (personal communication) believes that the type specimen was collected in the vicinity of Barnes Canyon, which is near Aiken's original homestead and now known as Aiken Canyon. Barnes Canyon is approximately 16 kilometers (10 miles) northwest of the Fountain location in the foothills. Aiken pointed out: "During winter only males were seen, but in the spring, the females were most numerous."

**Lazuli Bunting:** *Passerina amoena* (James 1823). Type location: "Rocky Mountains, source of the Arkansas = near Cañon City, Colorado" (AOU 1998); the type specimen is not extant (Stone 1889).

The evidence supports the type location (38°25'N, 105°13'W) described in the *American Ornithologists' Union Check-List of North American Birds* (AOU 1957). In accounts by both James (1823) and Bell (Nichols and Halley 1995), the encampment of Long's expedition on the nights of 16-19 July was near the confluence of Turkey Creek and the Arkansas River. In Seymour's watercolor painting, "View on the Arkansas, near the Rocky Mountains," he depicted a scene on the opposite side of the river from the encampment. Photos taken by Goodman and Lawson (1995) of the same scene in July 1984 confirm this site as the mouth of Turkey Creek and the Arkansas. The original description of this species was made by Say as a footnote in James' account (James 1823). James, Bell, Corporal Parish, and Abraham Ledoux departed from camp on

the morning of 17 July and followed the Arkansas River into the mountains. They camped that night at Cañon City, 45 kilometers (28 miles) from the Turkey Creek base camp and in the vicinity of the present-day Colorado State Penitentiary (Goodman and Lawson 1995). More specifically, Beidleman (personal communication) believes that the bunting may have been discovered in the general area of where the Say's Ground Squirrel (now called the Golden-mantled Ground Squirrel) and the Colorado Chipmunk were first encountered along a brushy hillside near the Arkansas River in the vicinity of Cañon City. This corroborates Evans' (1997) interpretation of where the squirrel and chipmunk were first discovered.

**Black Rosy-Finch:** *Leucosticte atrata* (Ridgway 1874). Type location: "Cañon City, Colorado" (AOU 1998); one of the original five type specimens (syntypes) is housed in the Museum of Comparative Zoology at Harvard University, Cambridge, Massachusetts (tag number information not made available), and two are at the U.S. National Museum, Washington, DC, including the Uintah Mountain specimen described below, tag no. 60638, (original tag no. 5530) and Aiken's specimen (also described below), tag no. 162695; two syntypes are missing (Deignan 1961). The first discovery of a species does not always qualify it to be the official type for the species; the Black Rosy-Finch is an example of this.

According to Sclater (1912), Aiken collected four rosy-finches in the region around Cañon City (38°25'N, 105°13'W) on 18 and 20 April 1874. Suspecting that these finches might be new to science, he sent the specimens to Ridgway, who pronounced in the *American Sportsman* magazine on 18 July 1874 that indeed Aiken's rosy-finches did represent a species new to science. In the same article, however, Ridgway also stated that on 20 September 1870, almost four years earlier than Aiken's discovery, one of the naturalists assigned to the Hayden Survey had collected a "young" rosy-finch in the Uintah Mountains (Ridgway 1874). Ridgway did not point out in his article whether the 20 September specimen was collected in the Utah or Colorado part of the Uintahs. He cast a degree of doubt on the Uintah specimen by stating: "...though doubt is there expressed as to it being referable to that species [*L. leucosticte*]." Deignan (1961) cleared this up by stating that the site was on the "north side of the Uintah Mountains, Summit County, Utah," and the specimen was "...collected by H.D. Schmidt, who was a member of the U.S. Geological Survey [tag no. 553]." The specimen was deposited in the U.S. National Museum in Washington, DC. Deignan (1961) further stated that Ridgway named the Black Rosy-Finch, "...based upon a series of two males and three females [four from Aiken plus the Utah specimen]." Ridgway chose a distinguishable male from one of the four Aiken specimens as the type specimen and sent Aiken's other specimens back to him.

Richard C. Banks (personal communication) believes that in 1876 or 1877, Aiken gave or sold one of his Black Rosy-Finches to the Boston Society of Natural History but kept the others. Ridgway probably realized the value of type specimens in the intervening years and purchased from Aiken a type specimen for \$25 in 1897 or 1898.

**Brown-capped Rosy-Finch:** *Leucosticte australis* (Ridgway 1874). Type location: "Mt. Lincoln, Colorado" (AOU 1998); the type specimens (syntypes), tag nos. 15724 (male) and 15721 (female), are housed at Harvard's Museum of Comparative Zoology, Cambridge, Massachusetts (Bangs 1930).

The Brown-capped Rosy-Finch was first presented for science by Baird and Ridgway at a meeting of the Essex Institute in Salem, Massachusetts, on 17 November 1873. A male (No. 963) and female (No. 960) were collected by Joel A. Allen while he was spending the summer of 1871 in Colorado. Baird and Ridgway stated that both Brown-capped Rosy-Finches were collected on Mt. Lincoln, Park County, on 25 July 1871, "....above the timberline, at an altitude of about 12,000 feet [3600 meters]."

It was Allen, with Elliott Coues and Brewster, who conceived of and organized the institution later known as the American Ornithologists' Union. On 26 September 1883, Allen served as the organization's first president (Cutright and Brodhead 1981). Allen was also the first curator for the new Zoology Department at the American Museum of Natural History (Davis and Jackson 1995). He is further known for postulating Allen's Rule, which states that protruding parts of warm-blooded animals are relatively shorter in the colder part of a species' range than in the warmer part (Art 1993). Allen (Beidleman, personal communication) authored the first comprehensive scientific articles on Colorado's birds and mammals.

**House Finch:** *Carpodacus mexicanus frontalis* (James 1823). Type location: "Arkansas River near the Mountains = near Colorado Springs, Colorado" (AOU 1957); the type specimen is not extant (Stone 1889).

Long's expedition encampment for 12-16 July 1820 was 13 kilometers (8 miles) south of the town of Fountain (38°40'N, 104°41'W), and it was there that this subspecies of House Finch was discovered. Although the type specimen for the species was first described in 1776 from a specimen collected somewhere from the "Valley of Mexico," *C. m. frontalis* is the first type description for the subspecies in North America. The original specimen was deposited in Peale's Philadelphia Museum (James 1823).

The Burrowing Owl, this subspecies of the House Finch, and the Lesser Goldfinch were all discovered in the same time period and location. Please

refer to the Burrowing Owl account on page 21 for a detailed discussion of the location (Long's expedition encampment for 12-16 July 1820).

**Lesser Goldfinch:** *Carduelis psaltria* (James 1823). Type location: "Arkansas River near the Mountains = near Colorado Springs, Colorado" (AOU 1998); the type specimen is not extant (Stone 1889).

While at Long's expedition encampment for 12-16 July 1820, Say noted, "...a very pretty little bird... hopping about in the low trees or bushes, singing sweetly somewhat in the manner of the American Goldfinch." This statement indicates that Say both discovered and described this new species; the original description was made by Say as a footnote in James' account (James 1823). The original specimen was deposited in Peale's Philadelphia Museum.

The Burrowing Owl, a subspecies of the House Finch, and the Lesser Goldfinch were all discovered in the same time period and location. Please refer to the Burrowing Owl account on page 21 for a detailed discussion of the location (Long's expedition encampment for 12-16 July 1820).

### **Species Discovered in the 18 Western States: Colorado's Ranking**

Of the eighteen states west of the 100th Meridian, Colorado ranks fifth among them in terms of the number (nine) of bird species first discovered and collected for science in those states. Of the interior western states not bordered by another country, Colorado ranks first.

One can only wonder how many more new species would have been discovered in Colorado first if Thomas Jefferson had known that Alexander Wilson requested to join Zebulon Pike's expedition as a naturalist (Cantwell 1961, Jackson 1966, Welker 1955). The Pike Expedition of 1806-1807 spent months exploring the Arkansas River drainage in the southeast quadrant of Colorado, where no previous U.S. Government-sponsored exploration had ever taken place. Unfortunately, no naturalist was assigned to Pike's expedition and, consequently, no new species of birds were documented for that region, which we now know is extremely rich in avian diversity.

### **Conclusion**

By re-evaluating older reference material in relation to more recent information, we feel that this paper elucidates and refines information related to the discoveries of new bird species and subspecies in Colorado. We also reconfirm many type locations and suggest revisions of other type locations as outlined in the fifth and seventh editions of the *American Ornithologists' Union Check-List of North American Birds* (AOU 1957, 1998).



### **Recommended Reading on Discoveries of Bird Species in Colorado**

Thompson G. Marsh's Master's thesis, *a History of the First Records of All the Birds Reported to Have Been Seen within the Present Boundaries of the State of Colorado Prior to Settlement* (Marsh 1931), focuses on the discovery of birds that were new to Colorado's list of avifauna (i.e., not necessarily documented and collected for science) prior to settlement. Marsh also listed in chronological order (by date) when the species were added to Colorado's avifaunal list. A summary of Marsh's work subsequently was published in the *Colorado Field Ornithologist* (Marsh 1968).

Robert B. Rockwell's paper, *The History of Colorado Ornithology* (Rockwell 1909), gives a review of the various explorations, individual explorers, and ornithologists that traveled through and worked in Colorado. It also describes which individuals added new species to Colorado's avifaunal list.

### **Acknowledgments**

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"White-tailed" Common Grackle  
by John W. Colvin

California Condors on Grand Mesa, Colorado  
by Jim Viets



**CALIFORNIA CONDORS MAKE OVERNIGHT VISIT  
TO GRAND MESA, COLORADO**

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At noon on 25 August 1998, Jim Viets of Ouray arrived at the Lands End Observatory on Grand Mesa. Perched at 3024 meters (9920 feet) in elevation, Lands End offers spectacular views to the north, west across Grand Valley, and south. Jim was there under contract with the U.S. Forest Service (USFS) to evaluate the historical value and renovation potential of a small, two-room log cabin, which is known as the Lands End "observatory" and used as a visitor center. Upon emerging from his vehicle, Jim saw three rather large birds soaring overhead. His first thoughts were golden eagles. That notion was quickly dispelled, however, as the birds landed on the cabin roof. Their unfeathered heads gave them away as something from the vulture family. He also noticed that each bird wore a radio transmitter and a numbered identification tag; these birds were "16, 22, and 23."

Jim and Bob Carpenter, a seasonal USFS employee stationed at Lands End, looked up vultures in one of the bird field guides available in the visitor center. Soon, they knew they were looking at something unusual. Based on the birds' sizes, field marks, and flight characteristics, they identified the birds as juvenile California Condors (*Gymnogyps californianus*). That was the easy part. Now they had to convince someone that they were actually seeing California Condors on Grand Mesa.

There are no phones at Lands End, but Bob was expecting Kim Ralston, a volunteer coordinator for the USFS, to arrive within a couple of hours. Bob knew that Kim had a cell phone, which they could use to call the Colorado Division of Wildlife (CDOW) or U.S. Fish and Wildlife Service (USFWS) about their discovery. While they waited, the condors perched on the cabin's roof and window sills, where it appeared as though they were seeking shelter under the eaves of the cabin rather than "looking at their reflections in the window" as reported in the newspapers last August. They also perched on the rock wall along the cliff that drops off to Grand Valley below. While Jim was inside the cabin, one of the condors actually walked into the cabin, but it went back outside when it saw him in there.

When Kim arrived, they made 10± phone calls about the condors, none of which resulted in getting anyone's attention. The calls were greeted with much skepticism. "Are you sure they're not Turkey Vultures" (*Cathartes aura*)? "How about Sandhill Cranes" (*Grus canadensis*)? (Author's disclaimer: I did not get a call, but wish I had!) Finally, Kim contacted Barb Osmundson with the USFWS and convinced her that there were California Condors on Grand Mesa. Barb contacted Shawn Farry of The Peregrine Fund in Arizona, and learned that condors 16, 22, and 23 were members of the Arizona-based project to reintroduce condors to the wild. Shawn explained that on 23 August, two days prior to their appearance at Grand Mesa, condors 16, 22, and 23 had ventured northward from the Vermillion Cliffs release site in north-central Arizona, heading for "points unknown."

In the meantime, about 40 visitors came to Lands End that afternoon, and they received a real treat. When lots of people were there at one time, the condors tended to back away, perching on the roof or the rock wall so they could get into the air quickly if necessary. Jim Viets reported that most visitors were willing to keep some distance between themselves and the birds, with the exception of a group that tried to get their pictures taken with the condors. They even attempted to feed a potato chip to one of the condors (fortunately, the condor showed no interest). When another member of the same group was about to throw a rock at one of the birds to make it fly for a photograph, Jim and Bob had to intervene.

The condors stayed around all afternoon and into the evening, occasionally taking flight, soaring into the sky and disappearing, but always returning within 30 minutes. Although the visitor center closed at 4:00 p.m., Jim Viets remained until 7:40 p.m. to finish his work. The condors remained as well, sitting on the roof, watching Jim take his measurements and notes. As Jim moved around the building, the birds moved around with him, watching his every move, even looking over the eaves to keep an eye on him. (Picture the Peanuts cartoon character, "Snoopy," doing his vulture imitation!) Jim believed that the birds were interested in the building itself as opposed to the human activity going on there, but they did seem quite interested in him when he had his clipboard. Did a guy with a clipboard remind the birds of the Peregrine Fund biologists in Arizona?

The condors apparently roosted nearby overnight, because the next morning Renzo DelPiccolo, the CDOW's District Wildlife Manager in the Plateau Valley, went to Lands End and found the condors at the cabin. He then called and reported his find to CDOW and USFWS offices in the valley below, triggering a wild scramble of people from those offices towards Lands End. They, including your author, were too late, however. By 11:00 a.m., the birds had taken flight and did not return. On 27 August, Barb Osmundson received word that condors 16, 22, and 23 had returned to the release site in Arizona at 1:00 p.m. that day. They had covered the 402 kilometers (250 miles "as the crow flies," perhaps more "as the condor soars") from Lands End in about 24 hours!

This was not the first, or even the farthest wandering of condors from the Arizona release site. On 31 July 1998, Condor 19 disappeared from the rest of the group and was not seen again by Peregrine Fund biologists until 12 August near the Henry Mountains of southeastern Utah. Subsequently, The Peregrine Fund received a call from Loren Casterline, leader of Varsity Scout Troop 1834, who said that the troop had encountered condor 19 on 6 August at Kingfisher Island (the southern end of Flaming Gorge Reservoir in northeastern Utah), some 310 miles from the release area. Another condor visited the Moab / Arches National Park area of Utah in August 1997.

The condors' wanderings have greatly enlarged their world, as well as that of Peregrine Fund biologists tracking them. Many Colorado Plateau birders were aware of and interested in the Arizona release project, but perhaps they never considered that the condors would wander much farther north than southern Utah. In retrospect (hindsight is 20-20), it shouldn't really surprise anyone that a bird with nearly a 3.5-meter (10-foot) wingspan, specialized for soaring on thermals and topographic uplifts, would have much trouble covering a lot of country in a relatively short time.

Why do these birds seem so tame? Some of it may have to do with the release process itself, as well as the fact that the condors are not yet very independent. Project biologists must provide food (animal carcasses) for the birds in and around the release area until they can feed themselves adequately. Occasionally, the condors are baited into their holding pens for health and weight checks (conducted by humans with clipboards, no doubt). In fact, it may have been the structure of the cabin and its associated human activities that caused the birds to pause at Lands End and look for a free lunch. Another aspect of their apparent tameness may be related to an innate curiosity; because they are carrion feeders, they're always on the lookout for dead animals (or waiting around for something to die?). They also tune in to the activities of other birds, particularly other scavengers like Common Ravens (*Corvus corax*), which are common at Lands End.

What is the long-term outlook for the California Condors of the Colorado Plateau? Shawn Farry, who manages The Peregrine Fund's release project in Arizona, expressed optimism for the immediate future. The project started with the release of six condors (four females and two males) on 29 October 1996. Five of those birds had hatched at the Los Angeles Zoo and the sixth had hatched at The Peregrine Fund World Center for Birds of Prey in Idaho. When they were six to seven months old, they were transported to the Vermillion Cliffs release site and placed in holding pens, where they were fed until their release on 12 December. Subsequently, 13 more birds were released in 1997. Shawn is pleased that 14 of the 19 condors continue to soar in the release area. The causes of death among the other five birds include lethal encounters with golden eagles and power lines; for some, the cause of death or disappearance remains unknown. In November 1998, nine more condors were released to join the 14 survivors, and, as I write this article, there are 23 condors soaring the Arizona skies. There is another release project in California, where 15 condors have become established in the Los Padres National Forest and five cruise over the Big Sur area to the north.

The outlook appears good for most of the birds to survive and reach sexual maturity at five years of age. According to Shawn, however, reliable reproduction may not occur until the birds are about seven years old. What rate of reproductive success can be expected is anyone's guess at this point. Considering that the entire population of California Condors has descended from very few birds, concern about a genetic "bottleneck" also lurks in the background.

Even if successful breeding in the wild occurs, it will take a long time for the population to grow without additional releases of captive-bred birds. Condors can produce a clutch of one egg each year, but it takes six months for chicks to



fledge, and they may depend on the adults for up to six months longer. Therefore, the condors may not breed every year. Averaging less than one egg per year is not a prescription for rapid population growth, to say the least! Offsetting this low reproductive rate is the species' potential for a long life. The oldest condor alive today--one of the captive birds--is 45 years old. Yet, longevity still was not enough to keep them from almost going extinct in California, where the last wild condor was captured in April 1987.

The population decline of California Condors was attributed to shooting, feeding on poison bait intended for coyotes, food contamination with pesticides and lead, egg collectors, general harassment, habitat destruction, and food scarcity. Many large species, including condors, thrived in the era of woolly mammoths, and their absence today is no small part of the condor's food-scarcity problem. Once inhabiting much of North America (condor bones have been found in Florida and New York), condors are not known to have occurred east of the Rockies in the last 500 years. They disappeared from Arizona in 1924.

In 1982, the number of wild condors had dwindled to 21-24. The winter of 1984-85 was a bad one, after which only 14 birds (including only one breeding pair) were left. The decision to capture the remaining 14 condors for captive breeding stirred a great deal of controversy within the conservation community. At the time, no condors had ever bred successfully in captivity, yet it seemed likely that condors would soon become extinct if left in the wild. Now, there are 148 condors in captivity, mainly products of the captive breeding programs at the Los Angeles Zoo, San Diego Wild Animal Park, and The Peregrine Fund World Center for Birds of Prey in Boise, Idaho, where the captive populations currently produce about 20 young per year. The captive breeding program has been a great success, re-introduction has begun, and, for now, the controversy has quieted. The ultimate success of reintroduction remains to be seen.

Reintroduction of condors in northern Arizona generated its own local controversy. Many residents of northern Arizona and southern Utah feared that releases of an endangered species in their region would bring restrictions on land use and management. Under the Endangered Species Act, however, the reintroduced population is classified as "experimental," meaning that an illegal "take" would be subject to lesser penalties than those imposed for taking animals from non-experimental populations. Joy Jordan, the mayor of Fredonia, Arizona, initially opposed the release of condors in northern Arizona, but the birds' experimental classification, and seeing condors shortly after their release, changed her mind. "Well, they're gorgeous. And they're beautiful to watch soar. They're very graceful and just lovely" (quoted from National Public

Radio's All Things Considered program on 27 November 1998; see website: <http://www.npr.org/programs/atc/archives/1998/981127.atc.html>).

Controversy even followed the condors to Colorado. Their sudden appearance sparked discussions about whether or not the millions of dollars being spent to recover the species are worth it, whether man has interfered with a "natural" extinction, whether a species produced and sustained artificially is worth bothering to see (much less "list"), and what would be the species' ultimate fate. During the radio interview mentioned above, Shawn Farry said, "People are always asking me, 'Why should we be doing this? Is it worth it?' [But,] if everybody could see them fly just once, I don't think anybody would ask that question."

Residents of western Colorado and eastern Utah may have more opportunities to see these birds again. Summer seems to be the wandering season (lots of thermal air currents), and, as we've seen, Grand Mesa is not that far from Arizona if you have really big wings. Anyone interested in traveling to Arizona to see condors should look for them along U.S. Highway 89A, west of Marble Canyon, Arizona. There are a number of pullouts along the road where you can park and scan the skies for soaring condors. You should have a decent chance of spotting one if you can spend a few days in the area. For more information about the Arizona release program, check their website at: <http://www.peregrinefund.org/vermil.html>.

### Acknowledgments

Information for this article came from interviews with Shawn Farry, Jim Viets, Barb Osmundson, Renzo DelPiccolo, and Kim Ralston; The Peregrine Fund's condor website; *The Birder's Handbook* (Ehrlich et al. 1988); and National Public Radio.

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## RECENT ORNITHOLOGICAL LITERATURE PERTAINING TO COLORADO, NUMBER 3

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If a CFO member is aware of a paper regarding Colorado birds in any journals not reviewed regularly in this section, I would appreciate a reprint or a citation for the paper so that I may include it in this feature.

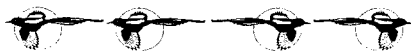
Bechard, Marc J. 1996. **In memoriam: Richard R. Olendorff, 1943-1994.** *Auk* 113:489. Dr. Olendorff was one of the nations' experts on raptors; he received his Ph.D. from Colorado State University, Fort Collins.

Chace, Jameson F., and Alexander Cruz. 1998. **Range of the Brown-headed Cowbird in Colorado: past and present.** *Great Basin Naturalist* 58:245-249. Based on the former range of the bison, the Brown-headed Cowbird may have been present at higher elevations in the past, parasitizing certain high-elevation bird species.

Fleck, David C., and Diana F. Tomback. 1996. **Tannin and protein in the diet of a food-hoarding granivore, the Western Scrub Jay.** *Condor* 98:474-482. Jays lost body mass on low-protein diets and lost even more mass on low-protein and high-tannin diets. Tannin effects were eliminated in high-protein diets.

Ryder, Ronald A. 1996. **In memoriam: Gustav A. Swanson, 1910-1995.** *Auk* 113:682-684. Dr. Swanson was the former head of the Department of Fishery and Wildlife Biology at Colorado State University, Fort Collins.

Stahlecker, Dale W., and Russell B. Duncan. 1996. **The Boreal Owl at the southern terminus of the Rocky Mountains: undocumented longtime resident or recent arrival?** *Condor* 98: 153-161. This paper focuses on recent findings in northern New Mexico; however, a considerable number of references are made to Colorado owls.



Alexander Cruz and Nicholas A. Cruz  
by Diane Cruz



## **ORNITHOLOGICAL RESEARCH IN COLORADO, PART II: FOCUS ON DR. ALEXANDER CRUZ AND STUDENTS**

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Alexander Cruz is a familiar name among ornithologists in Colorado, and his name often appears in the *Journal of the Colorado Field Ornithologists*. However, there are two Colorado ornithologists by the name of Alexander Cruz. One of them is a professor of Biology and Associate Dean of the Graduate School at the University of Colorado (CU) in Boulder; the other sports a "Jr." after his name and is the talented artist who often embellishes the *Journal of the Colorado Field Ornithologists* with his enchanting drawings of birds. Like his father, Alexander Cruz, Jr. has an illustrious career; he is a professional scientific illustrator and works for Archipelago Publishing Company in Monterey, California. In this article, however, I will focus on Alexander Cruz, Sr. and the research that he and his students have conducted in Colorado.

After receiving his Bachelor's degree in 1964 from the City University of New York, Cruz began his career as a microbiologist at a health department virology lab in his hometown of Manhattan, New York. Before work and during his

lunch hours, he used to escape to Central Park, where his free time disappeared all too quickly watching birds. After several years of questioning his career choice, he finally listened to his heart and traded the stuffy (albeit fascinating) lab for the opportunity to obtain a doctoral degree at the University of Florida, which enabled him to be the practicing ornithologist that he always yearned to be. At the same time, he realized his long-standing interest in island ecology, and his dissertation focused on the ecology and behavior of Jamaican Woodpeckers (*Melanerpes radiolatus*). He obtained an Assistant Professor position at CU in Boulder straight out of graduate school in 1973. At the Department of Environmental, Population, and Organismic Biology, Cruz teaches ornithology, ecology, geographical ecology, island biology, vertebrate zoology, invertebrate zoology, and graduate level seminars on various topics. He has served or is serving as a committee member for more than 70 Doctoral and Masters candidates, and he has served as major advisor for 13 Doctoral students and 18 Masters students. Additionally, he has supervised approximately 75 independent-study projects and honors theses for undergraduates. Although the focus of these projects has varied from fish to bats and from tropical mangrove swamps to the grasslands of the Great Basin, some of these projects have involved Colorado birds.

Many of Cruz's students work in tropical areas, such as in the West Indies, or elsewhere in the United States. One of Cruz's long-term interests is the breeding biology and range expansion of the Shiny Cowbird (*Molothrus bonariensis*), which had been restricted to South America, Trinidad, and Tobago, but recently the species has been expanding its range through the West Indies and into the southeastern United States (see Cruz *et al.* 1985, Ortega 1998a). He has concentrated some of his efforts on the island of Puerto Rico, his grandparents' native country and where his mother now lives. There, Cruz and several students have investigated the interactions between the Shiny Cowbird and the endangered, endemic Yellow-shouldered Blackbird (*Agelaius xanthomus*). This research has been funded by some prestigious organizations, such as the National Science Foundation and the National Geographic Society; their grants have provided many of Cruz's students with the opportunity to work in South America, Trinidad, and various other locations in the West Indies. For example, Bob Andrews, co-author of *Colorado Birds: A Reference to Their Distribution and Habitat* (Andrews and Righter 1992) and a fellow Colorado ornithologist familiar to many of us, worked on the cowbird/blackbird project in Venezuela and Trinidad in the early 1980s. However, many of Cruz's present and former students, including myself (see Ortega 1998b), have conducted ornithological studies here in Colorado.

Among the many highlights of the Colorado research projects is a long-term study on Plumbeous Vireos (*Vireo plumbeus*). In 1984, one of Cruz's students, Rebecca Marvil, undertook a three-year study of Plumbeous Vireos in some of the ponderosa pine (*Pinus ponderosa*) forests south and west of Boulder. This study turned out to last longer than she ever imagined, as Jameson Chace resurrected the study in 1992, enthusiastically adding another three years to the wealth of information already collected by Marvil and Cruz. In 1997, John Walsh joined forces with Chace and Cruz in yet another iteration of the study, which will continue at least through 1999. As a result, it will probably be the most thoroughly studied population of Plumbeous Vireos anywhere. This study has focused primarily on the effects of predators and brood parasitism by Brown-headed Cowbirds (*Molothrus ater*) on the nesting success of Plumbeous Vireos, and determining predictors of brood parasitism patterns based on habitat, particularly anthropogenic changes. Roughly half of the Plumbeous Vireo nests in this study are depredated, which is typical of open-cup nesting birds. Additionally, more than half of the Plumbeous Vireo nests appear to be parasitized, and about 28% of the nests fail directly due to parasitism. When a cowbird chick hatches successfully, the vireo chicks have almost no hope of surviving, not only because the cowbird typically hatches 4-5 days earlier than the vireos, but also because the larger cowbird chick begs vigorously and outcompetes the smaller vireos for food. The astounding difference in growth between cowbirds and vireos was reported in a paper by Marvil and Cruz (1989), whose paper is one the most well-cited papers of this decade among those dealing with brood parasites.

While the Plumbeous Vireo population appears to be stable at the Boulder County study sites, Chace and Cruz suspect that this population may be an ecological "sink," where not enough vireos are produced to maintain the population. Only 22% of the Plumbeous Vireos in their study successfully fledge their own young. They suggest that Boulder's vireo population may be supplemented by recruits from other geographic regions, or "sources," where production is higher. However, to determine whether or not a 22% nesting success is sufficient to maintain the population, they may have to determine the survivorship of fledged young and how many seasons individual birds typically reproduce. Along with gathering information on the importance of predators and cowbirds as population regulators, Cruz and Chace have investigated how landscapes affect patterns of predation and cowbird parasitism. They found that parasitism is higher near openings in small stands of ponderosa pine and that it does not seem to matter whether these openings are natural or created through human activities. They have also found that predation is higher near roads and residential areas, perhaps due to increased abundance of Steller's Jays (*Cyanositta stelleri*) near human activity. While Boulder County

has protected thousands of acres of open space, Cruz and Chace are concerned that disturbances bordering open space may be sufficient to allow access to predators and cowbirds. Presently, they are working on management recommendations, which may include eliminating cowbird-foraging sites from areas near open spaces. However, before they can make definitive recommendations, they might need to conduct some radio-telemetry studies to determine daily movements of cowbirds because cowbirds have been known to commute up to seven kilometers (4.35 miles) (Rothstein *et al.* 1984) or even 10 kilometers (6.2 miles) (Thompson 1994) between nesting and feeding sites.

Another one of Cruz's students, John Walsh, who is also involved in the Plumbeous Vireo study, is currently investigating why Western Wood-Pewees (*Contopus sordidulus*) are not parasitized by Brown-headed Cowbirds. Occurrences of parasitism among Western Wood-Pewees appears to be rather spotty, but most populations appear to escape parasitism altogether. Walsh is conducting several experiments to determine the causes for this apparent lack of parasitism. His experiments include artificially parasitizing pewee nests to determine whether or not the birds accept cowbird eggs. If the majority of individuals accept cowbird eggs added to their nests, then one can assume that the experimental rate of parasitism reflects the actual rate of parasitism. However, if many individuals eject the experimentally added eggs, then the actual rate of parasitism may be considerably higher than the observed rate of parasitism--the birds may eject cowbird eggs so rapidly that they go undetected by investigators. Walsh has found that Western Wood-Pewees do, indeed, accept cowbird eggs, and through his experiments, he was able to determine that parasitized Western Wood-Pewees are also able to fledge cowbirds successfully from their nests. Additionally, Walsh is conducting experiments with mounted cowbirds to investigate the degree of recognition and subsequent aggression towards cowbirds compared to more innocuous species, such as sparrows, which represent neither a threat nor competition.

Cruz has conducted and directed many studies on foraging ecology in the West Indies, but he also has overseen several such studies in Colorado. Heather Ewell, a current Ph.D. candidate, conducted one of the more long-term studies, which took place between 1994 and 1997 in the ponderosa pine forests west of Boulder. She examined the diet and foraging behavior of Pygmy Nuthatches (*Sitta pygmaea*) and the importance of mature stands of ponderosa pine to nuthatches (Ewell and Cruz 1998). Understanding foraging behavior and dietary needs of birds is an important for managing resources for birds. The studies that Cruz and his students have conducted can provide the baseline data necessary to make wise management decisions that ultimately will enhance bird populations.

Cruz is a personable and enthusiastic professor, which is exemplified by the constant stream of students filing through his office. His dedication to excellence in teaching and mentoring has won him numerous awards, such as CU's Boulder Campus Awards for Academic Advising in 1984, Teaching in 1987, and Excellence in Equity in 1993; he also received the CU-wide Presidential Teaching Scholar Award in 1991. He is relentless in his quest to help students enjoy the wonders of nature that have enriched his own life, and he has gone above and beyond the call of duty to find ways for students with few financial resources to fulfill their dreams of a meaningful education.

For further information on research conducted in Colorado by Cruz and his students, please refer to the sources listed below. Completed master's theses and doctoral dissertations are available for review at Norlin Library on CU's Boulder Campus. Information on master's theses and doctoral dissertations in progress can be requested from the appropriate students. Reprints of published papers are available upon request to: Dr. Cruz, Department of Environmental, Population, and Organismic Biology, Campus Box B-334, University of Colorado, Boulder, CO 80309-0334.

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## ***Conservation Focus***

### **BIRD MORTALITY AT COMMUNICATIONS TOWERS**

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With the advent of television in the late 1940s, tall transmitter towers started to appear across the landscape. Not long afterwards, people began to find that these towers were taking a toll on birds. Although it had been known for centuries that birds often crashed into lighthouses on foggy nights, apparently no one foresaw or worried about the same phenomenon occurring at communications towers lighted to warn aircraft away. While birds will collide with towers during clear weather, scientists believe that they are actually drawn to the bright lights of towers on nights with fog or low-cloud ceilings. With their normal navigational capabilities overwhelmed by the combination of weather and bright lights, birds apparently become disoriented and fly about the towers, smashing into the tower's structures and even other birds.

In the late 1970s, the Canadian Wildlife Service (Weir 1976) and the U.S. Fish and Wildlife Service (Avery 1978, revised 1980) published two bibliographies that cited hundreds of bird-mortality studies at tall communications towers. This type of research had begun in the 1950s and paralleled the growth of television. By the mid 1970s, it was estimated that more than one million birds were dying at television towers each year (Banks 1979). This estimate was based on several long-term studies at tall communications towers, during which an average of 2500 birds died annually. In some incidences, when peak bird migration coincided with nights of fog or low-cloud ceilings, staggering numbers of dead birds were found on the ground around towers the next morning. In Eau Claire, Wisconsin, 30,000 songbirds died in a single night at a 1000-foot (305-meter) TV tower. Tales still circulate of TV engineers coming to work in the morning and using snow shovels to remove dead songbirds from the TV station's walkway.

#### **Bird Mortality at Towers in Colorado and Surrounding States**

In January 1998, 5000-10,000 Lapland Longspurs died at a 420-foot-tall (128-meters) communications tower in western Kansas. That night there had been a deadly combination of dense ground fog and snow, bright tower lights, and the birds' need to make a massive nighttime movement--presumably in search

of bare ground on which to feed in the morning. While no one was there to witness the event, it appeared that longspurs collided with the tower and other structures in the vicinity. Some birds were so disoriented that they hit the ground with enough force to impale themselves on the stubble of harvested crops. Because the Kansas longspur kill occurred within a mere 50 miles (80 kilometers) of Colorado's border, mortality is probably occurring at Colorado towers as well. Unfortunately, there have been no investigations of bird mortality at towers in most of the Rocky Mountain states, including Colorado. In Kansas and Oklahoma, however, the problem has been studied since the late 1950s.

The Federal Aviation Administration (FAA) monitors all towers that stand 200 feet or higher (61 meters) above average ground level for their potential hazards to aviation. In its November 1998 update, the FAA was tracking 313 such communications towers in Colorado, most of which are located east of the Front Range on the plains. Currently, the number of towers going up in Colorado is increasing by 10 percent each year, and the rate is accelerating. More than half of Colorado's towers are in at least the same height range as that of the tower that caused the massive longspur kill in Kansas last year.

### **More Trouble Looming**

In the late 1970s, when information about tower-related bird mortalities began to emerge, many people rationalized that this source of bird mortality was insignificant in terms of their overall populations. Even if this were true, why would we continue allowing millions of birds to die unnecessarily as a result of human ignorance or negligence? Twenty years later, however, the number of tall towers has more than doubled, and the estimates of birds killed at towers range from 2-5 million per year in the U.S. alone. New and emerging technologies, such as cellular phones and digital TV (DTV), are adding to the demand for towers, possibly causing even more tower-related bird mortalities.

With the recent introduction of DTV, the multi-billion dollar communications industry urged the Federal Communications Commission (FCC) to propose a new ruling that would clear legal pathways for rapid construction of DTV antenna towers. The industry estimates a need for roughly 1000 DTV towers, many of which will be 1000 feet (305 meters) high or higher. If passed, the FCC's ruling could preempt state and local zoning regulations that control where and when new communications towers may be installed. Meanwhile, the construction of DTV towers is underway where regulations already permit.

Another piece of recently proposed federal legislation (H.R. 3844) may result in even more problems. If passed, this legislation would amend the 1996

Telecommunications Act "...require a U.S. department, agency, officer, or instrumentality, within 60 days after a request, to make property under its jurisdiction or control available to a provider [for 9-1-1 services]." The justification for this legislation is that it would provide "seamless" and "ubiquitous 9-1-1 emergency communications services across the country--certainly a valid cause, but the current climate of deregulation has fostered so much competition between communications companies that they are building more towers than necessary for serving 9-1-1 needs. Between the combined push for DTV availability, increased 9-1-1 coverage, and the use of cellular phones, the number of tall towers is predicted to increase at a rapid rate, putting populations of birds at even greater risk and further degrading the land's scenic qualities.

### **The National Environmental Policy Act, Grassroots Activism, and Research**

In 1997, the FCC posted its Notice of Proposed Rule Making (NPRM) regarding preemption of state and local zoning regulations that would otherwise delay or obstruct tower construction for DTV. Specifically, the NPRM requested comments on "...whether and in what circumstances the [FCC] should preempt certain state and local actions on zoning and land use ordinances which represent an obstacle to the rapid implementation of [DTV] service...." The National Audubon Society subsequently petitioned the FCC to prepare an environmental impact statement (EIS) for its proposed ruling, arguing that it constitutes a "major federal action" affecting the environment. The Ornithological Council, which represents all major Ornithological Societies in North America, backed Audubon's petition with a strongly worded resolution.

Under the National Environmental Policy Act (NEPA), federal agencies are required to disclose [in an EIS or an environmental assessment (EA)] the individual and cumulative effects of "major federal actions" on the "quality of the human environment." An EA or EIS is also required if any federal monies or federal-permitting decisions are involved, and/or if the proposed action would invoke other laws, such as the Endangered Species Act or the Migratory Bird Treaty Act. Finally, one of NEPA's stated goals is to "create and maintain conditions under which man and nature can exist in productive harmony." Whether or not one could interpret the FCC's proposed ruling as a "major federal action," it appears to involve a federal decision and, based on our present knowledge of bird mortalities at towers, it clearly disregards one of NEPA's explicit goals.

In response to Audubon's petition for an EIS, the FCC opened a 30-day public comment period early in 1998. Combined with the Kansas longspur tragedy and a growing awareness of massive bird mortalities at towers, this comment

period stirred an uprising among ornithologists and bird lovers across the continent. Hundreds of protest letters were written to Congress and the FCC, and more than 1000 people signed a request that the FCC prepare an EIS on the environmental impacts of tall communications towers.

To protect bird populations, our wild lands, and the land's scenic qualities, we need laws and policies that regulate the number of towers and where they can be located. Regulations should also require communications companies to cooperate with one another in sharing tower resources (co-locations). Most importantly, we need to make towers less dangerous to birds. To date, there have been no serious efforts to mitigate the effects of towers on birds, partly due to the lack of research on this issue. What little research has been done (e.g., Cochran and Graber 1958), however, indicates that alternative tower-lighting techniques, or technologies that eliminate the need for tower lights, would go a long way toward resolving the problem. Unfortunately, studying tower-related bird mortalities is difficult because large kills generally happen under a relatively rare set of circumstances. Designing studies flexible enough to account for these relatively unpredictable events is essential. The difficulty of the problem is no excuse for lacking foresight; we need to address this issue now, before we make disastrous mistakes.

### **Toolbox**

To implement a bird-friendly communications network across the continent, a second wave of action is necessary. We need to ensure that the FCC conducts an EIS on the environmental impacts of towers, including bird mortalities. Action also must include mitigation research and working with the collective knowledge of bird researchers--particularly migration experts--to find solutions to avian mortalities at towers.

What can you do to help? You can start by writing to your senators and representatives, and forward copies of your letters to the FCC. Point out that 1) at the very least, towers affect millions of birds protected under the Migratory Bird Treaty Act; 2) towers do not "discriminate" among bird species--that is, they can affect threatened and endangered species as easily as any other species; 3) preempting state and local zoning regulations through a federal decision, the collective result of which would be construction of roughly 1000 very tall towers, would constitute a major federal action; and 4) the total lack of mitigation efforts flies in the face of NEPA's explicit goal to "create and maintain conditions under which man and nature can exist in productive harmony." Insist that the FCC conduct an EIS and vigorously encourage research on technologies that will prevent massive bird mortalities at communications towers. Urge your Congressional Representative to vote against H. R. 3844 unless environmental degradation and antenna co-location concerns are carefully

addressed. Also urge your U.S. Senator to support S. 1350 and your Congressional Representative to support H. R. 3016; both of these bills would permit state and local governments to regulate the location, construction, and modification of towers on the basis of their environmental effects.

The effort to minimize bird mortality at communications towers may or may not be won with legislation. It may take a dedicated graduate student who's willing to travel after a winter storm to document a massive longspur kill and test ideas that could resolve the problem. It may be won by a concerned citizen who cares about songbirds and has the time and energy to organize a grassroots effort to monitor tower-related bird mortalities and educate the public. There are many possible approaches, but a well-organized, grassroots effort run by patient, dedicated people often works best. Here are some resources to get you going:

Educate yourself and others by checking out the World Wide Web site: <http://www.towerkill.com>. This web site provides summaries of research on avian mortality at towers, information on relevant policies and laws (National Environmental Policy Act, Endangered Species Act), the FCC's proposed ruling, the Ornithological Council's Towerkill Resolution, state by state reports on towers, a bibliography, a bulletin board, links to other relevant web sites, and more.

The American Bird Conservancy's newsletter, *Bird Calls*, also provides updates on this issue. To subscribe, contact the American Bird Conservancy at:

1250 24th Street NW, Suite 400  
Washington, DC 20037  
202/778-9666; fax 202/778-9778  
e-mail: [ABC@ABCBIRDS.ORG](mailto:ABC@ABCBIRDS.ORG)

Write to the FCC Chair and urge him to conduct an EIS on tower-related bird mortality and other environmental impacts related to communications towers (send copies of your letters to your legislators):

The Honorable Chairman William Kennard  
Office of the Secretary  
Federal Communications Commission  
1919 M Street, NW  
Washington, DC 20554

Write or call your U.S. Senators and Representatives and urge them to vote on the legislation discussed above (send copies of your letters to the FCC Chair).

Colorado's U.S. Senators (urge them to vote yes on S. 1350):

A. Wayne Allard	Ben Nighthorse Campbell
726 Hart Senate Offc. Bldg.	380 Russell Senate Offc. Bldg.
Washington, DC 20510	Washington, DC 20510
970/351-7582; fax 202/224-6471	303/866-1900; fax 202/224-1933

Colorado's Congressional Representatives (urge them to vote no on H.R. 3844 and yes on H.R. 3016):

<u>District 1</u>	<u>District 4</u>
Diana DeGette	Bob Schaffer
1404 Longworth H.O.B.	212 Cannon H.O.B.
Washington, DC 20515	Washington, DC 20515
303/832-1925; fax 202/225-5842	970/493-9132; fax 202/225-5870

<u>District 2</u>	<u>District 5</u>
*Mark Udall	Joel Hefley
1124 Longworth H.O.B.	2230 Rayburn H.O.B.
Washington, DC 20515	Washington, DC 20515
303/245-8005; fax 202/226-3806	719/520-0055; fax 202/225-1942

<u>District 3</u>	<u>District 6</u>
Scott McInnis	*Thomas Tancredo
215 Cannon H.O.B.	2160 Rayburn H.O.B.
Washington, DC 20515	Washington, DC 20515
719/543-8200; fax 202/226-0622	303/783-1051; fax 202/225-7885

\* = New in 1999; double-check contact information for new representatives, as their contact information was gathered in December 1998 before the new representatives were settled into their Washington offices.

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Illustrations by Alexander Cruz, Jr.

Western Meadowlark  
by Alexander Cruz, Jr.



## AVIAN USE OF TWO VEGETATIONAL COMMUNITIES IN RABBIT MOUNTAIN PARK

Alexander Cruz, Jr., Alexander Cruz, and Carl E. Bock  
Environmental, Population, and Organismic Biology  
University of Colorado  
Boulder, Colorado 80309-0334

### Abstract

Avian diversity and relative abundance were compared between a grassland and a foothills-shrub community in Rabbit Mountain Park, northwest of Longmont in Boulder County, Colorado. We used the fixed-point count method to census birds between 24 January and 19 April 1987. Bird diversity and relative abundance was higher in the foothills-shrub community than in the grassland. Killdeer (*Charadrius vociferus*), Horned Larks (*Eremophila alpestris*), and Western Meadowlarks (*Sturnella neglecta*) were significantly more common in the grassland. Downy Woodpeckers (*Picoides pubescens*) and American Robins (*Turdus migratorius*) were significantly more common in the foothills-shrub community; specifically, Downy Woodpeckers and American Robins associated more with ponderosa pines and areas with high shrub cover, while Spotted Towhees (*Pipilo maculatus*) associated more with open areas and Mountain Bluebirds (*Sialia currucoides*) occurred closer to the grassland.

### Introduction

Foothills-shrub and grassland habitats of the Front Range in northern Colorado are unique and understudied communities (Berry 1997). Berry studied habitat associations of birds in these communities during the breeding season, however we are not aware of any published studies on habitat associations of birds in Boulder County's foothills-shrub and grassland habitats during the non-breeding season. Our objectives were to examine habitat associations of birds in these communities and to examine the influence of vegetation structure and composition on avian use of these communities within Rabbit Mountain Park, Boulder County, Colorado.

### Study Areas

Rabbit Mountain Park, a 448-hectare unit (1107 acres) of Boulder County Parks and Open Space, is located approximately eight kilometers (five miles) northwest of Longmont, forming the easternmost extension of the foothills in Boulder County. The grassland study area was located on a gently sloping mesa (slope = 12%) at an elevation of about 1720 meters (5642 feet). The vegetation was characterized by grasses, including slender wheatgrass (*Agropyron trachycaulum*) and blue grama (*Bouteloua gracilis*); yucca (*Yucca*

*glauca*), prickly pear (*Opuntia compressa*), and rabbitbrush (*Chrysothamnus nauseosus*) were scattered sparsely throughout (Boulder County Parks and Open Space 1985).

The foothills-shrub community was parallel to and approximately 160 meters (525 feet) west of the grassland community on a slope (slope = 19%) averaging approximately 1750 meters (5741 feet) in elevation. The vegetation was characterized by dense thickets of primarily mountain-mahogany (*Cercocarpus montanus*) and, to a lesser extent, skunkbrush (*Rhus trilobata*), yucca (*Yucca glauca*) and prickly pear (*Opuntia* sp.) in open areas, and ponderosa pine (*Pinus ponderosa*); the ground cover consisted of grasses and forbs. An average of 64.9% of the total foothills-shrub type was covered by shrub, 33.8% was open, and 1.9% had a canopy of ponderosa pine. As noted by Berry (1997), foothills-shrub plant associations naturally occur in patches of widely varying contexts. In the vicinity of Boulder, patches occur primarily in moist drainages in the absence of perennial streams or cottonwood-willow riparian forest (Vestal 1917). Some shrub patches are isolated in a context of plains grassland or ponderosa pine woodland.

### Methods

To develop a relative-abundance index of birds, we established a transect in the grassland and a transect in the foothills shrub. The transects were at least 100 meters (328.1 feet) apart and were oriented north to south. We established 10 circular plots on the foothills-shrub transect, and, because generally birds were easier to see in the grassland, we established five circular plots on the grassland transect. The radius of each plot was 45.7 meters (150 feet), for a total of 0.65 hectares (1.61 acres) per plot and 9.75 hectares (24.09 acres) across the study areas. The distance intervals between plots was 100 meters (328.1 feet). We established the plot sizes and interplot distances to accommodate the narrow and patchy distributions of foothills shrub habitats. In other studies, the interplot distance has varied from 100-150 meters (e.g., Szaro and Jakle 1982; Verner and Ritter 1985).

Our plots were the basis for conducting fixed-point counts of birds. Each plot was censused twice each week for the 11 weeks of the study, for a total of 22 censuses between 24 January and 19 April 1987. All 15 plots were censused on the same day, and all censuses were conducted within four hours of sunrise, when avian vocalizations peak (personal observations). It took an average of 2.25 hours to complete the counts. Transect starting points were rotated to insure that all plots would be sampled at different times of the morning (DeSante 1981). The count duration at each point was eight minutes.

We averaged the number of birds, by species, detected across visits and plots for each transect, and then we calculated bird densities per hectare for each

habitat type (Bock *et al.* 1995). We used Mann-Whitney U tests (Sokal and Rohlf 1981) to determine whether there were differences between the two communities. We also analyzed the strength of relationships between vegetational composition and the relative abundance of birds with Mann-Whitney U tests.

### Results

A total of 28 bird species were recorded, 14 species in the grassland plots and 21 in foothills-shrub plots (see Appendix 1 for scientific names). Relative abundance was higher in the foothills-shrub community (4.14 birds/hectare) than in the grassland community (1.08 birds/hectare, Appendix 1) ( $U = 50, p < 0.002$ ). The most common species in the grassland plots was the Mountain Bluebird and the second most common species was the Western Meadowlark.

The American Robin was the most common species (relative abundance 2.7 birds/hectare) in the foothills-shrub habitat, and the species was significantly more common in foothills-shrub plots than in grassland plots ( $U=50, p < 0.002$ ) (Appendix 1). The relative abundance of robins was higher in foothills-shrub plots that were closer to a large stand of ponderosa pine ( $r = -0.735, p < 0.05$ ). The second most common species in the foothills-shrub plots were the Mountain Bluebird and the European Starling. Downy Woodpeckers were found only in the foothills-shrub habitat, and they occurred more often in plots with a higher percentage of shrub cover ( $U = 42.5, p < 0.02$ ). Spotted Towhees were found significantly more often in plots with a lower percentage of shrub cover ( $U = 20, p < 0.05$ ) (Appendix 1).

### Discussion

The foothills-shrub habitat supported a greater diversity of species than the grassland, possibly because it provides more cover, perches, and/or food resources due to the greater habitat heterogeneity and vegetational diversity. Our results are consistent with what has been shown by others. MacArthur and MacArthur (1961) demonstrated a linear relationship between the vertical complexity of vegetation and the diversity of bird species occurring within a habitat, and Roth (1976) found that heterogeneity of vegetation was associated with avian diversity. We observed Downy Woodpeckers and Brown Creepers foraging on the bark of mountain-mahogany and ponderosa pine. Flying insects were common around pines and shrubs on warm days (even in midwinter), which probably attracted species such as Townsend's Solitaire, Chipping Sparrow, and Pine Siskin to the foothills-shrub habitat. The Sharp-shinned Hawk, Townsend's Solitaire, and the Northern Shrike were found only in the foothills-shrub habitat, and they were observed using high perches to scan the area. The presence of starlings in foothills-shrub habitat was surprising, as our plots were not close to human habitations.

The foothills-shrub community was richer in terms of bird diversity and relative abundance than the grassland community during this study period. A quarter of the species detected during our study were found in both foothills-shrub and grassland plots (Appendix 1); of these, the Say's Phoebe and the Mountain Bluebird tended to occur in plots that were predominantly grassland or close to grassland. Typically, both Say's Phoebes and Mountain Bluebirds prefer more open areas for foraging (Bent 1942, personal observation).

Future studies should investigate the habitat associations we found among birds across a wider sample of grassland and foothills-shrub habitats. In addition, it would be interesting to evaluate the effects of seasonal changes on bird abundance and diversity in these two habitats. Rabbit Mountain offers a wide variety of opportunities for avifaunal studies, as well as mammalian, vegetational, and geological studies.

### Acknowledgments

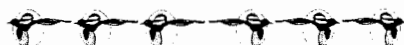
We thank the Boulder County Parks and Open Space Department for allowing us to undertake this study on land under their jurisdiction. We thank Jameson Chace and an anonymous reviewer for reviewing the manuscript.

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**Appendix 1.** Relative abundance per hectare of bird species found in grassland and foothills-shrub habitats, Rabbit Mountain Park, Boulder County, 1987.

Common Name	Scientific Name	Grassla	Foothills Shrub
Sharp-shinned Hawk	<i>(Accipiter striatus)</i>		0.014
Cooper's Hawk	<i>(Accipiter cooperii)</i>		0.028
Red-tailed Hawk	<i>(Buteo jamaicensis)</i>	0.014	
Golden Eagle	<i>(Aquila chrysaetos)</i>	0.056	0.014
American Kestrel	<i>(Falco sparverius)</i>	0.028	
Killdeer	<i>(Charadrius vociferus)</i>	0.126	
Downy Woodpecker	<i>(Picoides pubescens)</i>		0.126
Hairy Woodpecker	<i>(Picoides villosus)</i>		0.028
Northern Flicker	<i>(Colaptes auratus)</i>		0.028
Say's Phoebe	<i>(Sayornis saya)</i>	0.014	0.028
Horned Lark	<i>(Eremophila alpestris)</i>	0.056	
Tree Swallow	<i>(Tachycineta bicolor)</i>		0.028
Black-billed Magpie	<i>(Pica pica)</i>	0.028	0.014
Common Raven	<i>(Corvus corax)</i>	0.056	0.042
Brown Creeper	<i>(Certhia americana)</i>		0.014
Mountain Bluebird	<i>(Sialia currucoides)</i>	0.35	0.364
Townsend's Solitaire	<i>(Myadestes townsendi)</i>		0.07
American Robin	<i>(Turdus migratorius)</i>	0.028	2.66
Northern Shrike	<i>(Lanius excubitor)</i>		0.014
European Starling	<i>(Sturnus vulgaris)</i>		0.364
Spotted Towhee	<i>(Pipilo maculatus)</i>		0.042
Chipping Sparrow	<i>(Spizella passerina)</i>		0.028
Vesper Sparrow	<i>(Poocetes gramineus)</i>	0.042	0.084
Dark-eyed Junco	<i>(Junco hyemalis)</i>		0.042
Western Meadowlark	<i>(Sturnella neglecta)</i>	0.238	
Brewer's Blackbird	<i>(Euphagus cyanocephalus)</i>	0.028	
Common Grackle	<i>(Quiscalus quiscula)</i>	0.014	
Pine Siskin	<i>(Carduelis pinus)</i>		0.112
<b>TOTALS</b>		1.08	4.14



## **NEWS OF THE COLORADO BIRD RECORDS COMMITTEE (DECEMBER 1998)**

Mark Janos, Chairman  
Colorado Bird Records Committee  
10 Sedum Court  
Pueblo, Colorado 81001  
719/544-5002; rednot@hotmail.com

This is my last communication as Chairman of the Colorado Bird Records Committee (RC), as my term expired in December 1998. Members of the 1998 RC discussed candidates for new members, and I took those nominations to the CFO Board meetings in 1998. The Board asked Bill Lisowsky, Chris Wood, and Tony Leukering to fill the vacant positions. Bill Lisowsky steps up from a member position to that of Chairman; Chris Wood fills Bob Righter's expiring term as a member; Tony Leukering fills Bill Lisowsky's vacated position as a member. All three new members bring knowledge and experience in the identification, ranges, occurrence, and biology of birds to the RC, and I am pleased to see them accept their new positions. According to RC bylaws, all three will serve three-year terms.

In 1999, the RC membership is as follows (year of term expiration in parentheses):

Bill Lisowsky, Chairman (2001)	John Rawinsky (2000)
Joey Kellner (1999)	Chris Wood (2001)
Tony Leukering (2001)	Vic Zerbi (2001)
Joe Mammoser (2000)	

Tony Leukering is well known to most Colorado birders. If you have attended a CFO Convention in the last several years, or if have been to the Barr Lake banding stations, then you have run into Tony. Let Tony introduce himself to you:

"I started birding at the age of 17, when my brother and friends asked if I wanted to join them on a Spring Count in Cincinnati, Ohio, where I grew up. I thought that it might be an interesting thing to do, so I agreed to go. I was immediately hooked and quickly became a hard-core birder. The event also enabled me to finally know what I wanted to do when I grew up.

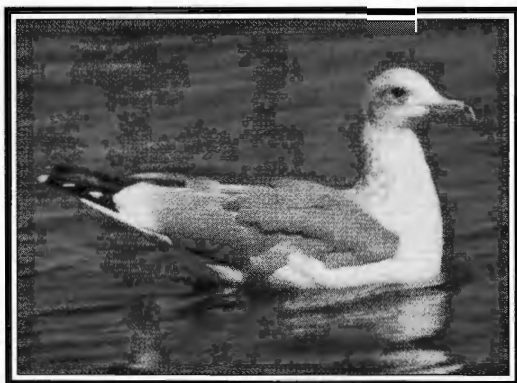
"After a stint at Michigan State University, I greatly expanded my horizons by visiting Whitefish Point Bird Observatory in the Upper Peninsula of Michigan. I decided that I really wanted to do field work on birds. My first position was Alternate Counter (filling in for the Hawk Counter and the Waterbird Counter

on their days off) at Whitefish Point in the spring of 1982. Subsequently, I worked as a "Block-buster" on the New York (1985) and Michigan (1988) Breeding Bird Atlases, and I worked at Whitefish Point Bird Observatory (six seasons) and at Cape May Bird Observatory (four seasons) as a hawk counter, waterbird counter, and bander. In addition, I have worked on birds in New Hampshire, Georgia, Florida, and on Kirtland's Warblers in central Michigan.

"In the spring of 1994, I had my first seasonal job in the western U.S. working for the Kern River Research Center (KRRC) on a great surveying job in the southern Sierra Nevada Mountains. Upon leaving KRRC in early August, my plan was to head to Cape May for the fall and then figure out how to spend the winter in the Lower Rio Grande Valley of Texas. On my way east, I stopped in Colorado Springs, near my birthplace (Ft. Carson). I had stopped to visit Susan Craig, an old friend from my early Whitefish Point days, and was only planning to stay a day or so. She told me that the Colorado Bird Observatory (CBO) had an open position for a fall bander. I decided to apply for the position, figuring I could see some different birds, get some new experience, and still get to Texas for the winter. I got the job and started work on 22 August 1994. I haven't left yet.

CBO hired me on a permanent basis as the Monitoring Coordinator in December 1994. I run a large, state-wide program to monitor the populations of all of Colorado's breeding bird species; my field work takes me all across the state—not a bad job for a birder. Because of my job, I found the population of Eurasian Collared-Doves in Rocky Ford in June 1996.

My interests in birds are identification, migration, distribution, migration, conservation, and migration. I have spent almost five months in Costa Rica on two trips and have birded in all of the Lower 48 states. My favorite groups of birds are generally non-passerines that are difficult to identify (seabirds, shorebirds, gulls, and raptors); the world's coolest bird (Great Gray Owl) is my all-time favorite."



California Gull  
by David Leatherman



## **SOUTHEASTERN COLORADO FIELD TRIP 26 SEPTEMBER 1998**

Brandon K. Percival

835 Harmony Drive, Pueblo West, Colorado 81007-2632

(719)-547-3722; flammowl@juno.com

On the morning of 26 September, a crowd of birders (L. Bright, S. Chapman, B. Dickson, T. Dilley, K. Dunning, J. Dunning, C. Fredericks, K. Fredericks, P. Gaede, BB Hahn, D. Johnson, D. Maxfield, G. McKinnon, C. Mettler, R. Mettler, S. Oswald, B. Percival—leader, G. Rutherford, S. Sheridan, D. Silverman, D. Smith, L. Soloman, J. Takamine) met in Pueblo for an all day field trip in southeastern Colorado. Our first stop was Rocky Ford to look for the Eurasian Collared-Doves. The doves must have had a good breeding season because we were able to count 14 of them. However, we could not find the White-winged Doves (one adult, two juveniles) previously reported in Rocky Ford. However, finding a male Broad-tailed Hummingbird was a big surprise.

Our next stop was the Rocky Ford Sewage Treatment Plant, which was excellent for shorebirds, ducks, and gulls. The most unusual gull we found was a first-winter Laughing Gull. We had wonderful views of the bird—both sitting and in flight. Todd Dilley videotaped the gull, which was a new Colorado species for several people on the trip. We also saw six Red-necked Phalaropes and sorted through 100+ dowitchers in hopes of finding a Short-billed Dowitcher, though we never did pin one down.

The Rocky Ford State Wildlife Area was our next stop, and it was great. A female Black-throated Blue Warbler, a female Red-naped Sapsucker, a Green Heron, and Lesser Goldfinches were among the many species we found there. Then we headed over to Lake Holbrook, where we located a Townsend's Warbler, two Field Sparrows, and an Inca Dove in the trees. Well, only the leader saw the Inca Dove—it had been discovered two days earlier and was seen again briefly on this trip, only in flight. As a group, we could not re-find the bird. The lake itself yielded two juvenile Sabine's Gulls and two Common Terns, though we did not see a Forster's Tern all day. After August, all Common Terns have a black saddle across the nape and the Forster's Terns have only the dark eye patches. This is a very easy way to identify *Sterna* species you're likely to see during fall migration in Colorado.

Moving on to Lake Cheraw, we saw many ducks and a few shorebirds, as well as another juvenile Sabine's Gull and a Common Tern. Then, on our way to Lake Henry, we saw a flock of 46 Chihuahuan Ravens and a Cassin's Kingbird. In the trees and bushes at Lake Henry, we found a Cassin's Vireo, a female American Redstart, and two more Field Sparrows. At that time, most of the



group headed back for Pueblo, while Dickson, Hahn, Chapman, and I continued on to Lake Meredith and the area north of Fowler. We found a few more species for our trip list, though nothing really unusual.

Overall, we had amazing birding that day in southeastern Colorado. We could not have asked for more unusual birds. The Laughing Gull, Black-throated Blue Warbler, and the Inca Dove were very exciting, and the Sabine's Gulls, Common Terns, Cassin's Vireo, American Redstart, Townsend's Warbler, and the four Field Sparrows were interesting as well. Normally, Red-naped Sapsuckers, Cassin's Kingbirds, Broad-tailed Hummingbirds, and Lesser Goldfinches do not occur in Otero or Crowley counties at any season, so they were a big surprise to all of us. Overall, we saw 136 species. [The next day, some people stayed with me to look for birds around Pueblo. The best bird of the day—a Yellow-throated Vireo—showed up after lunch, in Rock Canyon (across from Valco Ponds). We all had wonderful views of this very unexpected find.] Birds found on September 26 in southeastern Colorado:

Pied-billed Grebe  
Eared Grebe  
Western Grebe  
Clark's Grebe  
American White Pelican  
Double-crested Cormorant  
Great Blue Heron  
Cattle Egret  
Green Heron  
Black-crowned Night-Heron  
White-faced Ibis  
Turkey Vulture  
Canada Goose  
Wood Duck  
Gadwall  
American Wigeon  
Mallard  
Blue-winged Teal  
Cinnamon Teal  
Northern Shoveler  
Northern Pintail  
Green-winged Teal  
Redhead  
Ruddy Duck  
Osprey  
Northern Harrier  
Sharp-shinned Hawk  
Cooper's Hawk  
Swainson's Hawk  
Red-tailed Hawk  
American Kestrel  
Prairie Falcon  
Ring-necked Pheasant  
Scaled Quail  
Virginia Rail  
American Coot  
Black-bellied Plover  
Killdeer  
American Avocet  
Greater Yellowlegs  
Lesser Yellowlegs  
Solitary Sandpiper  
Spotted Sandpiper  
Semipalmated Sandpiper  
Western Sandpiper  
Least Sandpiper

Baird's Sandpiper  
Pectoral Sandpiper  
Stilt Sandpiper  
Long-billed Dowitcher  
Common Snipe  
Wilson's Phalarope  
Red-necked Phalarope  
**Laughing Gull**  
Franklin's Gull  
Ring-billed Gull  
California Gull  
**Sabine's Gull (3)**  
**Common Tern (3)**  
Rock Dove  
**Eurasian Collared-Dove (14)**  
Mourning Dove  
Inca Dove  
Barn Owl  
Great Horned Owl  
Burrowing Owl  
Common Nighthawk  
Chimney Swift  
**Broad-tailed Hummingbird**  
Belted Kingfisher  
Lewis's Woodpecker  
Red-headed Woodpecker  
**Red-naped Sapsucker**  
Downy Woodpecker  
Northern Flicker  
Western Wood-Pewee  
Say's Phoebe  
**Cassin's Kingbird**  
Western Kingbird  
Eastern Kingbird  
Loggerhead Shrike  
**Cassin's Vireo**  
Warbling Vireo  
Blue Jay  
Black-billed Magpie  
American Crow  
Chihuahuan Raven  
Horned Lark  
Tree Swallow  
Cliff Swallow  
Barn Swallow

Black-capped Chickadee  
Rock Wren  
House Wren  
Ruby-crowned Kinglet  
Hermit Thrush  
American Robin  
Northern Mockingbird  
Brown Thrasher  
European Starling  
Cedar Waxwing  
Orange-crowned Warbler  
**Black-throated Blue Warbler**  
Yellow-rumped Warbler  
**Townsend's Warbler**  
**American Redstart**  
Wilson's Warbler  
Yellow-breasted Chat  
Western Tanager  
Green-tailed Towhee  
Spotted Towhee  
Canyon Towhee  
Chipping Sparrow  
Clay-colored Sparrow  
**Field Sparrow (4)**  
Vesper Sparrow  
Lark Sparrow  
Lark Bunting  
Savannah Sparrow  
Song Sparrow  
Lincoln's Sparrow  
White-crowned Sparrow  
Dark-eyed Junco  
Blue Grosbeak  
Lazuli Bunting  
Red-winged Blackbird  
Western Meadowlark  
Yellow-headed Blackbird  
Brewer's Blackbird  
Common Grackle  
Great-tailed Grackle  
Brown-headed Cowbird  
House Finch  
**Lesser Goldfinch**  
American Goldfinch  
House Sparrow



## **MINUTES OF THE COLORADO FIELD ORNITHOLOGISTS' BOARD OF DIRECTORS MEETING, 14 NOVEMBER 1998**

The Board of Directors of the Colorado Field Ornithologists met on 14 November 1998 from 10.00 a.m. to 2.45 p.m. in the Creekside room of the El Paso County Park Headquarters, 2002 Creek Crossing, Colorado Springs, Colorado. Present were Leon Bright, Toni Brevillier, Jim Chace, BB Hahn, Warren Finch, Bill Fink, Mark Janos, Rachel Kolokoff, Rich Leivad, Cynthia Melcher, Pearle Sandstrom-Smith, Bob Spencer, and Mark Yaeger. Absent: Raymond Davis, Suzi Plooster, and Linda Vidal.

### **Remarks from the President**

Leon Bright announced the appointment of Mona Hill as "Administrative Editorial Assistant." This was necessary, in part, because the U.S. Postal Service requires that the person who sends the mailings for a given organization must have a title in that organization (Mona mails the *Journal of the Colorado Field Ornithologists*).

### **Secretary's Report**

Minutes of the 22 August 1998 Board meeting in Fort Collins, Colorado, were accepted as circulated to the Board and printed in the *Journal of the Colorado Field Ornithologists*.

The Secretary's duties were reviewed, and they are:

1. Record proceedings of the society and of the Board of Directors. This includes keeping minutes of the meetings as well as copies of reports filed by committees.
2. Provide copies of meeting minutes and agendas for meetings to Board members.
3. Act as custodian of all CFO non-financial records.
4. Assist the President in setting the agenda for each regular meeting.

Before the next meeting of the Board, Leon will revise page 3, section 5 (Secretary) of the Bylaws accordingly for the Board's consideration; a vote, with two-thirds majority, is required for passing these changes.

### **Treasurer's Report**

Current Bank Balance	\$ 9,195.92
Certificate of Deposit	<u>\$10,466.72</u>
Total Assets	\$19,662.64
Less Prepaid Memberships	<u>\$2,160.00</u>
ASSETS	\$17,502.64

The Certificate of Deposit matures on 24 November 1998. A motion made by BB Hahn, seconded by Pearl Sandstrom-Smith, to deposit \$3,000.00 in the Vanguard Investment Grade Bond Index and \$7,466.72 in a money market account was passed unanimously. On a motion by Cynthia Melcher, seconded by Bill Fink, the CFO Budget for 1999 was passed unanimously.

(At this point the Secretary, Toni Brevillier, had to leave to attend another meeting. Warren Finch, acting as Secretary pro tem, took notes and gave them to the Secretary.)

### **Committee Reports**

**Annual Convention Committee:** Rachel Kolokoff (Chair) presented a detailed report on her preparations for the 1999 CFO Convention. Bill Clark will be the keynote speaker on Saturday, 22 May 1999. He has been asked to conduct two workshops on Thursday, 20 May 1999: one from 8.00 am to noon on Beginning Raptor Identification, and one from 1.30 to 5.30 p.m. on Advanced Raptor Identification. Bill Clark suggested several topics for his key-note speech; the Board selected "Raptor Migration World Wide." Convention registration forms will be sent out at the latest by 15 February for return by 15 April 1999. The mailing list will include birding and ornithological organizations in bordering states. A motion was made by Pearle Sandstrom-Smith, seconded by Cynthia Melcher, for Rachel Kolokoff to spend up to \$400.00 to advertise in the Coloradoan. Mark Yaeger will design the T-shirts, hat pins, and poster for the convention. On each item there will be the convention name, place, and date. Bill Fink agreed to help with field trip organization. Steve Dinsmore and Ron Ryder also have offered to help with field trips. Bill Lisowsky will compile the convention bird list.

**Colorado Bird Records Committee:** Mark Janos (Chair) reported that the 1997 records have been circulated and a decision has been made on nearly all of them. The report should be finished by 1 January 1999. To date, 140 records for 1998 have been received and postcards have been sent to acknowledge their receipt. On 1 January 1999, Bill Lisowsky will replace Mark Janos as chairman of the Colorado Bird Records Committee and Tony Leukering will become a new committee member. Chris Wood will prepare Records Committee input for the CFO website. Brandon Percival has been entering the records data on computer and is two-thirds done. There is a need to summarize the past 10 years of the first and second state records.

**Checklist Committee:** Suzi Plooster (Chair) sent this report. A certificate of appreciation and a thank you note were sent [by Suzi] on behalf of the Board to Cindy Lippincott and Bob Berman for their assistance in the production

of the 1998 Field Checklist of Colorado Birds. Letters were sent to the Colorado State Parks Director, U.S. Forest Service (Colorado area), and the Rocky Mountain Nature Association informing them that the 1998 Field Checklist of Colorado Birds was now available from ABA, and [I] gave them the address and telephone numbers where [ABA] could be reached to order checklists for their retail outlets.

**Field Trips Committee:** The 1999 field trips were discussed and Bill Fink (Chair) will submit the final list to Cynthia Melcher for publication in the *Journal*. Trips for Boreal Owls (to hear them near Cameron Pass), grouse (near Hayden), and early migration (in Lamar before the CFO convention) are planned.

**Journal of the Colorado Field Ornithologists:** Cynthia Melcher (Editor) is soliciting feedback on, and ideas for, the new "Conservation Focus" column in the *Journal*. An article on bird mortality resulting from collisions with towers, written by Bill Evans of Cornell Laboratory of Ornithology, is planned for January. Cynthia would like to form an Editorial staff and step down to an associate editor position at the end of her 3-year commitment after the January 2000 issue of the *Journal* is published. Cynthia raised, for future discussion, the appropriateness of advertising in the *Journal*. The need to establish copyright policy for the Journal was discussed, particularly for scientific articles that may be listed by UNCOVER®.

**Nominating Committee:** The Committee, which consists of Warren Finch (Chair), Karleen Schofield, and Joe Himmel, is seeking a Secretary to replace Toni Brevillier. The Board will vote by mail for the new secretary before the 7 February 1999 Board meeting.

**Ronald A. Ryder Award Committee:** Rich Levad (Chair) reported on the nominations received and requested a call for more nominations to be published in the January issue of the *Journal*. The president will confer with Rich and appoint new committee members.

**CFO Website Committee:** Rachel Kolokoff reported that the website will be updated.

### Old Business

A report from the Ad Hoc Committee for funding projects, composed of Linda Vidal, Pearle Sandstrom-Smith, and Rich Levad, was presented by Rich Levad. The Committee's recommendations to the Board of Directors were:

1. A PROJECT FUND should be established, and the earnings of that fund should be used to make grants to individuals or organizations for projects

- promote the field study, conservation, and enjoyment of Colorado birds.
2. An amount of money (not yet determined) should be transferred from the current assets of the CFO to establish the Project Fund.
  3. The Project Fund should be increased regularly by: providing a "Your Donation to the Project Fund" item on Membership Forms published in the *Journal* and on future editions of the checklist; including in the *Journal* a reminder that the CFO is a 501-C non-profit corporation and that anyone may remember the CFO's Project Fund in planning their estates and wills; designating profits from the sale of checklists to the Project Fund; periodically transferring surplus funds (those not needed for regular operating expenses) from the operating budget to the Project Fund; and depositing memorial funds into the Project Fund.

A motion made by BB Hahn, seconded by Jim Chace, to approve the Ad Hoc Committee report as modified in the meeting was passed. A motion made by Pearle Sandstrom-Smith, seconded by Bob Spencer, to form a standing committee was passed. The standing committee will consist of Linda Vidal, Jim Chace, Pearle Sandstrom-Smith, and Rich Levad. If a conflict of interest arises (e.g., a committee member requesting a grant), the Board will decide how to handle the situation.

### **New Business**

Cynthia Melcher brought up the need for ethics guidelines for the *Journal* and for the CFO as a whole. A code of ethics, similar to those adopted by the American Ornithologists' Union and the American Birding Association, would cover birdwatching behaviors, problems associated with bird feeding, violations of the Migratory Bird Treaty Act, etc. Cynthia will draft and circulate for review a Code of Ethics for the Colorado Field Ornithologists, which would be published in the *Journal* when it is first adopted and then periodically as a reminder.

The next two meetings of the CFO Board of Directors will be on Sunday, 7 February 1999 (place to be determined); and in May (date, time, and place to be determined). There will not be a Board meeting at the CFO Convention in May.

### **Adjournment**

On a motion made by Pearle Sandstrom-Smith, seconded by Rich Levad and passed unanimously, the meeting was adjourned at 2:45 p.m.

Respectfully submitted,  
Toni Brevillier



# **COLORADO FIELD ORNITHOLOGISTS' BUDGET** **Statement for 1998:** (1 January 1998 - 14 November 1998)

<b>INFLOWS</b>	
Membership Dues	5,526.00
Sales: T-shirts, journals	125.00
Convention	7,892.00
Interest	466.72
Other	<u>1,113.58</u>
<b>TOTAL INFLOWS</b>	<b>\$15,123.30</b>

<b>OUTFLOWS</b>	
CFO Journal	5,563.51
Merchandise	1,115.00
Postage	165.85
Fees	115.00
Insurance	568.00
Administrative Miscellaneous	63.65
Convention	3,268.62
Records Committee Expenses	527.30
Ronald A. Ryder Award	<u>129.61</u>
<b>TOTAL OUTFLOWS</b>	<b>\$11,516.54</b>

<b>EXCESS RECEIPTS OVER DISBURSEMENT</b>	<b>\$3,606.76</b>
Operating Checking Account Balance 12/31/97	\$9,195.92
Certificate of Deposit	\$10,466.72
Less Prepaid Memberships	\$2,160.00
<b>Net Assets</b>	<b>\$17,502.64</b>

## **Proposed 1999 Budget**

<b>INFLOWS</b>	
Membership Dues	5,030.00
Sales: T-shirts, hat pins, posters, journals	3080.00
Convention	11,985.00
Interest	<u>400.00</u>
<b>TOTAL INFLOWS</b>	<b>\$20,495.00</b>

<b>OUTFLOWS</b>	
CFO Journal	4,830.00
Merchandise	1,455.00
Postage	222.00
Insurance	568.00
Administrative	600.00
Advertising	150.00
Convention	8,614.00
Grants	1,000.00
Records Committee Expenses	180.00
Prepaid Memberships	2,160.00
Ronald A. Ryder Award	<u>150.00</u>
<b>TOTAL OUTFLOWS</b>	<b>\$19,929.00</b>

<b>EXCESS OF RECEIPTS OVER DISBURSEMENT</b>	<b>\$566.00</b>
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Respectfully submitted,  
BB Hahn

## **NEWS FROM THE FIELD: THE SUMMER 1998 REPORT (JUNE AND JULY)**

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The spring migration period seemed to protract into the summer, as evidenced by the number of early and mid June warbler reports. Gregory Canyon in Boulder County was a veritable hotspot and attracted Colorado's first nesting Hooded Warblers. Numerous other warblers spent the month of June there, as well. The Little Washington Work Station (U.S. Forest Service) in Baca County also hosted several unexpected species during the month, and a few birds lingered in the Lamar Community College Woods.

Grassland species made quite a showing this summer. Dickcissels irrupted into Colorado for the second consecutive year; the number and frequency of reports from the northern Front Range was unprecedented. Bobolinks and Grasshopper Sparrows also had strong showings in the north. Upland Sandpipers were found at two locations in Weld and Larimer counties significantly west of their normal breeding range, while their usual bastions near Crook were sparsely occupied this year. Many observers felt that Lark Buntings, Cassin's Sparrows, and Chestnut-collared Longspurs were more prominent on the Pawnee National Grassland than usual, however a few observers thought that their numbers were about normal.

In the mountains, Red Crossbills began to show up again after a long absence. Williamson's Sapsuckers made strong showings, as did Three-toed Woodpeckers. On the down side, the Indian Peaks Summer Bird Count was considered to be "very poor," both in terms of total numbers of birds observed and species seen; usually Evening Grosbeaks occur in 75% of the count areas, but for the first time since its inception seven years ago, Evening Grosbeaks were not observed at all. Two other species, the Brown-capped Rosy-Finch and the Horned Lark, have been noted as declining steadily over the years and had another poor showing in 1998.

A few outstanding rarities passed through Colorado, a Curlew Sandpiper being the highlight of them all. It will be the state's first, pending acceptance by the records committee. Similar review also will determine whether a Black-tailed Gnatcatcher reported in Mesa County will be added to the Colorado list. A strong flow of southwestern species brought at least two White-winged Doves and two Phainopeplas, while Lesser Nighthawks were reported from two

locations. Eastern species also drifted westward. This was probably best exemplified by the number of misplaced Northern Cardinals and the throng of warblers in Gregory Canyon, but two reports of Eastern Wood-Pewees also helped make the case.

I would like to thank everyone who submitted their observations this period. Enjoy the report.

**Note:** The Colorado Field Ornithologists' Records Committee would like documentation provided for the species that I have underlined in this report. I noted documentation of which I was made aware by putting an asterisk (\*) next to the documenting observers initials. If I was not been made aware of documentation, then I denoted this by putting <ND> (meaning "no documentation") after the observer's initials.

**Abbreviations used:** BBS=Breeding Bird Survey, CG=campground, Co.=county, CVCG=Crow Valley Campground, imm=immature, IPSBC=Indian Peaks Summer Bird Count, LCCW=Lamar Community College Woods, NWR=National Wildlife Refuge, PNG=Pawnee National Grassland, Res.=Reservoir, RFSWA=Rocky Ford State Wildlife Area, RMNP=Rocky Mountain National Park, SP=State Park, SWA=State Wildlife Area.

**Common Loon:** One was seen at Big Johnson Res. on 7/22 (BG) and another at Jumbo Res. on 7/24 (JM, WPL), making for rare summer sightings.

**Horned Grebe:** A bird in alternate plumage was found at Huerfano Res. from 7/8-13 (BKP, CLW, mob). The species is accidental in Colorado during the summer.

**Eared Grebe:** Four pairs were seen on nests in Unaweep Canyon on 6/13 (TL, Sbo) in Mesa Co., where the species is a rare breeder.

**Western Grebe:** Eighteen pairs with young were seen at Union Res. in Weld Co. on 7/18 (TL).

**Clark's Grebe:** Thirty pairs with young were seen at Union Res. on 7/18 (TL). It is interesting to contrast these numbers with those of the western grebes recorded at the same location.

**Great Egret:** A loner seen at Browns Park NWR in Moffat Co. on 6/6 (GCr) was a very rare sighting for that region. A rare mountain sighting came from the Buckhorn Ranger Station west of Masonville in Larimer Co. on 6/2 (JFB).

**Green Heron:** Two were seen in Grand Junction from 6/5-14 (CD, RL, mob), one in Fort Collins until 6/6 (DAL), one at Olive Marsh on 7/8 (CLW, BKP), one in Las Animas on 7/13 (DAL), one at Tamarack Ranch SWA on 7/27 (DSh, WF), and one at Red Lion SWA on 7/31 (BKP, CLW).



**Ibis:** Three adults located east of Lake Meredith from 7/9-13 (CLW, BKP, mob) <ND> were a great find.

**Red-breasted Merganser:** A male seen at Union Res. from 7/13-15 (JWe, WPt) was notable for that date.

**Mississippi Kite:** In La Junta, 37 were tallied on 7/9 (CLW, BKP) for the high count during the period.

**Northern Goshawk:** Sightings of this reclusive, rare resident are always of interest. One was seen in July east of Meeker (DHk) and one was seen on the IPSBC (fide DH). A dead bird was found at Hamilton Res. in Larimer Co. on 6/26 (RAR) after a probable collision with a window at the Rawhide Power Plant. We have no information about whether the window made it. Elsewhere in northern Colorado, one was in RMNP on 6/14 (JLF), one north of Rustic on 6/26 (DAL), and a female with fledged young was near Gould on 7/21 (RK, JDe).

**Red-shouldered Hawk:** An outstanding find was a stray in Ouray on 6/1 (RD) <ND>. This is possibly the first record on the Western Slope.

**Merlin:** One was observed at Lily Lake in RMNP on 7/21 (SRo, JRo) for a very rare summer sighting.

**Mountain Plover:** A big concentration of 140+ was found at Adobe Creek Res. in Bent Co. on 7/1 (CLW, JK, KS).

**Upland Sandpiper:** A report of a bird and nest in extreme western Weld Co. on 6/22 (MHo) would be well west of the core of the species' range in Colorado. An early migrant was noted east of Lake Meredith on 7/9 (BKP, CLW). An adult was seen west of Hamilton Res. on 7/19 (RAR).

**Whimbrel:** One at Antero Res. in Park Co. on 6/12 (TL, SBo) was a late migrant.

**Long-billed Curlew:** Three were seen along Willow Creek at PNG on 6/21 (DWb). One bird, found on 6/23 at the extreme northwest corner of the PNG (BDi), was also notable. A big group of 120 was seen at Adobe Creek Res. on 7/1 (CLW, JK, KS).

**Pectoral Sandpiper:** An early individual was noted at Huerfano Res. on 7/8 (BKP, CLW).

**Curlew Sandpiper:** Easily, the bird of the summer was a female in alternate plumage found at Upper Queens Res. in Kiowa Co. from 6/30-7/1 (DN\*, mob\*). Pending acceptance by the Colorado Bird Records Committee, this will be the 1st state record for the species.

**Franklin's Gull:** Two or three recently fledged juveniles seen at Lower Latham Res. on 7/18 (TL) were "suggestive of local nesting." No documented nesting of this species has occurred in Colorado.

**Bonaparte's Gull:** This species is a casual summer visitor in Colorado. One was seen at Barr Lake SP on 7/11 (TDi), one at John Martin Res. on 7/14 (CLW, DN), and one at Union Res. on 7/20 (TL).

**Caspian Tern:** This rare summer visitor was sighted on 7/8 at Huerfano Res. (BKP, CLW), where an adult was seen, and from 7/14-16 at Union Res. (TDi), where another adult appeared.

**Least Tern:** This species is casual everywhere in Colorado except the southeastern region, where it breeds. Three wayward individuals were detected during this summer period: one at Grand Junction from 6/2-6 (CD, RL), one at Lagerman Res. in Boulder Co. on 6/13 (PPI), and one at Chatfield Res. in July (JBH).

**Black Tern:** Upwards of 30 were seen at Neenoshe Res. on 6/13 (DAL) for a good count. More than 10 were seen near Little Jumbo Res. on 7/24 (WPL, JM). The only nest reported was one at Arapaho NWR in late July (RAR).

**Eurasian Collared-Dove:** Two continued to stay at Rocky Ford throughout the period (mob\*).

**White-winged Dove:** Two pushed north into Colorado during the period. One was seen in Arapahoe Co. on 6/24 (JRd) <ND>, and another was calling in Lakewood from 7/29-31 (CLW, BKP) <ND>.

**Yellow-billed Cuckoo:** A road-kill specimen was collected on 6/4 in extreme southeastern Rio Grande Co. near Monte Vista NWR (SHu). The species is accidental in the San Luis Valley.

**Northern Pygmy-Owl:** Two adults and three young were found in RMNP on 7/21 (SRa).

**Burrowing Owl:** A survey of all the active prairie dog towns on the PNG, including those not currently in use but occupied at least three years ago, produced 177 individuals (DWb).

**Long-eared Owl:** An unusual summer observation came from CVCG on 7/9 (fide DWb).

**Short-eared Owl:** Three observed on 7/10 west of Meeker (DHk) were a treat. The species is rare and local in the western part of the state.

**Lesser Nighthawk:** This southwestern species seems to be occurring more frequently in Colorado. Up to four were seen at Clifton from 6/5-13 (CD, mob) <ND>, and another was seen at Two Buttes Res. on 7/17 (JPr) <ND>.

**Blue-throated Hummingbird:** A male made a few visits to a feeder in Glacier View in Larimer Co. in early June (PC) <ND>.

**Red-headed Woodpecker:** One roamed to Meeker on 7/17 (DHk), where the species is accidental.

**Acorn Woodpecker:** Up to three were seen in the Durango area until 6/12 (mob) <ND>.

**Three-toed Woodpecker:** Always a good find, one was seen on the Saint Charles Trail in Custer Co. on 6/6 (BKP, GRu). The IPSBC turned up five (fide DH). Two pairs were seen regularly in RMNP during the period (mob).

**Eastern Wood-Pewee:** The Little Washington Work Station, seven miles south of Springfield in Baca Co., had a singing bird from 6/4-8 (DSv, mob) <ND>. One (possibly the same bird?) was also here in May. Another singing bird was observed at Sawhill-Walden Ponds in Boulder from 7/30-31 (BTw, mob) <ND>.

**Black Phoebe:** Two fledglings were found on 6/13 south of Uravan in Montrose Co. (TL, SBo), while two adults with three "almost-ready-to-fledge nestlings" were seen in Uravan the same day (SBo, TL).

**Eastern Phoebe:** An adult was found on a nest in Pueblo Co. on 7/7 along Burnt Mill Road (CLW), considerably northwest of known breeding areas in the southeastern part of Colorado.

**Least Flycatcher:** One was found at Prewitt Res. on 7/24 (JE).

**Ash-throated Flycatcher:** One seen at Cameron Pass in Larimer Co. was a pioneer for the species at that elevation (MSz). This was an exceptional sighting.

**Great Crested Flycatcher:** Two were found reliably at the LCCW, where nesting was confirmed (CLW), and one was seen three miles west of Lamar on 6/2 (VAT).

**Scissor-tailed Flycatcher:** One was found in DeBeque in Mesa Co. on 6/24 (CD) <ND>.

**Purple Martin:** A great find on the eastern plains, three females and an imm. were found in Sterling on 7/30 (JDe). More expected were up to seven birds found east of Meeker, where the species nested and was present until near the end of July (DHk).

**Bushtit:** One was seen near Horsetooth Res. in Larimer Co. on 6/30 (DAL). This was a rare record for the area.

**Ruby-crowned Kinglet:** A tardy bird was detected in Lamar on 6/2 (VAT).

**Black-tailed Gnatcatcher:** A male was reported from Mesa Co. on 6/6 (CD) <ND>. The species has been reported from this area in the past, however the record was not accepted by the Colorado Bird Records Committee. If documentation was submitted for this sighting and if it is accepted by the records committee, it will be Colorado's 1st record.

**Veery:** A local breeder in the mountains, one was singing at La Veta in Huerfano Co. on 6/13 (RO), one was at Tarryall Creek north of Como in Park Co. on 6/26 (TL, SBo), and two were found at the Michigan Creek CG in Jackson Co. on 6/30 (RL).

**Sage Thrasher:** A singing bird near Ward on 6/20 was unusual (WHK, GMa).

**Phainopepla:** There were two reports of this species, which is casual in Colorado. A male frequented the Penrose area from 6/3-7/26 (RWt, JWt) <ND> and a bird in female plumage was seen at Prewitt Res. from 7/23-26 (CLW, mob) <ND>.

**White-eyed Vireo:** An accidental summer visitor, one was found at CVCG from 6/9-10 (NEr, mob) <ND>.

**Blue-winged Warbler:** Accidental in summer, a male was seen in Ft. Collins on 6/5 (JM) <ND> and another male was detected in Gregory Canyon in Boulder Co. on 6/9 (DSH) <ND>.

**Golden-winged Warbler:** A male was found in Gregory Canyon on 6/12 (DN) <ND>. In Colorado, this is another accidental species during the summer months.

**Northern Parula:** A female ventured into Teller Co. on 6/6 (JJ).

**Chestnut-sided Warbler:** A male at the Little Washington Work Station in Baca Co. on 6/8 (ISv) was a late migrant. A male at Gregory Canyon from 6/15-27 (TP, mob), a male at McClure Pass in Pitkin Co. on 6/18 (JBH), and two males at McClure Pass from 6/27-28 (VZ) occurred in potential nesting habitat. The birds at McClure Pass were at a higher altitude than where they are normally encountered. A female was banded at Ken Caryl Ranch in Jefferson Co. on 7/7 (GCr).

**Black-throated Blue Warbler:** A male made an appearance at Gregory Canyon on 6/9 (DSH, mob). Two were reported during the Audubon Convention in Estes Park (fide SRO, JRo).

**Pine Warbler:** An excellent find was one at the Little Washington Work Station on 6/15 (DSv, mob) <ND>.

**Black-and-White Warbler:** Two stragglers were noted in the summer period. Lone females were seen on 6/1 at the LCCW (BKP) and on 6/5 in Greeley (NEr).

**American Redstart:** A female was seen along the Cimarron River in Baca Co. on 6/5 (MRd), a male was seen at the RFSWA on 6/6 (JMo), and a male was seen on the Mount Evans BBS on 6/28 (CLW). A pair was seen in Gregory Canyon on 6/30 (JDa) and a female was seen at Buffalo Creek in Douglas Co. on 7/30 (RK). An adult male was banded at Ken Caryl Ranch on 7/28 (GCr).

**Ovenbird:** A singing bird was found at the Cañon City Riverwalk in Fremont Co. on 7/9 (JWt, RWt). A slug of them were banded at Ken Caryl Ranch (GCr), one each on 7/23, 7/25, and 7/28.

**Kentucky Warbler:** Another amazing warbler for the summer period, a male graced Gregory Canyon from 6/6-27 (PPI, mob) <ND>.

**Hooded Warbler:** A female was found in Gregory Canyon until at least 7/31 (BE, mob), while a male was seen there through 7/15 (PG, mob). This pair represents Colorado's first nesting record for the species. A nest was found by Randy Siebert and two juveniles were found on 7/31 (BTw). Amazingly, another male was found at the McClintock Trail in Boulder Co. from 6/11-27 (PHn, BBe).

**Scarlet Tanager:** A male was seen at the LCCW on 6/3 (DAL\*) and another

male was located in Fort Collins from 7/22-23 (RK, BBH) <ND>.

**Western Tanager:** A male seen five miles south of Buckingham in Weld Co. on 6/18 (MHo) was a tardy migrant.

**Northern Cardinal:** This species made quite a showing along the Front Range this summer. A male was seen at Laporte in Larimer Co. from 6/15-17 (fide RSc). One was seen at CVCG on 6/21 (DWb). Another male was seen at Long Pond north of Fort Collins on 7/6 (RK). Farther south, a male turned up in Beulah from 7/21-23 (JFu, PF). Another individual appeared at the Wheatridge Greenbelt on 7/29 (CLW, BKP). The most noteworthy report comes from the San Luis Valley, where a singing male was seen near Blanca in Costilla Co. on 6/28 (SDt); there is only one other San Luis Valley record.

**Rose-breasted Grosbeak:** An adult female was banded at Ken Caryl Ranch on 7/13 (GCr).

**Indigo Bunting:** Two seen at La Veta on 6/13 were unexpected (RO).

**Dickcissel:** Two birds seen west of La Veta on 7/14 (PGe) were well away from areas normally occupied even in years of irruption into Colorado. In the north, there was an abundance of reports. Larimer Co. had 30+ reports while Weld and Boulder Co. each contributed four more reports.

**Rufous-crowned Sparrow:** Two were reported on the east edge of Holly in Prowers Co. on 7/27 (NGu, RGu\*). This is well north of known nesting areas.

**Fox Sparrow:** A tally of 44 was recorded on the IPSBC (fide DH).

**Bobolink:** There were four active sites in northern Colorado with a total of eight birds (fide WPL). Additionally, two males were observed near Buckeye in Larimer Co. on 7/1 (TL, SBo).

**Great-tailed Grackle:** A male was seen on 6/22 at Clifton in Mesa Co. (TL, GG). Beebe Draw south of Lower Latham Res. had the unusually high concentration of 30-50 birds in mid July (JH).

**Red Crossbill:** This species was a common sight in the northern mountains beginning in late June.

**White-winged Crossbill:** Eight were seen on 6/25 near Guanella CG below Guanella Pass (TL). A flock of 20 was seen in the Indian Peaks in late July (DH).

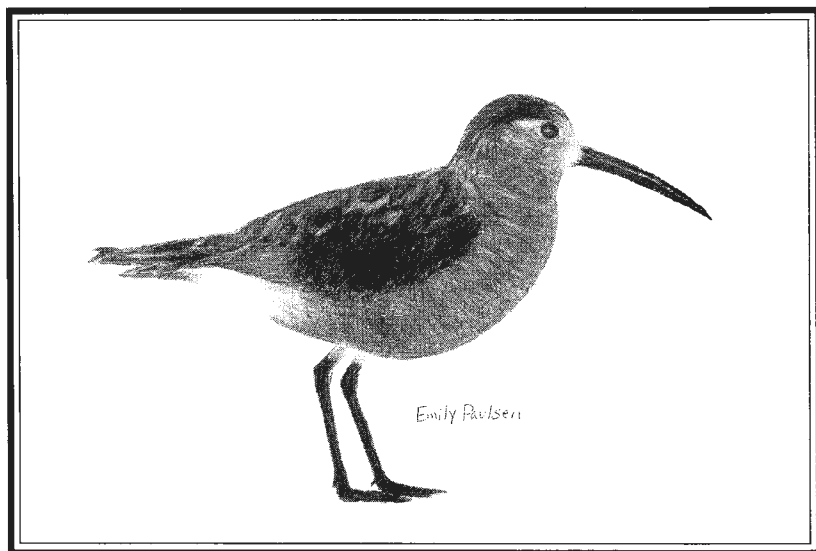
### Literature Cited and References Consulted

Andrews R., and R. Righter. 1992. *Colorado Birds: A Reference to their Distribution and Habitat*. Denver Museum of Natural History, Denver, Colorado. 442 pages.

### Cited Observers

John Barber (JFB), Barbara Beall (BBe), Sue Bonfield (SBo), Peter Clark (PC), Gary Cress (GCr), Raymond Davis (RD), Joan Dawson (JDa), Steve Deitemeyer (SDt), Jim Dennis (JDe), Coen Dexter (CD), Todd Dilley (TDi), Beth Dillon (BDi), Jake Edge (JE), Norma Erickson

(NEr), Bob Evans (BE), Jan Fanu (JFu), Warren Finch (WF), Pat Flynn (PF), Peter Geade (PGe), Peter Gent (PG), Glenn Giroir (GG), Bob Goycoolea (BG), Nancy Gustafson (NGu), Robert Gustafson (RGu), B.B. Hahn (BBH), Dave Hallock (DH), Paula Hansley (PHn), J. B. Hayes (JBH), Dona Hilkey (Dhk), Joe Himmel (JH), Melissa Howard (MHo), Scott Hutchings (SHu), Jeff Jones (JJ), Bill Kaempfer (WHK), Joey Kellner (JK), Rachel Kolokoff (RK), Joe LaFleur (JLF), David Leatherman (DAL), Tony Leukering (TL), Rich Levad (RL), Bill Lisowsky (WPL), Joe Mammoser (JM), Gary Matthews (GMa), John Monnett (JMo), Duane Nelson (DN), many observers (mob), Ric Olson (RO), Tom Parker (TP), Brandon Percival (BKP), Wayne Peterson (WPt), Peter Plage (PPI), Jon Prather (JPr), Mike Rader (MRd), Scott Rashid (SRa), Jack Reddall (JRd), Julie Roederer (JRo), Scott Roederer (SRo), Gene Rutherford (GRu), Ron Ryder (RAR), Karleen Schofield (KS), Dick Schottler (DSH), Rick Schroeder (RSc), Mike Schultz (MSz), Randy Siebert, Dan Svingen (DSv), Ila Svingen (ISv), Van A. Truan (VAT), Bill Tweit (BTw), Jim Watts (JWt), Rosie Watts (RWt), Duane Weber (DWb), Jeff Wells (JWe), Chris Wood (CLW), Vic Zerbi (VZ) There were 74 cited observers, including "mob."



Curlew Sandpiper  
by Emily Paulsen

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Use the standard reporting form on the back of the Journal mailer or use an Audubon Field Notes Mountain West form, available from Van A. Truan at 1901 Court St., Pueblo, CO 81003; phone: 719/543-4744. Standard forms are preferred because completion of all sections helps to ensure that pertinent information is included. If you submit photographs, please send two copies (records are duplicated before being sent to the Records Committee members for review). Send records of rare birds to Bill Lisowsky, Records Committee Chair, 2919 Silverplume Drive, Fort Collins, CO 80526; or send them to Colorado Bird Records Committee, c/o Zoological Collections, Denver Museum of Natural History, City Park, Denver, CO 80205.

