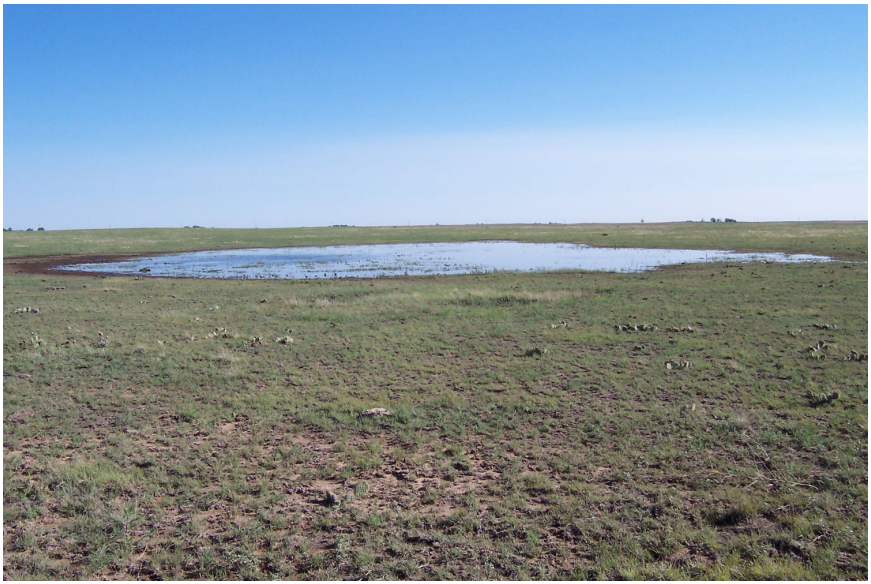
Colorado Birds

The Colorado Field Ornithologists' Quarterly



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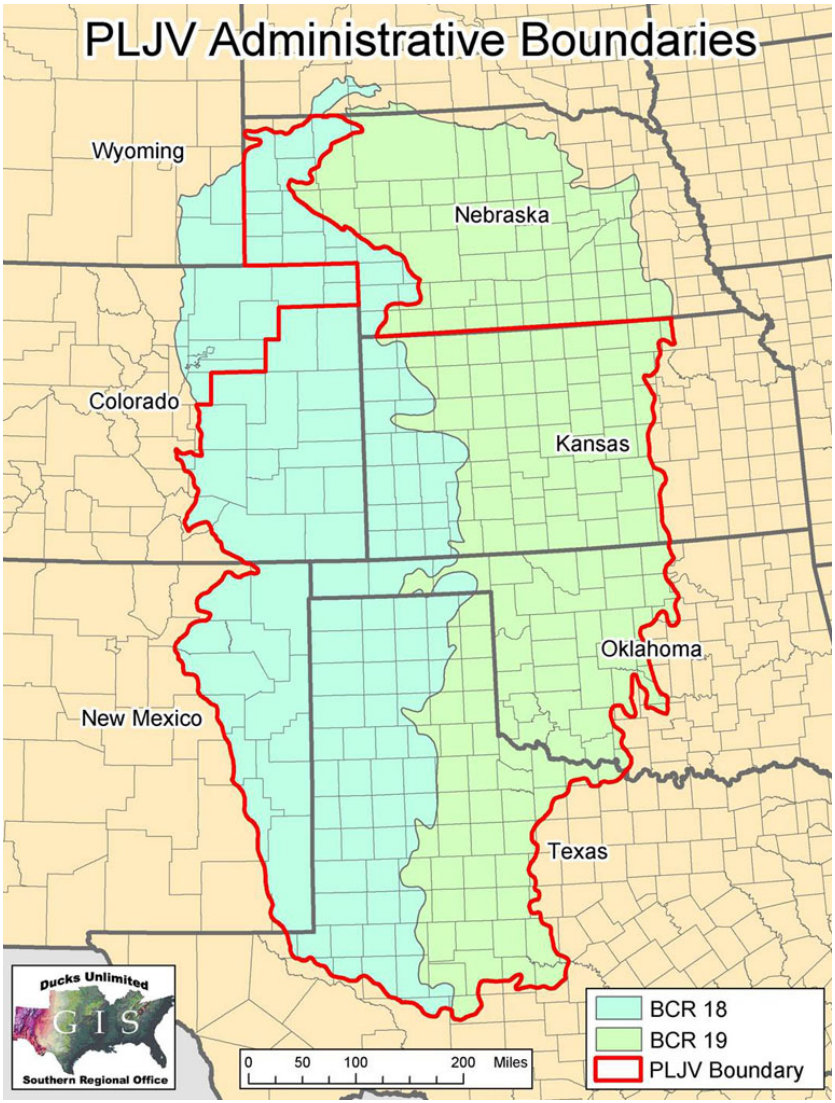
PLJV Administrative Boundaries
Wyoming
Nebraska
Colorado
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Texas
Ducks Unlimited
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0 50 100 200 Miles
BCR 18
BCR 19
PLJV Boundary

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CFO Board Minutes

Lisa Edwards, Secretary

The regular quarterly meeting was held February 19th at 10:08 A.M. Board members present were President Peter Gent, Secretary Lisa Edwards, Treasurer David Waltman, and Directors Cheryl Day, Doug Faulkner, Bill Schmoker, and Mark Peterson. Vice President Norm Lewis, Larry Semo, Rachel Hopper, and Tom McConnell sent their regrets. Also attending the meeting was Nathan Pieplow. The minutes of the December 2004 meeting were approved.

PRESIDENT'S REPORT

Peter Gent knows of no outstanding issues and feels the organization is running smoothly.

TREASURER'S REPORT

CFO's current assets are $32,652.41. The treasurer's report was approved.

CFO WEBSITE

Nathan Pieplow presented a County Birding Website proposal to the Board. The information available on the website would include detailed birding information about each of the 64 counties in the state. The cost of this will be $1,500.00. The board voted to approve the project as proposed by Nathan.

COLORADO BIRDS

Doug Faulkner reported that the January issue would be mailed soon. The April issue is filled.

CBRC

Larry Semo reported on the CBRC and on-line submissions, via email. The on-line submission and review system is up and running. Over 60 submissions have been submitted via the Internet in the pass month. The circulation of 2004 records to the CBRC will begin shortly.

Colorado Field Ornithologists

PROJECT FUND

Cheryl Day presented the project fund committee's recommendations to the Board. The Board approved the three requests that were recommended by the entire committee for a total of $2465.00. Of this $346.20 will come directly from the Project Fund and the remaining amount will come out of the general fund.

YOUTH SCHOLARSHIP FUND

After some general discussion about the Youth Scholarship Fund the Board determined that Colorado youth attending out-of-state camps can be funded. The priority, however, will be to fund Colorado youth attending camps held in Colorado.

NOMINATING COMMITTEE

Discussion was held about possible candidates to fill the vacancies that the Board will have due to several Board members' terms expiring at the 2005 convention. Bill Schmoker will contact the candidates.

AWARDS

Tom McConnell reported via email that plaques have been ordered for the 2005 convention. Peter will contact Tom about the final details for the awards discussed at the Board meeting and approved for the 2005 convention at La Junta in May.

2005 CONVENTION

The convention will run Friday, May 13th, to Sunday, May 15th. The convention activities will be held at Otero Junior College. Brian Wheeler, author of numerous books on North American raptors will be the speaker.

NEW BUSINESS

2006 Convention - Bill Schmoker will contact Western Field Ornithologists about their continued interest in a joint meeting/convention for 2006.

Cheryl Day presented some information about obtaining additional conservation protection for Fruitgrowers Reservoir and the Roan Plateau.

The Board also discussed the possibility of membership cards for members.

The next CFO Board meeting will be held on Saturday, April 23rd, 2005 in Silverthorne, CO at 11:00 A.M.

The Board meeting was adjourned at 1:00 P.M.

CFO Project Fund

The CFO Project Fund has money for grants for projects that will have a benefit to Colorado birds. The Project Fund Committee–Cheryl Day, Pearl Sandstrom-Smith, and Jim Chace–requests that the recipients of funding publish a short year-end summary of their funded work in Colorado Birds and/or present some of their findings at the CFO convention the next calendar year.

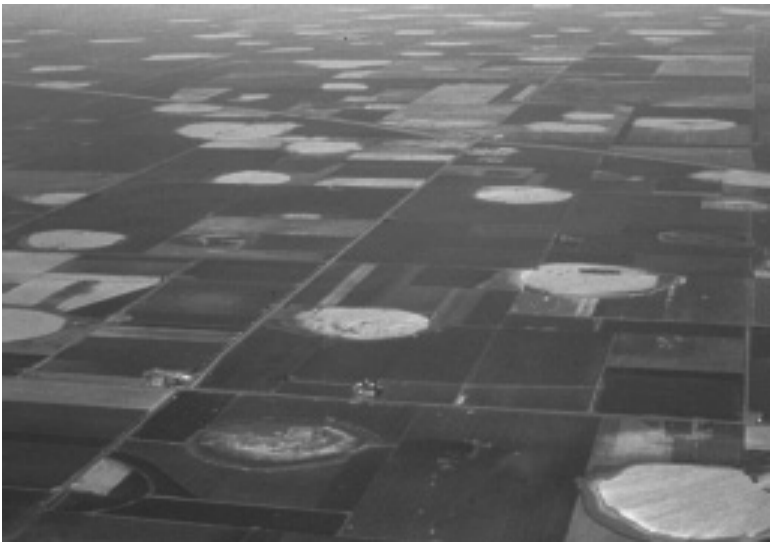
1. Applications should contain name, address, and telephone number of person or organization applying for grant.
2. Applications should include a description of the project - what will be done, who will direct the project, who will do the work, timetable, and rationale (explaining how the project will support the Mission of CFO).
3. Applications must be postmarked by December 1, and must be submitted directly to chairperson of Project Fund committee.
4. Projects must have an anticipated starting and completion date and should be realistic in terms of time required to complete project.
5. Applicants must submit a complete budget. Projects should be realistic in terms of financial and volunteer resources. Applications should contain all items that the project requires, the items for which the applicant is seeking funding from CFO, and should contain amount requested from CFO.
6. Travel expenses and equipment readily available from private sources (such as camera, spotting scopes, and office equipment) are usually not funded.
7. Applications should contain amount funded from other sources.
8. Following the receipt of a grant and completion of the project, the applicant must submit a final report, in writing, to the chairperson of Project Fund by February of the next calendar year. This report should include a full description of the project activities and an accounting of money spent.

Applicants will be notified after the March CFO Board Meeting.

Please send three copies of grant proposal and supporting materials to:
Cheryl Day
Project Fund Director
28478 Hwy. 92
Hotchkiss, CO 81419
e-mail: projectfund@cfo-link.org

Colorado Ornithologists Contribute to Regional Partnership to Conserve Birds

Deborah Slobe and Michael Carter
Playa Lakes Joint Venture
Lafayette, CO



Colorado ornithologists might not realize, but through their work they are making tremendous contributions to a longstanding partnership to conserve birds across the High Plains.

Established in 1990, the Playa Lakes Joint Venture (PLJV) is an alliance of federal and state resource agencies, conservation groups, and private industry whose mission is to conserve playa lakes, other wetlands, and grasslands for the benefit of birds in portions of six states, including eastern Colorado. The partnership extends from Colorado east of Interstate 25, to eastern New Mexico, western Kansas, Oklahoma, and Nebraska, and the Texas Panhandle (see PLJV Administrative Boundary Map on back cover) - covering about 195 million acres, or more than 300,000 square miles, which includes prairies, playa lakes, rivers, salt lakes, and other important bird habitats.

More than 500 species of birds use the variety of habitats found in the PLJV region. Playa lakes are small, shallow, seasonal wetlands found in abundance throughout the area (Fig. 1). The wetlands only hold water after heavy rainfall

or runoff events, so much of the time, they are dry. Playas are considered one of the most important wetland habitats for waterfowl in the region, hosting millions of birds during their fall and spring migrations. Species include Blue-winged Teal, which sometimes nests in the grasses around playas, and the Mallard and Northern Pintail, which migrate and winter in the region. Playa vegetation is especially nutritious for wintering ducks, and when wet, playas provide essential roosting areas (Fig. 2). Canada and Snow geese also migrate and winter in the PLJV region in relatively large numbers. Often playa watersheds are important for producing prey for raptors such as the Northern Harrier and Short-eared Owl. Most of the continent's Sandhill Cranes migrate through the region with many also wintering in the southern reaches of the Joint Venture (JV).

The region is also located in what may be the most important inland migratory corridor on the continent for many shorebirds. Some shorebird species such as the Long-billed Curlew and Snowy Plover nest in the PLJV region. Curlews breed in large grassy areas often associated with playas, while Snowy Plovers nest on saline lake beds with little water and often no vegetation. Grasslands in the region support numerous birds, including upland game birds such as the Lesser Prairie-Chicken, whose range is entirely contained in the JV's administrative boundaries. Large portions of the breeding populations of many songbirds such as the Loggerhead Shrike, Lark Bunting, and Cassin's Sparrow are also hosted by the JV.
Fig. 1. Aerial photo of playa lakes in agricultural fields. Photo courtesy of USFWS/PLJV.

The PLJV is one of seven JVs originally formed through the North American Waterfowl Management Plan (NAWMP) to conserve wetland habitat for waterfowl. Now totaling more than 16, each JV is an independent, non-partisan coalition of public and private organizations that conduct habitat conservation work in specific eco-regions important for birds, or Bird Conservation Regions (BCR). The PLJV works in the shortgrass (BCR 18) and mixed-grass (BCR 19) eco-regions, which cover portions of the aforementioned six states. All JVs combined effectively cover the entire U.S. and parts of Canada and Mexico. Since the mid-1980s, JVs have raised more than $3.2 billion to conserve more than 13.1 million acres, involving hundreds of landowners and partner organizations. Playa Lakes Joint Venture partners include: the U.S. Fish and Wildlife Service (FWS), U.S. Forest Service, Farm Service Agency, Natural Resources Conservation Service, The Nature Conservancy, Ducks Unlimited, Pheasants Forever, ConocoPhillips, and state wildlife agencies of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, and Texas. In Colorado, the PLJV also works closely with the Rocky Mountain Bird Observatory

(RMBO), Audubon Society, and dozens of private landowners.

Joint Ventures have been such a successful model for waterfowl conservation that many have expanded to cover all bird groups. The PLJV is one such partnership, working with the NAWMP, as well as Partners in Flight, U.S. Shorebird Conservation Plan, Waterbirds for the Americas, and several other national bird conservation initiatives to implement habitat conservation projects that contribute to national bird population goals. This expansion to become 'all-bird' is more efficient and effective in achieving landscape-scale bird conservation, yet also brings with it a greater demand for biological information for all species. To this end, local ornithologists greatly contribute to the PLJV's biological foundation through research, surveys, and direct participation in the PLJV planning process.
Fig. 2. Sandhill Cranes roosting in a playa. Photo courtesy of USFWS/PLJV.

The PLJV relies on data from long-running national species surveys such as the Mid-Winter Waterfowl Survey, Breeding Bird Survey, and Christmas Bird Count, as well as regional and state habitat and species-specific research projects such as the Colorado Breeding Bird Atlas to help guide bird conservation efforts in the region. Ornithologists not only contribute to the PLJV through their research but also through direct involvement on

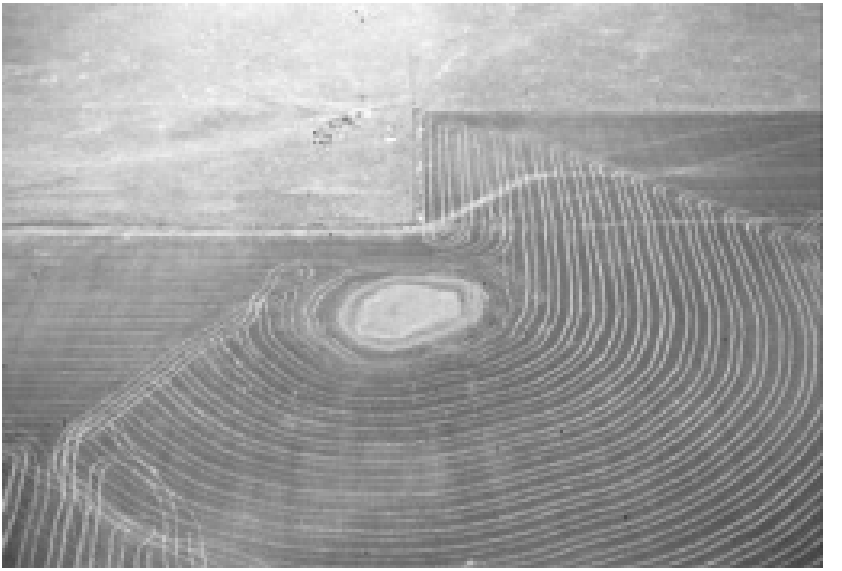


Fig. 3. Plowed cropland with buffered playa. Photo courtesy of Ted LaGrange, NE Game and Parks Commission.

PLJV bird-planning teams. In 2002, the PLJV established working groups for waterfowl, shorebirds, waterbirds, riparian, and grassland birds to assist in the JV's biological planning process. These teams are made up of avian experts from federal and state wildlife agencies, universities, ornithological societies, and conservation groups. In Colorado, representatives include those from the Colorado Division of Wildlife (CDOW), RMBO, FWS, and U.S. Geological Survey. These teams are critical in determining which species in the PLJV region warrant habitat work, developing population and habitat objectives, identifying important habitats, and developing habitat management guidelines, among other tasks. Recently, the teams participated in an update of the PLJV's Implementation Plan which replaced outdated and generic bird conservation goals with those that are species-specific and based on the best available science.

Along with biological planning, a primary activity of the PLJV is implementing habitat conservation projects on the ground. Most projects are carried out by local conservation partnerships to which the PLJV provides bird planning information, strategic guidance and financial support as part of the JV's State Capacity Grant Program. In Colorado, projects are led by the Prairie and Wetlands Focus Area Committee (PWFAC). Much like the PLJV, the PWFAC is a voluntary, non-partisan coalition of local representatives from federal and state resource agencies, conservation groups, and private industry, as well as individual landowners and community organizations, aimed at conserving wetlands and prairies in eastern Colorado.

Through the PWFAC, organizations and individuals are able to pool resources and share information on programs to take advantage of the full array of available habitat conservation opportunities. With the help of PLJV funding in 2004, the PWFAC was able to coordinate the protection, enhancement, and restoration of more than 2,600 acres of wetlands and prairies in eastern Colorado, utilizing opportunities such as the FWS Partners for Fish and Wildlife and Private Stewardship Grant Programs, CDOW's Wetlands Initiative and Colorado Species Conservation Program, North American Wetlands Conservation Act grants, U.S. Department of Agriculture's (USDA) Conservation Reserve Program, and many others. Projects have included removing pits and sediment from playas and establishing native grass buffers, removing invasive vegetation from riparian systems, and implementing rotational and deferred grazing on native range.

The funding that the PLJV provides ($20,000 per year per state) to Colorado and all its member states to increase capacity to implement projects is a reflection of the JV principle that all conservation is local. In other states, capacity funding has been used to develop similar local conservation partnerships as the PWFAC, hire staff dedicated to implementing state bird habitat conservation programs, and help fund individual habitat projects. Local implementation and voluntary efforts such as the PWFAC are essential in the PLJV region where more than 90 percent of the land is privately owned.

This private-ownership landscape also necessitates the implementation of effective communication strategies to educate landowners and local resource mangers about bird conservation issues in the region. This effort also extends to future land stewards, and the PLJV actively supports the development of teacher training workshops, summer nature camps, and resource materials for educators and students. The PLJV has helped states conduct a variety of outreach projects including landowner workshops, resource manager field days, demonstration sites, and public opinion surveys to raise awareness about bird habitat conservation and programs.

For example in Colorado, the PWFAC and PLJV recently co-hosted an informational meeting for resource managers and landowners on the Wetlands Restoration Non Floodplain Initiative (CP23a), a new practice of the USDA's Conservation Reserve Program under the Farm Bill that specifically targets the restoration of playa lakes on farmland. The initiative allocates 56,600 acres to PLJV states, which, if all are enrolled, would bring approximately $35 million to the region over the next 10-15 years. The development of the initiative was spearheaded by the PLJV and its partners in Pheasants Forever, the Farm Service Agency and U.S. Congress, and launched by the USDA in

August 2004. Although the program was a great success at the policy level, unless there is local capacity to deliver and inform landowners about it, the program would fall flat.

This scaled approach - regional biological planning and local implementation - which makes the PLJV, and all JVs, a successful model for bird conservation, is based on the individual contributions of local ornithologists, resource managers, educators, landowners, and the likes. Whether they know it or not, all play a vital role in the conservation of birds across the region and in the PLJV partnership.

For more information about the PLJV, visit www.pljv.org or call (303) 926-0777.

Hairy Woodpecker Abundance and Nest Site Selection after the Missionary Ridge Fire of 2002

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Abstract–The Missionary Ridge Fire of 2002 burned 70,662 acres in southwest Colorado. In the summer of 2003, we conducted bird censuses, monitored nests, and investigated nest site selection by Hairy Woodpeckers (Picoides villosus) around Vallecito and Lemon reservoirs, La Plata County, Colorado. We conducted censuses from 9 May through 25 July on three transects with 26 plots on unburned sites and five transects with 47 plots on burned sites. The mean number of Hairy Woodpeckers was significantly higher on burned sites (0.26 +/-0.35 individuals/plot) than unburned sites (0.07 +/-0.12 individuals/plot). All Hairy Woodpecker nests were found within the burned sites. We sampled vegetation within 12.5 m of all Hairy Woodpecker nests and at random plots. Compared to randomly available habitat, Hairy Woodpeckers selected nest sites with taller nest trees, shorter distance to nearest dead tree, higher percent of live ground matter, more dead deciduous trees (mostly dead Quaking Aspen, Populus tremuloides), and more emerging aspen saplings. The results have important implications in post-fire management of this U.S. Forest Service Management Indicator Species.

Introduction

Wildfire has been a dominant natural process creating and maintaining a variety of landscapes and biological communities (Kotliar et al. 2002, Hutto 1995, Saab and Dudley 1998). Wildfire alters the size, abundance, and distribution of many tree species and snags, significantly increasing the latter, across a landscape (Huff and Smith 2000, Kotliar et al. 2002). After a fire creates snags, a large amount of decay attracts many insects, which generate

softer snags that are excavated by cavity-nesters (Saab and Dudley 1998). Fire is important for Quaking Aspen (Populus tremuloides) regeneration, a species that appears to be the preferred nesting tree for many cavity nesters. The broken tops and holes created by fire are excellent cavities for many bird species. Hairy Woodpeckers (Picoides villosus) are an important re-colonizing species in post-fire habitats. Kotliar et al. (2002) found the abundance of Hairy Woodpeckers was significantly greater in burned areas compared to unburned areas. Hairy Woodpeckers are primary excavators (excavating many cavities later used by secondary cavity nesters) and create many cavities after a fire (Saab et al. 2004).

The Missionary Ridge Fire in La Plata County, Colorado, burned 70,662 acres (24,035 ha) of mixed conifer/aspen forest in June and July 2002. Hairy Woodpeckers were one of many species in southwestern Colorado affected by the fire. In the summer of 2003, we conducted a study on the abundance and nest site selection of Hairy Woodpeckers in burned and unburned areas. The results have important implications in post-fire management of this U.S. Forest Service Management Indicator Species.

Study Sites and Methods

We studied Hairy Woodpeckers from 9 May through 25 July 2003 in five burned sites within the general perimeter of the Missionary Ridge Fire. Three unburned sites were also selected for controls. All sites were located near Lemon Reservoir and Vallecito Reservoir in La Plata County, Colorado. The vegetation consisted of several conifer species, aspen, and a variety of shrubs. Elevation ranged from 2,363 to 2,734 m.

We conducted bird censuses five days per week from 23 May through 15 July. We established one transect in each of the eight study sites. Each transect consisted of 7-15 point count stations located approximately 200 m apart. All censuses were conducted in the morning and ended by 1200 hrs. At each plot, for five minutes, we surveyed for Hairy Woodpeckers and estimated their distances from the center of the plot. Two people observed at each point, and we varied the order in which point counts along a transect of burned and unburned sites were censussed in the morning.

We searched for nests along transects and within the 75 m of the transect on both sides. We monitored each nest until fledging. For each nest, we collected the following data: UTM coordinates, elevation, nest tree species, height of cavity, height of nest tree, and visibility of nest entrance at distances of 1 m, 2 m, and 10 m from the tree in the four cardinal directions (Filliater et al. 1994).

Additionally, we sampled the vegetation within a 12.5 m radius of all woodpecker nests. Vegetation sampling was conducted 16-25 July. Within 12.5 m of each plot, we counted and identified to species all mature trees, shrubs >50 cm in height, and tree saplings >50 cm in height, noting whether they were alive or dead. Trees were placed in the categories of: <8 cm diameter at breast height (DBH), 8-23 cm DBH, >23 to 38 cm DBH, and >38 cm DBH. Shrubs were placed in the categories of: 0.5-1 m in height and >1 m in height. Saplings were placed in the categories of: 0.5-1 m and 1-2m; we measured DBH for all trees over 2 m in height (Martin et al. 1997). We measured DBH of the nest tree, distance to the nearest water source, distance to the nearest clearing >25 m in diameter, distance to nearest log of 10-30 cm diameter, distance to nearest log of >30 cm diameter, distance to the nearest live and dead trees, DBH and heights of the nearest live and dead trees, and distance to the nearest live and dead shrubs.

For ground cover measurements, we placed two tapes on the ground at 90 degree angles, intersecting at the center of the plot. The direction for the first transect was selected from a random number generator. Starting at the center point and extending 12.5 m in each direction, at each meter along the transect (26 points for each transect, 52 total points for each plot), we determined the ground cover in the following categories: bare ground, rock, live matter, dead matter (litter), scat, dead wood (including logs, roots, and stumps), and burned wood. We categorized live matter as either grass, forb, shrub, tree, or other, and we measured the height of each. For dead matter, we measured the litter depth. We measured percent canopy with a densiometer in the four cardinal directions 6.25 m from the center of each plot along the first ground transect line. We categorized all burned plots as either moderately burned (live trees remaining) or intensely burned (no live trees remaining).

We established random plots for each nest to compare actual sites with randomly available habitat. Random sites were located 100 m in a random direction from the center of the actual plots. Random directions were selected from a random number generator. The closest tree served as the center of the random plot and we collected data for the same variables as the nest plots.

We conducted statistical analyses to compare abundance of woodpeckers in burned and unburned sites. To compare the relative abundance of Hairy Woodpeckers in burned and unburned sites, we used a standard 50-m fixed radius count (Reynolds et al. 1980) by truncating all observations >50 m. We used two-tailed t-tests, to determine if mean abundance differed between unburned and burned sites. For all nest site variables, we calculated means

or frequencies of categories. We used Discriminant Function Analysis to determine which variables were most important in predicting Hairy Woodpecker nesting habitat. We used the program DISTANCE to calculate Hairy Woodpecker density (Thomas et al. 1998). We considered a P value of 0.05 as significant for all tests.

Results

The abundance of Hairy Woodpeckers was significantly (P=0.001) higher on burned sites (n=68; mean=0.26 +/-0.35 individuals/plot) than unburned sites (n=11; mean=0.07 +/-0.12 individuals/plot). The density of Hairy Woodpeckers in burned sites was 0.31 birds/ha. All Hairy Woodpecker nests were in Quaking Aspen in burned sites, and all were successful in fledging young. The variables that appeared to be important in Hairy Woodpecker nest site selection compared to randomly available habitat included: taller nest trees, shorter distance to nearest dead tree, higher percent of live matter along ground cover transects, more dead deciduous trees (mostly dead aspen; i.e., snags), and more emerging aspen saplings (Table 1). The DBH of nest trees was not significantly larger, (n=9, mean=30.1 +/-7.1 cm) than the central tree in random plots (n=9, mean=16.5 +/-17.24 cm).

Table 1. Vegetation variables that differed significantly between actual Hairy Woodpecker nest sites and random sites within the Missionary Ridge fire perimeter, La Plata County, Colorado, 2003.

	Nest Site (n=9)	Random Site (n=9)	P
Hgt. of nest/random tree (m)	20.6 +/-5.8	10.0 +/-8.6	0.016
Snag distance (m)	0.9 +/-0.9	2.0 +/-0.9	0.002
% live ground cover	33.1	11.1	0.045
Mean # trees/transect	10.6 +/-11.8	0.8 +/-1.6	0.039
Mean # snags/plot			
8-23 cm DBH	8.8 +/-12.1	1.2 +/-3.7	0.016
>23 to 38 cm DBH	3.9 +/-4.2	1.2 +/-3.7	0.005
Total	15.1 +/-11.9	5.0 +/-8.1	0.020
Mean aspen saplings/plot			
50-100 cm (hgt.)	215.8 +/-142.5	40.9 +/-70.0	0.002
1-2 m (hgt.)	314.2 +/-330.5	19.9 +/-48.7	0.044

Discussion

Hairy Woodpeckers were more abundant in burned sites than unburned sites. Others have also identified them as being more abundant in burned forests (Kotliar et al. 2002). Hairy Woodpeckers are primary cavity-nesters and are responsible for creating many of the cavities in burned areas (Saab et al. 2004). We found all Hairy Woodpecker nests in burned sites and none in unburned sites; the fact that Hairy Woodpeckers were also significantly more abundant during the census counts in burned sites than unburned sites suggests that this is not an artifact of nests being easier to find in burned sites.

Many nests excavated by Hairy Woodpeckers are also used by secondary cavity nesters, such as the American Kestrel (Falco sparverius), chickadees (Poecile spp.), nuthatches (Sitta spp.), Brown Creeper (Certhia americana), wrens (Troglodytes spp.), and bluebirds (Sialia spp.). Thus, excavation of cavities by woodpeckers plays a pivotal role in ecosystem dynamics (Jackson and Jackson 2004).

Dead aspen trees were clearly important to Hairy Woodpeckers as all of the nests were found in burned aspen. Also, nest trees were significantly taller than central trees in the random plots. This result supports an earlier study that concluded that large trees are important for feeding and nest sites of many cavity nesters (Saab and Dudley 1998).

Snags with cavities are an important ecological component of western forests (Farris et al. 2004). The decay that occurs after a fire attracts many insects, both of which create softer snags that are more easily excavated (Saab and Dudley 1998). Many birds, mammals, reptiles, amphibians, and invertebrates use snags for foraging, roosting, and nesting sites (Bull et al. 1997).

Haggard and Gaines (2001) found the highest abundance, highest species richness, and most number of nests of cavity nesters in stand densities of 15-35 snags/ha (>25 cm DBH). An average of 21 snags/ha (>48 cm DBH) provided the highest nest density and optimal foraging for cavity nesters. We found a much higher density of snags (202/ha, >23 cm DBH). Therefore, we suggest that clumps of trees compared to uniformly distributed trees will benefit the entire cavity-nesting bird community (Saab and Dudley 1998).

Aspen communities are important to many avian communities in the Rocky Mountains (DeByle 1985). The abundance of invertebrates in aspen stands attracts many young birds for growth and development (Schimpf and MacMahon 1985, Johnson and Boyce 1990). Cavity nesters may prefer

aspen because of the Heart Rot Fungus (Phellinus igniarius) which causes a soft substrate for excavation while retaining a firm sapwood shell that gives stability for the cavity (Conner et al. 1976, Jackson and Jackson 2004).

Fire suppression has occurred since European settlement and aspens have not been able to regenerate (Rumble et al. 2001) causing many stands to be over-run by conifers. Rumble et al. (2001) showed that pure aspen stands and aspen with small communities of conifers support more bird species than pure conifer stands and conifers with small communities of aspen.

Acknowledgments

This research was supported by a Colorado Wildlife Heritage Foundation grant and a Fort Lewis College Faculty Development Grant to Catherine Ortega, and a Colorado Alliance for Minority Participation grant (sponsored by the National Science Foundation) to Joseph Ortega and Joshua Trujillo. We thank the U. S. Forest Service for their logistical help–particularly David Baker, Anthony Garcia, Albert Fischer, and Sally Zwisler. We also thank Michael Vivalda, Joshua Trujillo, and Brenna West for their assistance in the field.

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The Spread of the House Sparrow into the West, with Special Reference to Colorado - A Historical Perspective

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Introduction

Natural adaptability, deliberate release, and the ability to use human-influenced landscapes have allowed the House Sparrow (Passer domesticus) to expand its North American range westward during the early part of this century (Barrows 1889, Skinner 1904, Robbins 1973). While the spread of the House Sparrow in the eastern United States has been well-documented, the spread of the House Sparrow into the West has not (Barrows 1889, Robbins 1973). We provide here a historical perspective about the introduction of the House Sparrow into the West, with special emphasis on Colorado.

The first successful introduction of the House Sparrow into the United States occurred in New York in 1853 (Barrows 1889). Since that time the House Sparrow has expanded its range to cover most of North America (Barrows 1889, Robbins 1973, Lowther and Cink 1992). The introduction of the House Sparrow into the western United States occurred later and with less documentation. Early records of the House Sparrow in the West and Colorado are provided here to provide a historical perspective on how this species became established in Colorado.

Documentation of the historical distribution of the House Sparrow is based on extensive review of the literature, particularly the early ornithological literature for Colorado and other western states.

House Sparrow in the West

Before 1875, there were only a few successful House Sparrow colonies scattered throughout the West. Yet by 1913 at the latest, most ornithologists reported the species present in almost every county in all 22 states west of the Mississippi River (Barrows 1889, Saunders 1921, Willett 1933, Robbins 1973). Certainly, if the species was unable to adapt to a diverse number of climatic conditions, it would not have enjoyed such a rapid range expansion (Barrows 1889, Skinner 1904). The House Sparrow, however, owes most of its success to its favorable relationship with humans.

The first introductions of the House Sparrow arose from a combination of two main factors. First, Europeans recently immigrated looked favorably on the addition of a well-known bird from the Old World to their new home (Barrows 1889, Skinner 1904). Many times the House Sparrow arrived at a new location brought by humans a pair at a time (Barrows 1889). After being fed and cared for, they would reproduce and eventually form a colony (Barrows 1889). These types of introductions probably resulted from the caregivers' idea that the House Sparrow would be an aesthetically pleasing addition to their area.

Second, it was thought that the House Sparrow could control agricultural pests (Barrows 1889, Skinner 1904, Kalmbach 1940). This view helped to start the "sparrow boom" of the 1850s that resulted in the numerous introductions into the eastern United States. However, by 1914, the conclusion of these studies was that while the House Sparrow feeds its nestlings some agricultural pests, its consumption of standing grain and feed makes it a detriment to agriculture (Barrows 1889, Skinner 1904, Kalmbach 1940).

At the time it began reaching the West, the House Sparrow had a negative image and ornithologists were cautious about predicting its effect on its new home. Lowe (1895), documenting its first appearance in Colorado in 1895, was unsure of whether the House Sparrow's use of insects during the breeding season would outweigh the damage it does to grain, seeds, and fruit trees. Although the specific reason for introduction is not known, the earliest dates of known deliberate introductions into the West, such as Galveston, Texas (1867), Salt Lake City, Utah (1869), and San Francisco, California (1871), are probably due to either aesthetic reasons or their conjectured pest control qualities (Robbins 1973, Oberholser 1974, Behle et al. 1985).

Carriage roads, littered with horse manure full of partially digested grain, also played a role in the range expansion of the House Sparrow. Reports that the House Sparrow seemed to decrease following the advent of automobiles lend further support to this idea (Bergtold 1928, Weaver 1939).

Railways were probably responsible for some of the gradual range expansion, as well as some of the dramatic early appearances in isolated areas of the West. Many of the first records for the House Sparrow in the West occur along early railway routes (Barrows 1889, Cooke 1898, Kalmbach 1940, Robbins 1973, Behle et al. 1985). Railway routes often had grain scattered along them, allowing the House Sparrow to follow this supply of resources to the next town or suitable breeding site, gradually expanding its range (Barrows 1889).

Some early ornithologists believed that the House Sparrow traveled to the West via railcars (Barrows 1889, Lowe 1895, Cooke 1898, Kalmbach 1940, Robbins 1973). Various authors have suggested that the House Sparrow would roost in empty boxcars, seek refuge in freight cars during inclement weather, or feed on agricultural grain stored in the freight cars, inadvertently being transported to the railcar's destination sometimes hundreds of miles away (Barrows 1889, Lowe 1895, Kalmbach 1940, Robbins 1973). Some of the early records even note individuals having a dingy color and attribute it to their occupancy of railcars (Lowe 1895). While the earliest records in the West are attributable to direct human introduction, railways could account for some of the first records in isolated locations, like Glendive, Montana (1885), Pueblo, Colorado (1895), and Seattle, Washington (1897; Barrows 1889, Lowe 1895, Jewett 1953).

Other authors minimize the effect railways had on the spread of the House Sparrow. For example, in the early 1900s, the House Sparrow occurred in areas of Montana far from existing railroads, but with a sufficient supply of grain (Saunders 1921). Saunders (1921) believed the presence of grain to be more important than railroads in the spread of the House Sparrow. However, railways probably played an important role in bringing the House Sparrow to other places in Montana in 1885 (Barrows 1889), with a subsequent spread into more remote areas following carriage roads.

House Sparrow in Colorado

On 20 March 1890, in Fort Logan, Colorado, an ornithologist traveling in the West wrote, "The English (House) Sparrow of the eastern cities is replaced in Denver by the House Finch..." (Coale 1894). Five years later, the House Sparrow began its colonization of the state. This colonization would rapidly change the avifauna of human settlements in Colorado, from the native House Finch dominating to the exotic House Sparrow becoming just as, if not more, common.

Many of the early records for the House Sparrow in Colorado reflect the first date a naturalist visited that area. Gilman (1907), Warren (1908), and Felger (1910), for example, embarked on collecting expeditions in western Colorado and reported on the presence of the House Sparrow.

The first introduction of the House Sparrow in Colorado occurred with the release in Denver of several pairs in 1877, but these birds did not become established (Barrows 1889). The first record of the House Sparrow being established in Colorado comes from Pueblo in 1895 (Lowe 1895). Lowes notes, "It may perhaps interest your readers to know that while walking through the

town of Pueblo on February 20, I saw as many as eight individuals of Passer domesticus." Noticing their dingy appearance, Lowe believed the birds to have taken refuge (possibly to avoid adverse weather) in freight cars and arrived in Pueblo by rail. Other cities in Colorado may have also received the House Sparrow by rail. For example, the next record comes from Fort Collins in 1896 (Cooke 1898). However, the species did not reached Golden or Boulder until 1898 (Cooke 1898, Henderson 1909). It seems unlikely that the House Sparrow would have arrived in Fort Collins by traveling up the Front Range, but did not colonize Boulder or similarly populated areas along the way. The early railway system of the West did stop in Fort Collins, but we cannot be certain whether the House Sparrow arrived by rail or was released there for ecological or aesthetic reasons (Barraclough 1993). The Fort Collins and Pueblo populations may have been the source of the early populations along the foothills and in eastern Colorado, such as populations in Golden, Boulder, and Colorado Springs.

Populations from other states may have also helped colonize Colorado. The House Sparrow was first seen at Grand Junction in 1899 (Cooke 1900). Grand Junction was not on a major railway line in the early 1900s and it seems unlikely that the House Sparrow could have traveled across the Rocky Mountains from Pueblo or Fort Collins in only three or four years (Cooke 1898, Barraclough 1993). The most likely explanation seems to be that the Salt Lake City population, established by 1869, spread eastward to Grand Junction, possibly along carriage roads or cattle routes that provided food resources (Cooke 1898, Behle et al. 1985).

The House Sparrow took about 18 years to complete its spread into Colorado. By 1913, it was reported in almost every county in Colorado. The House Sparrow is now a common breeding resident throughout the state especially in urban and agricultural areas, ranging occasionally to elevations of 3,000 meters (Bailey and Niedrach 1965, Andrews and Righter 1992, Kaempfer 1998). Kaempfer (1998) notes that 91% of all Atlas observations took place in a composite of human-modified environments, including rural and urban areas, croplands, and structures such as bridge abutments.

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Double-brooding of Barn Owls in Boulder County

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In many parts of the world, including Malaysia, France, and California, Barn Owls (Tyto alba) commonly raise multiple broods (Marti 1992). However, this behavior is rare or poorly documented in the northern part of the species' North American range. In a Utah study, only 5% of pairs produced a second brood (Smith and Marti 1976). Multiple-brooding has been suspected in Colorado, but Colorado Breeding Bird Atlas volunteers did not confirm this behavior (Levad 1998).

In mid-October 1990, Jack Coss found a Barn Owl nest containing five dependent young in a radio dish on Table Mountain, in north-central Boulder County. We suspected that this might be a second brood. However, we were unable to return to this site to investigate, and we have had few opportunities since then to observe Barn Owl nests. The Barn Owl is a rare breeding species in Boulder County (Jones and Mahoney 2003), and Boulder Audubon generally receives only one or two reports per year (Boulder County Audubon Society 1979-2004).

In June 2004, we observed seven young Barn Owls on an artificial nesting ledge in a small barn five kilometers northeast of Table Mountain (elev. 1560 m). The nesting ledge had been constructed by the landowner, who reported that Barn Owls had nested in the barn during at least nine of the previous 12 years. The last of this summer's young fledged around 1 August. On 10 October we observed four more young in the nest. One of these young fledged around 20 October; the other three were found dead in and around the barn. The landowner said this was the first time she had observed multiple broods at this site.

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A Great Horned Owl Coping with Eye Injury

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On the 2002 Boulder Christmas Bird Count, I observed a Great Horned Owl (Bubo virginianus) with a significant eye injury. The bird was one of a pair that our group discovered along a cottonwood-lined ditch bordering the Gunbarrel neighborhood of northeast Boulder. The owls seemed accustomed to the frequent pedestrian traffic along the ditch trail, allowing us prolonged looks from about 15 meters away. With these extremely close views it became apparent that one bird's right eye was injured (Fig. 1 and 2). It had a cloudy appearance, lacking the glassy sparkle of the healthy left eye, and upon closer examination it appeared as though the problem was a damaged cornea or corneal membrane that was torn and/or delaminating from the eye. Its surface lacked the normal glass-smooth texture, appearing rough and crumpled, and was a translucent gray instead of being completely clear. The lower inner corner of the cornea appeared to have totally pulled away, allowing the bright yellow iris to clearly show through. The pupil was still somewhat visible through the damaged cornea but the state of the eye left no doubt that vision on that side was severely compromised or even gone.

Otherwise the owl looked fine, with well-maintained plumage and an alert affect. We moved on with a feeling of concern for the animal, wondering what fate had in store for the one-eyed predator.

That question became more than rhetorical when I re-found what certainly was the same owl a year later. On the 2003 Boulder Christmas Count, I found a Great Horned Owl with a severely damaged right eye just a few hundred meters west along the same ditch where we had our 2002 sighting. By now the entire eye was scarred over, appearing opaque milky white, completely incapable of any functional vision. The bird's other eye still appeared normal, and the owl still looked outwardly healthy with crisp plumage and a relaxed but alert attitude (Fig. 2.) Admittedly, it would be difficult to determine if the animal's body weight was normal without capturing it, but the fact that the owl was alive and kicking a year later demonstrated the remarkable fact that the loss of vision in one eye did not automatically mean a death sentence by starvation for the owl. In fact, the state of the injury when we first saw the bird would suggest that it had already been living with the problem for a while, and hopefully the owl continued its success long after last year's Christmas Bird Count. Perhaps we can re-find the owl on the successive CBCs to update its progress.

Fig. 1. Adult Great Horned Owl with injured right eye. Photo by Bill Schmoker.

I think the long-term ability of the owl to survive its injury is especially noteworthy because of the heavy reliance these predators place on acute vision. In his book, North American Owls: Biology and Natural History, Paul A. Johnsgard (1988) contends that, "Of all birds, probably no other group exceeds owl in their abilities to see under dim-light conditions…". Even among owls, the Great Horned Owl eye is extremely large relative to the size of the brain (Houston et al. 1998). The Great Horned Owl's ability to locate prey in low-light conditions is comparable to another, more thoroughly studied owl - the Barn Owl (Marti 1974). In controlled experiments, Barn Owls were estimated to have nearly 35 times the visual sensitivity of humans, and about two-thirds that of domestic cats (Curtis 1952). The loss of an eye would eliminate stereoscopic vision, hindering depth perception and its importance to target and capture prey. Great Horned Owl eyes function with "a large, almost exclusively binocular field of view" which, in addition to their low-light acuity, creates a deadly nocturnal visual detection system (Fite 1973).

Fig. 2. Photo by Bill Schmoker

So, with such an impact on the owl's reliance on vision, how did this bird survive the loss of one eye's use? First of all, owls also have remarkably acute hearing. In general, the physiology of owls has allowed their auditory sensitivity to reach the practical limits of their environments (Martin 1986). One adaptation of owls is their trademark facial disk, which gathers sound to focus onto the opening of the outer ear. The contours formed by the facial feathers serve to amplify sound similar to parabolic microphone disks. In an experiment where Barn Owls' facial disk feathers were mostly removed, the owls made large errors in prey capture (Konishi 1973, 1983). Besides possessing an incredibly sensitive auditory detection threshold, owls have a keen ability to pinpoint the source of sound using binaural hearing. In a famous series of experiments, Payne (1962) demonstrated that Barn Owls could locate and capture live mice running across the floor of a completely darkened room. While Payne suspected that differences in the relative sound intensities reaching each ear was the primary mechanism of auditory prey location, Konishi (1983) established that Barn Owls can detect time differences as small as 10 microseconds for sound reaching each ear. This allows them to pinpoint prey to within two degrees of horizontal resolution based on the arrival time differences of rustling sounds reaching each ear (Rice 1982). Owls are also noteworthy for their asymmetrically placed ears. This asymmetry enhances their ability to compare sound intensity and arrival time differences in each ear as they move their heads through different orientations. For example, the vertical ear asymmetry of Boreal Owls enables them to locate sound sources in the vertical and horizontal planes by moving their heads until the arrival time and sound intensities match in each ear, automatically aiming their eyes at the source (Norberg 1968, 1978). While Great Horned Owls have not been subjected to the types of hearing studies done on Barn and Boreal Owls, it is likely that they and other owls share the ability to detect and locate prey using multiple auditory strategies. In the case of this particular Great Horned Owl, I suspect that its hearing tactics must be playing an especially important role in prey detection and capture.

The Great Horned Owl's dietary flexibility may also play a large role in this individual's survival. Great Horned Owls have the most diverse diet of any North American raptor (Voous 1988.) Although they will consume small prey animals like mice, voles, and even insects, Great Horned Owls can take large prey items which they dismember with their talons and beaks. In the species account for the Great Horned Owl in The Birds of North America, Houston et al. (1998) summarize many studies documenting large prey consumption by Great Horned Owls including mammals as large as rabbits, prairie

dogs, raccoons, skunks, and house cats. Great Horned Owls also predate waterbirds such as ducks and coots incubating and roosting on open water at night, birds at communal roosts including Rock Pigeons and European Starlings, nestlings of large birds like American Crows and buteos, as well as other foraging nocturnal birds, particularly other owl species. In addition to the virtual riparian zone provided by the ditch where the owl was found both years, the ditch borders a large prairie dog colony to the north and a residential neighborhood with mature landscaping to the south. There are also farms and small bodies of water nearby, so all or most of the above-

mentioned large prey species should be available to this owl within its territory. Reliance on high-calorie targets like those mentioned above may play a critical role in the survival of this owl, greatly reducing the frequency of kills needed for it to survive.

The case of this one-eyed owl provides an excellent opportunity to reflect upon the specializations that make owls in general, and particularly Great Horned Owls, such effective hunters. This owl exemplifies the versatility and adaptability of the species that is reflected by their widespread distribution and success in many environments. Clearly, existing as a top predator comes with risks. Perhaps the owl's eye injury was caused by prey that reflexively clawed or bit as it was attacked by the owl. Maybe an errant twig or branch sliced the cornea during a chase and the eye later became infected. Whatever the cause, it goes to show that the knife can cut both ways - undoubtedly many a predator has starved to death after becoming injured while hunting. It does not take much to lose the competitive edge needed by a predator to survive, but apparently this Great Horned Owl had enough tricks in its bag to overcome the hardship of losing the use of an eye.

Colorado Field Ornithologists

Field Notes

Bullock's Oriole Feeding on Honey Bee Abdominal Contents

On 10 May 2004, I was birding the campground below John Martin Reservoir Dam along the north side of Lake Hasty (Bent County, CO). A male Bullock's oriole (Icterus bullockii) foraged among the yellow flowers of a mature Russian-olive (Eleagnus angustifolia), which were attended by many large flying insects of predominantly one type. The bird moved about the tree crown in a methodical manner, which aroused my curiosity and enticed me to move closer. The oriole positioned itself near flowers, selected one of the insects for capture, snapped forward with its beak, held the captured prey against a branch with its feet, appeared to feed on the prey in some manner, and dropped the remains. The sequence was repeated several times.

Repetitive feeding actions often allow interpretation. After perhaps ten minutes of the above activities, the oriole flew off. The ground under the tree was littered with at least 25 freshly killed honey bees (Apis mellifera). At first glance, these appeared to be intact. Closer examination revealed the bee abdomens were punctured and had no internal contents.

Honey bees primarily visit flowers for two reasons: to obtain nectar or to obtain pollen. Nectar, a secretion of specialized glands ("nectaries") in the flower petals, is high in sugars and is ingested by bees. Pollen, while critically important in the nutrition of honey bee colonies, is usually not ingested at the time of collection, but rather concentrated on specialized "baskets" on the hind leg tibiae. In this episode the dead bees on the ground were missing gut contents, rather than hind legs. Therefore, I conclude the bees were gathering nectar and that, in turn, this was the reason for interest by the oriole.

To quote from R. W. Shuel (in Graham 1992), "Chemically, nectar is a solution of sugars in water with minor amounts of numerous other constituents which include amino acids, organic acids, proteins, lipids, anti-oxidants, dextrins and minerals, and enzymes." The main sugars found in plant nectar are sucrose, fructose, and glucose. Plant physiologists have analyzed the nectar composition for a large number of plants and have classified nectar-producers into three or four (depending on whose scheme you use) groups. The groups are characterized by whether the above three sugars are balanced, which one is dominant, or which two are dominant. Of 889 angiosperms analyzed, Russian-olive nectar is one of only 48 with balanced sugar ratios. Studies of honey bees (Wykes 1952) show, in general, they prefer flowers with balanced nectar.

Based on bee physiology and the timing of when the oriole emptied the bees, the composition of what the bird obtained differed little from that produced directly by Russian-olive flowers. The only significant addition might have been saliva. Thus, the reason for this episode appears to be merely one of efficiency. Orioles may not be able to see and/or obtain the minute droplets secreted by the plants. And even if orioles are capable of obtaining nectar from plants (which may explain episodes involving consumption of whole flowers or petals), when the opportunity presents itself it probably requires much less energy and effort to obtain "consolidated and packaged" nectar from bee abdomens. An anthropomorphic analogy might be: ignoring the legal consequences, it is more productive to rob a few banks of bundled bills than several homes of penny jars.

Three punctured bee cadavers were collected and deposited in the Colorado State University C. P. Gillette Museum of Arthropod Diversity in Fort Collins, Colorado.

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News from the Field: Fall 2004 Report (August - November)

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Colorado weather in the Fall of 2004 was a mixed bag. August was colder and wetter than normal. Denver was 3.5 degrees (all degrees are in F) colder than average, and 42 degrees on the 28th was a record low for the day and only 2 degrees higher than the coldest August temperature ever. Denver recorded 2.84 inches of rain, compared to the average of 1.82 inches. The September temperatures were normal in Denver, but the precipitation was 1.99 inches which was again well above the normal of 1.14 inches. The October temperatures were also normal, but the precipitation of 0.86 inches was below the normal of 0.99 inches. The Denver November precipitation was 0.45 inches, which was also below the normal of 0.98inches. The November temperatures were also about normal, but the month ended on a very cold note, with -1degrees recorded on the 29th. The very cold weather over Thanksgiving and the last few days of the month froze many of the smaller lakes along the Front Range, although the larger lakes remained open throughout the Fall period of August through November.

A Yellow-bellied Flycatcher was reported from Two Buttes Reservoir in Baca County on September 2nd by three experienced observers. At present, this species is not on the Colorado State list because there is only one accepted record of this species, and that was from a single observer. Another very unusual species reported was a Zone-tailed Hawk from south of Durango, La Plata County. There are only three accepted records for this species. Another of the surprising birds seen this fall was an Ancient Murrelet found at Bear Creek Park, Jefferson County, on November 8th, and seen by a number of lucky people. Others were not so lucky because, as usual with murrelets in

Colorado, it was there for only one day. A juvenile Whooping Crane was seen near Anton, Washington County, on the evening of November 3rd, and very briefly the next morning. This is the first sighting of this species in Colorado since the spring of 1995, when another young bird was seen at Thurston Reservoir just north of Lamar.

Other unusual birds seen were up to seven Red-throated Loons, a juvenile Long-tailed Jaeger, three Ruby-throated Hummingbirds, two of which were banded near Grand Junction, seven reports of Blue-headed Vireo, reports of ten Sprague's Pipits from four different locations in the Eastern Plains and Pueblo Reservoir, a Canada Warbler, a Scarlet Tanager in Meeker, Rio Blanco County, and six reports of Purple Finches from various locations along the Front Range and Eastern Plains.

The American Ornithologists' Union recently split Cackling Goose from Canada Goose, and many were seen in Colorado this fall from all regions of the state. The Richardson's subspecies of Cackling Goose occurs most often in Colorado, but the Lesser Canada Goose also occurs. So, observers should take note of the bill size and neck length when identifying Cackling Geese.

Finally, there was a big invasion of Bohemian Waxwings into the state this fall. Reports came from western Colorado in Garfield, Moffat, Rio Blanco, and the western central counties as well. Reports in the eastern part of the state came from Adams, Bent, Boulder, Chaffee, Cheyenne, Crowley, Douglas, Fremont, Kiowa, Larimer, Prowers, and Pueblo counties.

Thanks to everyone who sent us their sightings, and to all the people who collected the postings off COBirds and elsewhere.

Note 1: The reports contained herein are largely unchecked, and the authors do not vouch for their authenticity. Underlined species are those for which the Colorado Bird Records Committee requests documentation. You can submit sightings through the website at http://www.cfo-link.org/CBRC/login.php. This is now the preferred method of submitting records. However, if you need a form, use the one on the inside of this journal's mailer.

Note 2: Commonly known locations are annotated as to county the first time each appears; county names are NOT included with subsequent records, except for locations that are situated within multiple counties where the described sighting for that location may require information on which county the observation occurred and those sites not well-known to the general birding community.

Abbreviations: Barr=Barr Lake SP, Adams; Brush Hollow=Brush Hollow Res., Fremont; Chatfield=Chatfield Res., Jefferson/Douglas; Cherry Creek=Cherry Creek Res., Arapahoe; CBR=Chico Basin Ranch, El Paso/Pueblo; CVCG=Crow Valley Campground, Weld; DeWeese=Lake DeWeese, Westcliffe, Custer; John Martin=John Martin Res., Bent; Jumbo=Jumbo Res., Logan/Sedgwick; PR=Pueblo Res., Pueblo; Res.=Reservoir; SP=state park; Union=Union Res., Weld; Valmont=Valmont Res., Boulder.

Greater White-fronted Goose: In western Colorado, 45 were seen at Highline SP, Mesa, 5-14 Nov (LA), and one at Zink's Pond, La Plata, 23 Nov (JBy). Other records of note were up to 13 at Canon City, Fremont, 6-30 Nov, (KL, m.ob.), and one at Sanchez Res., Costilla, 7 Nov (BKP, MP, TL, LE), in the San Luis Valley where this species is unusual.

Snow Goose: An estimated 200 seen in Craig, Moffat, 22 Nov (FL) was a large number for northwest Colorado.

Ross's Goose: A few were reported near the Front Range of Colorado; one was at Cherry Creek, 18 Nov (BBr, WF); two in Parker, Douglas, 26 Nov (GW), and one at Metro Lake, in Colorado City, Pueblo, 27 Nov (DSi).

Cackling Goose: The highest count reported was of 1,500 seen at Fossil Creek Res., Larimer, 13 Nov (TL).

Brant x Cackling Goose hybrid: A very odd goose at Fossil Creek Res., 13-22 Nov (GL, TL, et al.), might have been this unusual hybrid. Unfortunately, the bird was too far for photos.

Trumpeter Swan: One was seen at Highline SP, 3 Nov (DWr); one adult was at Cattail Pond and Ryan Gulch Res., Larimer, 9-22 Nov (CW, TL); and one was seen at Coors Pond, Jefferson, 28-29 Nov (IS, TSa, DF).

Tundra Swan: One juvenile at Lake Avery, Rio Blanco, 25 Oct-2 Nov (DH, VZ); three in Loveland, Larimer, 2 Nov (CW), one to two adults at Lake Catamount, Routt, 13-18 Nov (VZ, FL), three at Fentress Lake, Boulder, 16-24 Nov (NP, DWa), and one south of Craig, Moffat, 23-27 Nov (FL).

Blue-winged Teal: Two seen at DeWeese, 7 Oct (TL), were late for the mountains, and two late individuals for Colorado, were along the Arkansas River, near Valco Ponds in Pueblo, 23 Nov (BKP).

Greater Scaup: West Slope reports were one each from Confluence Park,

Delta, and Blue Mesa Res., Gunnison, 31 Oct-14 Nov (JBn, JBr). Others were two at Sands Lake, Chaffee, 5 Nov (VAT), one female at Brush Hollow, Fremont, 5 Nov-27 Nov (SM, RMi), and one female at Lathrop SP, Huerfano, 11 Nov (SM). The high count for the Eastern Plains was 13 at Douglas Res., Larimer, 13 Nov (TL).

Surf Scoter: Only 18 were reported this fall between 14 Oct-14 Nov. Three were at Lathrop SP, 14 Oct (MP, BKP); one at North Lake, Las Animas, 20 Oct (MP, BKP); one at Big Johnson Res., 2 Nov (MP); one at Vallecito Res., La Plata, 6 Nov (JBy); one at Spinney Mountain Res., Park, 7 Nov (CL, JKe); and one at Lake Beckwith, Colorado City, Pueblo, 9 Nov (DSi, DE) were of note.

White-winged Scoter: Only ten were reported this fall between 31 Oct-16 Nov. One at Chatfield, 31 Oct-1 Nov (JKe); six at Vallecito Res., 6 Nov (JBy); two at Stagecoach Res., Routt, 13-16 Nov (VZ, FL); and one at Spinney Mountain Res., 16 Nov (MP).

Black Scoter: Nine were seen in the state this fall, which is above average. One to two at Fossil Creek Res., 17-31 Oct (NK, BS, JSc); one to three at Big Johnson Res., 18 Oct-6 Nov (MP, m.ob.); one at Milton Res., Weld, 21 Oct (ABu); one at Chatfield Res., Jefferson/Douglas, 5 Nov (JKe); one adult male at Elevenmile Res., Park, 14 Nov (JKe, GW, m.ob.) and at Spinney Mountain Res., 16 Nov (MP); and finally one at Lafayette Holding Ponds, Boulder, 27-29 Nov (IS).

Long-tailed Duck: Seven were seen in the state this fall, which is about average. One and then two were seen at Six Mile Res., Boulder, 6-27 Nov (PG, MB, NK); one at Elevenmile Res., 14-16 Nov (AH, GW, Jke, m.ob.); one at Fossil Creek Res., 14 Nov (CW), one to two at Chatfield, 22-26 Nov (NK, GW); and one at PR, 28-30 Nov (BKP, LL, JBr).

Bufflehead: Two at DeWeese were unusual for Custer, 4 Nov (MP, BKP).

Common Goldeneye: Two seen at PR, 3 Aug (RMi), were early and may have summered on the reservoir.

Barrow's Goldeneye: Many were reported this fall, including a high count of 60 at Blue Mesa Res., 31 Oct-30 Nov (VZ, JBr). The furthest south report in eastern Colorado was a male at PR, 28 Nov (LL).

Hooded Merganser: Early female-type birds were seen at Metro Lake, Colorado City, 16 Aug-18 Sep (DSi, m.ob.) and also at the Aspen Terrace Pond of the Inverness Hotel, in Centennial, Arapahoe, 29 Sep (RSt).

Red-breasted Merganser: An early female was at Jumbo, 28 Aug (MB, JV, GM). One was found in northwest Colorado at Perch Pond, Moffat, 13 Nov (VZ), and a high count of 178 were at Valmont, 21 Nov (TF).

Red-throated Loon: A very good season for this species with many sightings. PR was the hotbed for this species, with reports of single birds 20-21 Oct (MP, BKP), 31 Oct-4 Nov (BKP, m.ob.), 7-8 Nov (BKP, TL, MP, LE), 20-22 Nov (BKP, m.ob.), and 26-27 Nov (RMi, LL). These sightings involve several individuals, probably three total. Other reports are one seen at Chatfield Res., 24 Oct-16 Nov (JKe, m.ob.); one was at Elevenmile Res., 14-16 Nov (JKe, GW, m.ob.); one seen at Lathrop State Park, 23 Nov (DSi) was a first for Huerfano; and finally one was seen at Union , 27 Nov (TL).

Pacific Loon: An early individual was seen at Valmont, 22 Sep (BK), and another 16 were reported in the state between 15 Oct-30 Nov.

Common Loon: The only double digit counts of this species this season were up to 13 at PR, 13 Oct-30 Nov (BKP, m.ob.) and 11 at Chatfield, 1 Nov (JKe).

Red-necked Grebe: A remarkable 12 were seen this fall between 17 Oct-28 Nov. Two at Fossil Creek Res., 17 Oct (NK); one at PR, 19-24 Oct (BKP, m.ob.); one at Cherry Creek, 29 Oct (GW, MP, ABu, BKP); one at Boulder Res., 1-3 Nov (JV); one at Grand Junction, 2-27 Nov (DWr); one at PR, 2-4 Nov (BKP, m.ob.); one at Chatfield, 3-6 Nov (BSp, CL); one at Brush Hollow, 24-27 Nov (RMi, SM, MP) - a first for Fremont, and two at PR, 28 Nov (LL).

American Bittern: Late single birds were seen at Union, 15 Oct (ABu), at Denver, 25 Oct (CTK), and at Fort Lyon, Bent, 12 Nov (DN).

Least Bittern: One was heard calling at a now regular location near Fort Lyon, 10 Aug (DN).

Great Egret: On the West Slope, singles were seen at Fruitgrowers Res., Delta, and at Gunnison, 24 Sep-15 Nov (AD, VZ, RMy); and a late individual was at Rocky Ford, Otero, 23 Nov (SO, DN).

Snowy Egret: A late individual was seen at Boxelder Res. #3 and Smith Lake, Larimer, 13 Nov (TL).

Cattle Egret: Two late birds were seen at Silt, Garfield, 11 Nov (VZ).

Green Heron: Most of the reports of this species this season came from Pueblo, Fremont, and Huerfano, where the species breeds in small numbers. Other reports were up to three at Grand Junction, 1 Aug-5 Sep (LA) - nested there this year; and one at Sawhill Ponds, Boulder, 31 Aug-1 Sep (JTa, DWa).

Yellow-crowned Night-Heron: A juvenile seen at Clark Res., Huerfano, 24 Aug (MP, BKP, DSi) is the first for Huerfano.

Glossy Ibis: A juvenile seen at Prewitt Res., Washington, 22 Aug (BS, TF) is one of the few records in fall for Colorado.

Mississippi Kite: One was reported by an out-of-state birder at Eastlake Res. #3, Adams, 2 Aug (fide RSe).

Northern Goshawk: Rare on the far eastern plains, an adult was seen on the west side of Jumbo, 13 Nov (LS), and an immature was seen at Lamar, Prowers, 18-19 Nov (DAL, DN).

Zone-tailed Hawk: One seen south of Durango on La Plata CR 217, 20 Sep (ARi) would be Colorado's fourth state record, if accepted by the CBRC.

Broad-winged Hawk: This species is much rarer in fall than in spring. All reports this fall were of single birds; at Old Lake Isabel Road, Pueblo, 13 Aug (DSi); Montezuma, 23 Sep (M&DH); Bonny Res., 3 Oct (CL, JKe, DSc, RLz); Jackson Res., 3 Oct (NK); Nucla, Montrose, 7 Oct (CD, BW); Lamar, 8 Oct (DR); and near Greenland, Douglas, 29 Oct (ABu).

Merlin: Very early was an individual seen at Nucla, 4 Aug (CD, BW).

Peregrine Falcon: The latest of the season was a bird seen at Rocky Ford, 6 Nov (VAT).

Sandhill Crane: Early was one seen at Monte Vista NWR, Rio Grande, 25 Aug (MP, JPe), and the latest were nine east of Walsenburg, Huerfano, 12 Nov (DSi).

Whooping Crane: A juvenile was seen near Anton, Washington, 3-4 Nov (BBo, MS, PW). The bird was photographed and is the first of the species in Colorado since the spring of 1995.

Juvenile Whooping Crane in a playa near Anton, Washington, with a much smaller Sandhill Crane. Photo by Peter Walker on 4 Nov 2004.

Black-bellied Plover: An early individual was seen at PR, 3 Aug (RMi) and the last was one at Neenoshe Res., 8 Nov (DN). Rare in western Colorado, one was seen at Wolford Mountain Res., Grand, 24 Sep (FL); one was at Silt, 26-30 Sep (VZ, TMc, AD), one at Fruitgrowers Res., 26-27 Sep (VZ, JBn); and one was seen in the San Luis Valley at Smith Res., Costilla, 26 Aug (MP, JPe).

American Golden-Plover: Only five were reported this season. One was seen at Jumbo, 11 Sep (MP, ABu); one in alternate plumage was at Marston Res., Denver, 21 Sep (BG); one in Grand Junction, 24 Sep (DWr); one in alternate plumage was seen at Barr, 28 Sep (BG); and one was at Chatfield, 1-7 Oct (JKe, GW, m.ob.).

Snowy Plover: A season high count for northeast Colorado were eight at Prewitt Res., 22 Aug (BS, TF, MB), and the last of the season were six at Lake Cheraw, Otero, 3 Oct (TL, JV).

Semipalmated Plover: West Slope reports of this species were two at Spring Creek Res., Eagle, 27 Aug (VZ, FL); two at Ridgway Res., Ouray, 4-22 Sep (CK, CD, BW); and one at Rio Blanco Res., 5 Sep (DH).

Mountain Plover: Rare in western Colorado, one was seen near the Utah State Line, Mesa, 26 Aug (RLa); and late were 60 in Baca, 20 Oct (JTh).

Upland Sandpiper: West of normal, one was seen at Pueblo West, Pueblo, 20 Aug (BKP).

Long-billed Curlew: Late was one seen at Lake Meredith, Crowley, 23 Oct (MP).

Marbled Godwit: West Slope reports were one seen at Ridgway Res., 4 Sep (CD, BW), and one at Rio Blanco Res., 5 Sep (DH). The last in the state was one at Lake Meredith, 23 Oct (MP).

Ruddy Turnstone: Three were seen at Jumbo, 11 Sep (MP, ABu); one at Prewitt Res., 11 Sep (LE, MB, BK, GM); and one was at Sombrero Marsh, Boulder, 22 Sep (SP).

Red Knot: The only report was of three seen at Jumbo, 11 Sep (MP, ABu).

Sanderling: In western Colorado, two were seen at Spring Park Res., Eagle, 16-17 Aug (VZ, TMc).

Semipalmated Sandpiper: West Slope reports were of two seen at Narragu

innep, Montezuma, 5 Aug (JBy, SA, PD); one at Rio Blanco Res., 15 Aug (AD, VZ); and one seen at Spring Creek Res., 18 Aug (VZ).

Least Sandpiper: The last were two seen in Kiowa, 7 Nov (DN).

Pectoral Sandpiper: West Slope and mountain reports were: two seen at DeWeese, 21 Aug (BKP, m.ob.); up to eight at Silt, Garfield, 23-30 Sep (AD); five at Wolford Mountain Res., 24 Sep (FL); and two at Pastorius Res., 11 Oct (JBy). The last one was at Ramah SWA, 5 Nov (MP).

Dunlin: One was seen at Jumbo, 11 Sep (MP, ABu); one at Neenoshe Res., 20 Oct (DN); and one seen at Jackson Res., Morgan, 31 Oct (NK, CW).

Stilt Sandpiper: The only West Slope report was of a single bird at Spring Creek Res., 18 Aug (VZ).

Buff-breasted Sandpiper: One was photographed at CR U just west of CR 39, Lincoln, 20 Aug (MP), and another was seen at John Martin, 23 Sep (DN).

Short-billed Dowitcher: Seven juveniles were reported in eastern Colorado between 2 Sep-3 Oct, with one also seen at DeWeese, 21 Sep (MP, BKP) - a first for Custer.

Red Phalarope: One was seen at Jackson Res., 22-26 Sep (BG, NK, BBr), and another was photographed at Lake Henry, Crowley, 8-10 Oct (MP, BKP, m.ob.).

Pomarine Jaeger: One intermediate-plumaged bird was seen at PR, 13-25 Oct (BKP, MP, ABu, m.ob.); one light adult was at Cherry Creek, 24 Oct (BR, TL, NG); and another intermediate-plumaged bird was at Luna Res., Weld, 24 Oct (MB, LE, JKl).

Parasitic Jaeger: One adult was seen at Union, 5 Sep (SSe, m.ob.); a light adult was at Boulder Res., 28 Sep (TF); and one light juvenile was at Luna Res. and Road 11, Broomfield, 31 Oct (JV, TL, NG).

Long-tailed Jaeger: A juvenile was seen at Fossil Creek Res., 19 Sep (RHa, RHo).

Little Gull: A first-year bird was photographed at Brush Hollow, 15 Oct (MP, BKP, SM) - a first for Fremont; an adult was in Parker, Douglas, 15-17 Nov (GW, m.ob.), and probably the same bird was seen at PR, 17-25 Nov (BKP, m.ob.); and finally a first-year bird was at the Rocky Ford Valco Ponds, Otero, 23 Nov (SO).

Bonaparte's Gull: West Slope and mountain reports were one seen at Highline Res., Mesa, 31 Oct (DWr); one at Fruitgrowers Res., 3 Nov (JBn); two seen at DeWeese, 4 Nov (MP, BKP); and two at Craig, 5 Nov (FL).

Mew Gull: A first-year bird was seen at Valmont, 21 Nov (TF) and perhaps the same bird was at Union, 22 Nov (JPr); a returning adult bird was at Jim Hamm Pond, Boulder, 24-27 Nov (LM, GW, m.ob.); and a first-year bird was at Lake Beckwith, Colorado City, 29 Nov (DSi).

Herring Gull: The earliest report was an adult at John Martin, 3 Oct (DN), and on the West Slope, one was at Rifle Gap Res., 7 Nov (TMc).

Thayer's Gull: It was a slow season for this species, with only two reported. An adult was seen at Long Pond and Terry Lake, Larimer, 12-27 Nov (DSm, CW), and an adult was at Union, 27 Nov (TL).

Lesser Black-backed Gull: There were ten reports of this species in the fall; most reports were from the north Front Range of Larimer and Boulder. An early individual was seen at Jackson Res., 22 Sep (BG).

Glaucous Gull: A first-year bird seen at Douglas Res. and Long Pond, 13-27 Nov (TL, RHo) was the only report of this unusual fall species.

Great Black-backed Gull: An adult made a brief stop at Big Johnson Res., 25 Oct (LF); and it was at PR, 26 Oct-30 Nov (RMi, BKP, m.ob.); a second-year bird was at Terry Lake and Long Pond in Fort Collins, 6-25 Nov (RHo, BS) and at Union, 25-27 Nov (BS, TL); and a first- or second-year bird was seen at PR, 8-9 Nov (BKP).

Sabine's Gull: A total of 38 of this cool pelagic gull were reported in the state this fall between 11 Sep-25 Oct. This included some in western Colorado: two in Grand, and singles in Mesa, San Miguel, Delta, and Ouray. Single birds were also reported from Huerfano and Fremont Counties, where this species is rare.

Black-legged Kittiwake: A juvenile was seen at Lon Hagler Res., Larimer, 13-24 Nov (NK, CW, DB), and probably the same bird was at Lagerman Res., Boulder, 27-28 Nov (SR, RSe).
Juvenile Black-legged Kittiwake at Lon Hagler Res., Larimer. Photo taken by David Waltman on 16 Nov 2004.

Caspian Tern: This species is usually seen more in spring and summer than in fall; the only reports were two seen at Jumbo, 11 Sep (BS, BK, m.ob.), and one seen at Fruitgrowers Res., 24 Sep (AD).

Common Tern: This regular fall migrant was seen in eastern Colorado

between 22 Aug-16 Oct. Western Slope reports were one at Connected Lakes SP, 9 Sep (LA), and one seen west of Hayden, Routt, 2 Oct (FL).

Arctic Tern: One was at Poudre Res. #3, Larimer, 22 Sep (RHo); one was in Canon City, 29-30 Sep (SM) - a first for Fremont; and another was at Lathrop SP, 14-15 Oct (MP, BKP; DSi, DJ) - a first for Huerfano. Both the Fremont and Huerfano birds were photographed.

Forster's Tern: The last bird reported was one seen at Lower Latham Res., Weld, 31 Oct (NK, CW).

Least Tern: The only reports were a bird seen in Kiowa, 14 Aug (GW), and one seen at John Martin on the late date of 25 Sep (NP).

Black Tern: The last were three seen at Lake Meredith, 2 Oct (TL, JV).

Ancient Murrelet: One was photographed at Bear Creek Regional Park, Jefferson, 8 Nov (MHe, m.ob.). This was the first bird seen on a lake in Colorado since the individual at Chatfield Res. in 1995.

Eurasian Collared-Dove: A first for Routt, seven were seven miles south of Hayden, 28 Aug (TMy).

White-winged Dove: This species is now resident in Colorado. Fall reports were from two to three in Colorado Springs in Mark Peterson's yard, 1 Aug-30 Nov (MP); one in Walsenburg, 24 Aug (BKP); one in Pueblo, 2 Nov (MA); and up to 14 seen in Rocky Ford, 6-30 Nov (SO).

Inca Dove: Up to four were seen in Lamar, Prowers, 16 Aug-30 Nov (JTh, m.ob.); up to 12 were in Rocky Ford, Otero, 2 Sep-10 Nov (SO); and one was seen in Kit Carson, Cheyenne, 21 Nov (TL) - a first for Cheyenne.

Ground-Dove species: A ground-dove of unknown species was seen briefly at John Martin Res., 18 Oct (SO). Despite searching, the bird was not refound. This is the first report of a ground-dove in southeast Colorado.

This recently fledged White-winged Dove was photographed in Rocky Ford, Otero, on 4 Aug 2004. Photo by Stan Oswald.

Barn Owl: This species is rare in the mountains, but one was seen at the excellent vagrant trap of Sands Lake in Salida, Chaffee, 30 Sep-4 Oct (RMi, SY).

Western Screech-Owl: This species is very unusual north of Monument Hill in eastern Colorado, but one was reported from Golden, Jefferson, 11 Aug (IS).

Northern Pygmy-Owl: The high count was seven at Missionary Ridge, La Plata, 30 Oct (LS).

Boreal Owl: The only report this season was one at Ripple Creek Pass, Garfield, 5 Sep (DHi).

Northern Saw-whet Owl: The only report from the plains this season was one banded at Barr, 11 Oct (BG).

Lesser Nighthawk: One was seen in Springfield, Baca, 6 Sep (NK), and another was near Durango, 9 Oct (LS).

Common Poorwill: The only reports from the Eastern Plains were one seen at CVCG, 24 Sep (JKe), and two seen at Barr, 28 Sep (BG).

Black Swift: Eastern Colorado reports of this species were one to three at Lake Beckwith in Colorado City, 7-24 Aug (DSi, m.ob.); two to six at Metro Lake in Colorado City, 7-24 Aug (DSi); and five at Barr, 27 Aug (JBn, TL).

Chimney Swift: This species is rare in the San Luis Valley, but two were seen at Monte Vista NWR, Rio Grande, 25 Aug (MP, JPe).

White-throated Swift: A large group of at least 300 were seen at Eldorado Canyon, Boulder, 4 Sep (BS, DSt).

Ruby-throated Hummingbird: There were an amazing three birds seen in Colorado this fall. Two of them were banded (D&SB) in Western Colorado, at Palisade, Mesa, 28 Aug (juvenile male) and 9 Sep (subadult); and the other was at Hatchet Ranch, north of Colorado City, Pueblo, 18 Sep (BBH).

Black-chinned Hummingbird: Up to four were coming to feeders in Lamar, where they breed during the summer, 8 Aug-19 Sep (JTh, DAL), and one was seen at the Lamar Community College, 17 Aug (DR). Tina Jones reports that this species was very late this year at her yard in Littleton, Jefferson, and was only present between 29 Sep-11 Oct.

Calliope Hummingbird: This species is rare on the far eastern plains, but a male was seen at Las Animas, 6 Aug (DN), and a female was photographed south of Lamar, 23 Aug (J&JS).

Rufous Hummingbird: Very late was an adult male seen in Nucla, Montrose, 4 Nov (CD, BW).

Red-bellied Woodpecker: This species is much rarer in southeast than in northeast Colorado. Reports this season were two at Hasty Campground, 6 Oct-30 Nov (DN); a male at Fairmount Cemetery in Lamar, 16 Oct-21 Nov (SM, DAL); a female at Two Buttes Reservoir, Baca, 25 Oct (DAL); and a male much further west at Colorado City, 27 Nov (DSi).

Williamson's Sapsucker: A female was seen at Colorado City, 9 Nov (DSi); a male was at Hatchet Ranch, north of Colorado City, 9 Nov (BBH); a female was seen in Canon City, 12 Nov (MP); two females were at the Holy Cross Abbey in Canon City, 15-19 Nov (SM); and a female was in Centennial Park in Canon City, 21 Nov (SM).

Yellow-bellied Sapsucker: An adult male was seen at Van's Grove, east of Fort Lyon, Bent, 23 Sep (DN); an adult female was at Lake Beckwith, 24 Oct (DSi); one was at Greeley, Weld, early Nov to 23 Nov (NE); one was at Lakeside Cemetery in Canon City, 20 Nov (SM); a juvenile female was at Lake Beckwith, 22 Nov (DSi); and finally one adult male was at Pueblo City Park, 29 Nov (MY).

Red-naped Sapsucker: The furthest east on the plains was a male seen at Two Buttes Res., 17 Oct (SM), and late was a male seen at Lathrop SP, 7 Nov (BKP, TL, MP, LE).

Eastern Wood-Pewee: Reported this season were individuals at Barr, 6 Sep (BG), and at Prewitt Res., Washington, 11 Sep (BK, GM, m.ob.).

Yellow-bellied Flycatcher: A carefully studied empidonax at Two Buttes Res., Baca, 2 Sep (DN, BKP, MP), really looked good for this species, although the bird did not call.

Least Flycatcher: The only reports this season were two at Kinney SWA, Lincoln, 20 Aug (MP), and one at Monte Vista NWR, 25 Aug (MP, JPe), which is a rare San Luis Valley sighting.

Gray Flycatcher: Rare in fall in eastern Colorado, reports this season were one at CVCG, 28-29 Aug (KK, CW, AJ); one in Lamar, 2 Sep (DR); and one at Valco Ponds in Pueblo, 11 Sep (DSi, LBr, m.ob.).

Black Phoebe: The only reports of this species were of single birds at Canon City, 22-31 Aug and 22-23 Sep (SM).

Eastern Phoebe: Fifteen were reported in eastern Colorado, 22 Aug-5 Oct.

Vermilion Flycatcher: A singing male was seen at the Colorado State Fair Grounds in Pueblo, 24 Aug (VAT).

Ash-throated Flycatcher: Rare in northern Colorado was one seen at Doudy Draw, Boulder, 6 Aug (IS), and the last report was one at Chico Basin Ranch, Pueblo, 2 Oct (TL, JV).

Great Crested Flycatcher: Seven were reported this season, all single individuals. The reports were from Castle Rock, Douglas, 21 Aug (GW); Prewitt Res., 22 Aug (TF, BS, MB); Neenoshe Res., 2 Sep (MP, DN, BKP); Lamar Community College, 5 Sep (DAL); Sands Lake, near Salida, 11 Sep (TL, SY) - a first for Chaffee; Dixon Res., Larimer, 13 Sep (RHo); and Jackson Res., 2 Oct (BG).

Cassin's Kingbird: Northeast Colorado reports were one at Doudy Draw, 4 Sep (BS, DSt); one at Dixon Res., 13 Sep (CW, NK); one at Jackson Res., 26 Sep (NK); and six at Red Lion SWA, Logan, 26 Sep (JKe, RLz, CL).

Eastern Kingbird: Late was one seen at Brush Hollow, 5 Oct (MP).

Scissor-tailed Flycatcher: The only report was a bird seen at the Fairmount Cemetery in Lamar, 9-10 Sep (DR).

Northern Shrike: The first report this fall was of a first-year bird at PR, 23 Oct (BKP).

Bell's Vireo: The only report was one seen at Columbine Park in Sterling, Logan, 11 Sep (BK, GM, m.ob.).

Gray Vireo: A very surprising report was one seen well out of range at Tucker Lake in Arvada, Jefferson, 7 Sep (CC).

Cassin's Vireo: This species was reported from all over the state between 10 Aug-12 Oct. Reports of this species in October should be carefully documented because Blue-headed Vireo also occurs then.

Blue-headed Vireo: A very good season for this species with seven reports. Singles were seen at Barr, 2 Oct (BG); Neenoshe Res., Kiowa, 4 Oct (MA); Ramah SWA, El Paso, 9 Oct (MP, BM); south of Lamar, Prowers, 19-20 Oct (J&JS); Nissen Res., Broomfield, 24 Oct (MB, LE, JKl); Colorado City, 25 Oct (DSi); and south of Lamar, 16-18 Nov (J&JS, JTh, DAL).

Red-eyed Vireo: Only six were reported this season. One to two seen at the South Mesa Trail, Boulder, 14-25 Aug (PH, EZ); one seen at Chatfield, 19 Aug (GW); one at Chico Basin Ranch, 26 Aug (MP); one at Barr, 4 Sep (IS, TSa); and one seen east of Fort Lyon at Roads JJ and 16, Bent, 3 Oct (DN).

Gray Jay: This species is very rare away from the higher mountains, but one was at 6,700 feet elevation in Stratton Open Space, El Paso, 15 Sep (ABu), and one was seen in Fort Collins, 5 Oct (RHo).

Steller's Jay: A lost bird found its way to Rocky Ford, 28 Nov (SO).

Blue Jay: A very large count of 150-200 birds were south of Lamar, 3 Oct (J&JS).

Western Scrub-Jay: The furthest east report this season was a bird at Ordway, 17 Nov (MP).

Pinyon Jay: Four were at the odd location of Barr, 8 Sep (TL, BG).

Clark's Nutcracker: Very surprising was one bird on the northeast plains at Red Lion Road, Logan, 18 Sep (JKe, RO, GW, DSc); others were seen in Kansas and Oklahoma this season.

Cliff Swallow: The last report was at Grand Junction, 9 Oct (LA).

Barn Swallow: The last report was at Lake Beckwith, Colorado City, 13 Oct (DSi).

Black-capped Chickadee: This species is almost completely gone from the southeast Colorado plains, east of Pueblo County. The only report from this region was one seen in Rocky Ford, 29 Nov (SO).

Mountain Chickadee: Early for the plains was one in Mineral Palace Park in Pueblo, 7 Aug (VAT). Other Eastern Plains reports included: one at CVCG, 24 Oct (WF); one at Jackson Res., 31 Oct (NK, CW); and one at La Junta City Park, Otero, 6 Nov (VAT).

Bushtit: Flocks of Bushtits were found on the plains of eastern Colorado this season. Reports were from two locations in Bent, 12-25 Nov (DN); in Adams, 16 Nov (TL, BG); and two locations in Crowley, 17 Nov (MP).

Red-breasted Nuthatch: The first fall reports of the species on the plains were in July, and they were seen throughout the season in various locations on the Eastern Plains.

White-breasted Nuthatch: The eastern type were reported again this season, with singles at Colorado City, 6 Nov (DSi), at Las Animas, 8-29 Nov (DN); and two more in Lamar, 19 Nov (DAL).

Pygmy Nuthatch: This is the rarest of all the nuthatches on the plains. There were reports of single birds seen at Hatchet Ranch, 6 Aug (BBH); Fairmount Cemetery, Lamar, 6 Sep (DAL) - a first for Prowers; and in Pueblo City Park, 11 Sep-29 Nov (BKP, MY, m.ob.).

Canyon Wren: This species is rare in the Wet Mountain Valley, but singles were seen at Hillside, Custer, 9 Aug (JPd), and at DeWeese 14 Oct (MP, BKP).

Carolina Wren: One was regularly observed at the Lamar Community College for much of the season, 6 Sep-30 Nov (DAL, m.ob.).

House Wren: A late individual was seen at Clifton, Mesa, 12 Nov (LA).

Winter Wren: This species was scarce this fall, but a very early report was of one in Buena Vista, Chaffee, 2-5 Aug (MM, JSr). Other reports were singles at Two Buttes Res., 25 Oct (DAL), and in Bent, 25-30 Nov (DN).

Sedge Wren: The only one was seen at John Martin, 17 Oct (DN, JTh).

Golden-crowned Kinglet: Early for the plains were two at Fairmount Cemetery in Lamar, 6 Sep (DAL, JTh, DR).

Hermit Thrush: The last report was of one at Trinidad Lake, 12 Nov (SM).

Wood Thrush: The only one was reported by a visiting birder at Lake Estes YMCA, Larimer, 6 Oct (fide RHo).

Varied Thrush: A male was near Carbondale, Garfield, 5 Nov (JBl), and a female flew into a window below John Martin, in Nov (fide DN).

Gray Catbird: November singles were seen at Rocky Ford, 5 Nov (SO), and at Boulder, 18 Nov (NP).

Northern Mockingbird: Birds in unusual locations were one seen at Lathrop SP, 23 Nov (DSi), and one in Grand Junction, 26 Nov (fide CD).

Sage Thrasher: Late reports were one seen at DeWeese, 4 Nov (MP, BKP), and another seen in Lyons, Boulder, 22 Nov (DWa).

Brown Thrasher: Rare in the Wet Mountain Valley, one was seen there on 21 Aug (BKP, m.ob.); and late singles were at Two Buttes Res., 25 Oct (DAL), and the Paulsen's farm, north of Lamar, through the end of the season (LP).

Curve-billed Thrasher: The only odd location, a single Curve-billed was seen at the Lamar Community College, 19 Nov (DAL).

Sprague's Pipit: One was seen at Ramah SWA, 9 Oct (MP, BM); up to five seen east of Bonny Res., Yuma, 10-16 Oct (NP, HA, m.ob.); three at John Martin Res., 18 Oct (DN); and one seen at PR, 25 Oct (BKP).

Bohemian Waxwing: The big invasion this fall started with one seen in Kit Carson, 5 Nov (GW, LK, TL, MP, NG).

Blue-winged Warbler: Rare in the fall, a late individual was seen at Castlewood Canyon SP, Douglas, 11 Nov (SSh).

Golden-winged Warbler: Rare in the fall, a male was seen at Two Buttes Res., 6 Sep (NK).

Tennessee Warbler: Only four were reported this fall. One was north of Mancos, Montezuma, 5 Aug (PD, SA, JBy); one was along the Animas River in Durango, 14 Sep (JBy); one was seen at Van's Grove, east of Fort Lyon, 8 Oct (MP, BKP); and one at Jim Hamm Pond, 17 Oct (JBn, RSp).
Orange-crowned Warbler: Late were one seen in Aspen, Pitkin, 3 Nov (VZ),

and one seen at Valco Ponds in Pueblo, 11 Nov (BKP).

Nashville Warbler: Thirteen were reported in the state this fall between 2 Aug-17 Oct; a late one was in Colorado City, 6 Nov (DSi).

Virginia's Warbler: A very late individual was seen in Montrose, 20 Nov (CK).

Northern Parula: Only one was reported this fall and it was at Lathrop SP, 24 Aug (MP, DSi, BKP). Lathrop SP was a very good place to see eastern warblers this fall.

Chestnut-sided Warbler: Seven were reported this fall. Singles were seen at Durango, 5-6 Sep (SA, PD); Lathrop SP, 7 Sep (RMi); Plaster Res., Broomfield, 12 Sep (EZ); Colorado City, 14 Sep (DSi); Walden Ponds, Boulder, 19 Sep (TF); Hayden Lake, Boulder, 2 Oct (TF); and Hasty Campground, Bent, 3 Oct (TL, JV, DN).

Magnolia Warbler: Four were reported this fall. Singles were seen at DeWeese, 21 Aug (MP, BKP) - a first for Custer; south of Lamar, 14 Sep (J&JS); CVCG, 17 Sep (JKe, RO, GW, DSc); and south of Lamar, 7 Oct (J&JS).

Black-throated Blue Warbler: A male seen at Barr, 28-30 Sep (T&SF, BG), was the only one reported this fall.

Black-throated Gray Warbler: Out of place birds were singles seen at DeWeese, 20 Aug (MA) and CVCG, 17 Sep (JKe, RO, GW, DSc), as well as two at Radium SWA, Grand, 11 Sep (NP, ABo).

Black-throated Green Warbler: One first-fall bird was seen at Barr, 21-22 Oct (TSc, SH); and very late was a first-fall bird seen at Valco Ponds/Rock Canyon in Pueblo, 11-30 Nov (BKP, m.ob.).

Townsend's Warbler: This species is regular throughout the state in fall. The first report was on 21 Aug in Custer, and the last was on 12 Oct in Pueblo.

Pine Warbler: A singing male was seen and heard at Fairmount Cemetery in Lamar, 1 Aug-6 Sep (DAL, m.ob.); one was at Dixon Res., Larimer, 13 Sep (CW, NK); and one was seen near Flagler SWA, Kit Carson, 5 Nov (MP, TL, NG).

Prairie Warbler: One first-fall bird was a complete surprise at DeWeese, 21 Sep (MP, BKP) - a first for Custer.

Palm Warbler: Four were reported this fall. Singles were seen at Chatfield, 10 Oct (TB, JKe, ABu), at Walden Ponds, 18-19 Oct (TF), at Chatfield (reported as a yellow bird), 21 Oct (JSc, KSc), and at the Lamar Community College, 25 Oct (DAL).

Bay-breasted Warbler: One was seen at Lathrop SP, 14 Oct (MP, BKP) - a first for Huerfano.

Blackpoll Warbler: One adult female was seen along Boulder Creek near Walden Ponds, 21 Aug (TF); one was at Centennial Trail, Boulder, 4 Sep (TF, DSt); and another was at the RMBO office at Barr, 13 Sep (BG).

Black-and-white Warbler: Only three were reported this fall. A female was seen at Lake Henry, 10 Sep (BKP); one seen at Broomfield Nature Area, Broomfield, 12 Sep (EZ); and a male at Neenoshe Res., 5 Oct (MA).

American Redstart: Thirty were reported between 15 Aug-21 Oct. The most interesting reports were two at DeWeese, 30 Aug-7 Sep (CD, BW, MP) - rare in Custer; one was along the Animas River in Durango, 5 Sep (SA, PD); and one seen in Ridgway, Ouray, 11-12 Sep (BW, CD, TMc, m.ob.).

Worm-eating Warbler: This species is rare in fall, but one was seen at Bear Creek Regional Park, 2 Oct (MHe).

Ovenbird: Where were the Ovenbirds this fall? Not in Colorado, or at least people did not report them because only four were reported. Two were seen at the Lamar Community College, 31 Aug-2 Sep (JTh, BG, m.ob.); one was at CVCG, 10 Sep (CB); and one was seen at Sands Lake in Salida, 30 Sep (RMi).

Northern Waterthrush: Fourteen were reported this fall between 23 Aug-20 Sep. The most interesting reports were two seen at DeWeese, 30 Aug (CD, BW); one was at Pastorius SWA, La Plata, 5 Sep (PD); and one was seen at Lathrop SP, 7 Sep (RMi).

Kentucky Warbler: The only report was one seen at Curecanti NRA, 26 Aug (JBn) - a first for Gunnison.

Mourning Warbler: The only report was a first-fall bird seen in Cottonwood Canyon, Las Animas/Baca, 6 Sep (NK).

Hooded Warbler: The only reports were a male seen at Colorado City, 22 Aug (BKP, DSi), and another male seen at Plaster Res., 15 Oct (EZ).

Wilson's Warbler: Single birds at Aspen, 3 Nov (VZ) and Lamar, 7 Nov (JTh) were both late for this species.

Canada Warbler: The only report was one seen at Jumbo, 4 Sep (TL, BG).

Summer Tanager: The only report was one seen north of Ouray, 11 Aug (JBy), for a rare West Slope find.

Scarlet Tanager: A female was seen at Meeker, Rio Blanco, 17-21 Nov (EH). This is a very rare species on the West Slope.

Cassin's Sparrow: An adult and juvenile were seen at Bear Creek Regional Park, 22 Aug (MHe), which is unusual near the foothills.

Rufous-crowned Sparrow: One was seen at Valco Ponds in Pueblo, 22 Aug (BKP), and two to three were seen at Tunnel Drive in Canon City, 19 Oct -30 Nov (SM, m.ob.).

American Tree Sparrow: The first of the season of this winter sparrow were seen in Yuma, 15 Oct (BKP, MP, LE).

Chipping Sparrow: The last report of the fall was one seen at Norwood, San Miguel, 1 Nov (GS, KG).

Field Sparrow: The only reports this season were singles seen south of Castlewood Canyon SP, Douglas, 20 Aug (GW); on the south side of John Martin, 6 Oct (DN); and at Chatfield, 2 Nov (JSc, KSc).

Sage Sparrow: The last report was one in Grand Junction, 5 Oct (GG).

Red Fox Sparrow: One was reported from CVCG, 18 Oct (RD, MHu).

Swamp Sparrow: This species made a very poor showing this year, with only eight reports, all from southeast Colorado between 3 Oct-24 Nov.

White-throated Sparrow: There were 24 reported in the state between 4 Oct-27 Nov. Interesting locations included: one in Craig, 8 Oct (RLi); one at Franz Lake in Salida, 17 Oct (RMi); one at Montrose, 12 Nov (CK); and one at Ouray, 27 Nov (ARo).
Harris's Sparrow: Fourteen were seen in the state between 8 Oct-30 Nov. West Slope sightings were one at Stagecoach Res., Routt, 8 Oct (RLi); one

six miles south of Craig, 30 Oct (FL); one in Norwood, 4-9 Nov (GS, KG); and two seen in Eagle, 11 Nov (VZ).

Golden-crowned Sparrow: One adult was seen at Fruitgrowers Res., 1 Oct-30 Nov (DG, m.ob.), and a first-year bird was reported from Confluence Park in Delta, 5 Oct (PP).

McCown's Longspur: West of normal, one flew by at PR, 25 Oct (BKP).

Northern Cardinal: The only reports this season were from northeast Colorado; one seen at Columbine Park in Sterling, 4 Sep (TL), five at Ovid, 26 Sep (JKe, RLz, CL), and one also seen there on 21 Nov (HA).

Rose-breasted Grosbeak: There were only four reports this season: a female was seen in Lamar, 16 Aug (JTh); a male was in Broomfield, 12 Oct (LBu); another male was seen in Nucla, 19-24 Oct (CD, BW); and a final male was seen in Ouray, 12 Nov (ARo, LA).

Black-headed Grosbeak: The last report of the season was one seen in Norwood, 4 Nov (GS, KG).

Indigo Bunting: Six were seen in southeast Colorado between 24 Aug-5 Oct.

Painted Bunting: Two green, female-type birds were found this fall, with one at Lathrop SP, 7 Sep (RMi), and another at Colorado City, 26 Sep (DSi). These are only the 3rd and 4th fall reports in Colorado.

Bobolink: Rarely detected in the fall, one was seen at CBR, Pueblo, 29 Aug (MP, m.ob.).

Yellow-headed Blackbird: November reports included one east of Lamar, 19 Nov (DAL), and one east of Las Animas, 22 Nov (DN).

Rusty Blackbird: The only reports were one seen at Anton, Washington, 6 Nov (TL, MP, NG); two seen in Bent, 12 Nov (DN); and one seen south of Lamar, 24-25 Nov (J&JS).

Great-tailed Grackle: Singles were seen at Loudy-Simpson Park in Craig, 23 Oct (FL) and in Rifle, Garfield, 7 Nov (TMc) in northwest Colorado where they are rare. The high count was 200 seen at Lamar, 23 Oct (DAL).
Bullock's Oriole: The last report was one seen at Jackson Res., 31 Oct (NK, CW).

Gray-crowned Rosy-Finch: This species is rare in Pueblo County, but one to two were at Sherry Chapman's feeders above Rye, 18-30 Nov (SC).

Black Rosy-Finch: Also rare in Pueblo County, one was seen at Sherry Chapman's feeders above Rye, 25 Nov (SC).

Pine Grosbeak: For unknown reasons, Pine Grosbeaks appeared on the eastern plains this fall. One female-type was photographed at Rocky Ford, 3-5 Nov (SO); two males were photographed at Cheyenne Wells, Kit Carson, 13 Nov (MP, LE); and three males and one female-type were photographed at Lamar, 18 Nov (DAL, JTh). Meanwhile, in the southwest a female-type was seen outside Cortez, Montezuma, at 6,200 feet elevation, 17 Nov (ARi). Others wandered into western Kansas this season.

Purple Finch: A female-type was seen at Franktown, Douglas, 13 Oct (KM); one was at Maxwell Park, Boulder, 13 Oct-18 Nov (TF); a female-type was in Lamar, 30 Oct-30 Nov (JTh); an adult male was in Las Animas, 23-30 Nov (DN); a first-year male was seen in Las Animas, 28-30 Nov (DN); and one to two adult males were in Lamar, 29-30 Nov (DN).

Cassin's Finch: Further east than usual were single female type birds seen at Lamar, 7-22 Nov (JTh), and in Las Animas, 26 Nov (DN).

Red Crossbill: Plains reports this season included one to three seen at Barr, 22 Sep-5 Oct (BG); 13 to 17 were 16 miles south of Julesburg, Sedgwick, 11-28 Oct (HA); two seen near Flagler, 16 Oct (BK, MB, GM, JV); 21 seen near Flagler, Kit Carson, 5 Nov (MP, TL, NG); one seen at La Junta City Park, 6 Nov (VAT); and one seen at Lamar, 11 Nov (JTh).

White-winged Crossbill: The only reports this season were of a male seen along Forest Service Road 823, San Juan, 8 Aug (TJ), one seen at Ophir, San Miguel, 28 Aug (ARo), and one above Bear Lake along Flattop Mountain Trail in Rocky Mountain National Park, Larimer, 6 Nov (JTu).

Common Redpoll: A few were reported this season: two were seen in Arvada, Jefferson, 13-14 Nov (CC); one was west of Horsetooth Mountain Park, Larimer, 14 Nov (AP); three were seen at Hasty Campground, 20 Nov (TL, DN, JV); and one was seen in Montrose, 29 Nov (CK).

Evening Grosbeak: Far out on the eastern plains, one was seen at Jackson Res., 3 Oct (NK), and another was seen in Lamar, 18 Nov (JTh).

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