

**Surveys for Yellow-billed Cuckoos on Lands Managed by
the National Park Service in Dinosaur National Monument
and Northwest Colorado**



December 2009



Rocky Mountain Bird Observatory

PO Box 1232

Brighton, CO 80601-1232

303.659.4348

www.rmbo.org

Tech. Report # SC-YBCU-NPS-09-1

In Cooperation With:



ROCKY MOUNTAIN BIRD OBSERVATORY

Mission: To conserve birds and their habitats

Vision: Native bird populations are sustained in healthy ecosystems

Core Values: (Our goals for achieving our mission)

1. *Science* provides the foundation for effective bird conservation.
2. *Education* is critical to the success of bird conservation.
3. *Stewardship* of birds and their habitats is a shared responsibility.

RMBO accomplishes its mission by:

Monitoring long-term bird population trends to provide a scientific foundation for conservation action.

Researching bird ecology and population response to anthropogenic and natural processes to evaluate and adjust management and conservation strategies using the best available science.

Educating people of all ages through active, experiential programs that create an awareness and appreciation for birds.

Fostering good stewardship on private and public lands through voluntary, cooperative partnerships that create win-win situations for wildlife and people.

Partnering with state and federal natural resource agencies, private citizens, schools, universities, and other non-governmental organizations to build synergy and consensus for bird conservation.

Sharing the latest information on bird populations, land management and conservation practices to create informed publics.

Delivering bird conservation at biologically relevant scales by working across political and jurisdictional boundaries in western North America.

Suggested Citation:

Beason, Jason P. 2009. Surveys for Yellow-billed Cuckoos on Lands Managed by the National Parks Service in Dinosaur National Monument and Northwest Colorado. Tech Rep. SC-YBCU-NPS-09-1. Rocky Mountain Bird Observatory, Brighton, Colorado. 19 pp.

Cover Photo:

Yellow-billed Cuckoo by Randy Siebert

Contact Information:

Jason Beason jason.beason@rmbo.org
RMBO
39405 Lund Road
Paonia, CO 81428
970.527.4625

Executive Summary

Rocky Mountain Bird Observatory conducted surveys for Western Yellow-billed Cuckoos and other bird species of interest in July and August 2009. Surveys were accomplished by broadcasting cuckoo calls at designated points in suitable habitat in Dinosaur National Monument in northwestern Colorado and northeastern Utah. We also surveyed private land with historical cuckoo records and appropriate habitat in northwestern Colorado in July and August 2009.

We completed at least one visit to 134 survey points during the course of the season. We visited 48 of the points twice and 33 points three times. A total of 215 call-playback surveys were completed for a total of 1505 survey minutes. Habitat types were recorded during the first visit to each survey location.

During these surveys we did not detect Yellow-billed Cuckoos on lands managed by the National Park Service in Dinosaur National Monument or private land in northwestern Colorado. Even though cuckoos were not detected, they were detected on private land in northwestern Colorado as recently as July 2008 and suitable habitat is found within Dinosaur National Monument. There are historical cuckoo records for this part of the state and the only breeding confirmation in western Colorado for the first Colorado Breeding Bird Atlas was along the Yampa River in Routt County. Therefore, it is feasible that Yellow-billed Cuckoos were present in Dinosaur National Monument and were not detected during surveys. We also recorded detections of Willow Flycatchers (*Empidonax traillii*), Least Flycatchers (*Empidonax minimus*) and Yellow-breasted Chats (*Icteria virens*), which were chosen as species of interest by the Rocky Mountain Bird Observatory. Willow Flycatcher and Yellow-breasted Chat were chosen because of their low density on the landscape and they require high-quality riparian habitat. Least Flycatchers were chosen because they are also indicators of high-quality riparian habitat and we are attempting to document their western range expansion. Three new species were detected for the park, Sora (*Porzana carolina*), Eurasian Dollared-Dove (*Streptopelia decaocto*), and Cordilleran Flycatcher (*Empidonax occidentalis*).

Acknowledgements

This project was funded by the National Park Service through an agreement with the Rocky Mountain Bird Observatory. This report constitutes the fulfillment of the requirements in our cooperative agreement with the National Park Service (SC-YBCU-NPS-09-01).

I sincerely thank Dusty Perkins, Tamara Naumann, and Cindy Heyd of the National Park Service for funding the project and for support during the project. I am grateful to Larry Arnold and Forrest Luke for conducting the surveys, sometimes under difficult conditions. I am also appreciative of Rob Sparks for creating maps for this report and Jeff Birek for careful review of this report.

Table of Contents

Executive Summary	i
Acknowledgements.....	ii
Table of Contents	iii
Introduction.....	4
Methods.....	6
Site Selection	6
Protocol.....	6
Results.....	7
Discussion and Recommendations	8
References.....	9
Appendix A. Locations with historical Yellow-billed Cuckoo detections in northwest Colorado.	10
Appendix B. Locations of all survey points in Dinosaur National Monument, summer 2009.....	11
Appendix C. Location of survey points outside of Dinosaur National Monument in northwest Colorado, summer 2009.....	12
Appendix D. List of UTM coordinates for all points surveyed and number of visit to each point in northwest Colorado in 2009.....	13
Appendix E. Bird species detected in Dinosaur National Monument in the Cub Creek survey area, summer 2009.....	17
Appendix F. Bird species detected in Dinosaur National Monument in the Deerlodge Park survey area, summer 2009.....	18
Appendix G. Bird species detected in Dinosaur National Monument in the Jones Hole survey area, summer 2009.....	19

Introduction

The Yellow-billed Cuckoo (*Coccyzus americanus*) is secretive and can easily go undetected without a focused survey effort. Yellow-billed Cuckoos do not vocalize frequently to announce territory or to attract mates in the manner of typical riparian birds. Additionally, the delayed breeding cycle of the Yellow-billed Cuckoo does not correspond with other songbirds and, therefore, surveys that take place when the majority of riparian bird species are most detectable are ending about the time cuckoos are returning to breed. Recent surveys specifically for Yellow-billed Cuckoos by the Rocky Mountain Bird Observatory have revealed that the Western Distinct Population Segment (WDPS) occupies several locations in western Colorado illustrating that a focused survey methodology is effective for this species.

The WDPS of the Yellow-billed Cuckoo has specific habitat requirements that can be described as riparian areas with tall trees and well-developed understory vegetation (Johnson et al. 2008). In western Colorado, Yellow-billed Cuckoos have historically occupied extensive Fremont or narrowleaf cottonwood riparian forests (Righter et al. 2004). There exists little information about minimum stand size in the western U.S., however in California where the WDPS of the Yellow-billed Cuckoo has been well-studied research has shown that cuckoos require forested stands at least 10 hectares (24.7 acres) in size (Halterman 1991).

The WDPS of the Yellow-billed Cuckoo has been a candidate for listing under the Endangered Species Act (Listing Priority 3) since 2001. The National Park Service (NPS) lists the WDPS of the Yellow-billed Cuckoo as a sensitive species in Colorado. The Colorado Division of Wildlife (CDOW) lists the WDPS of the Yellow-billed Cuckoo as a Species of Greatest Conservation Need (Tier 1; CDOW 2006). Populations of the WDPS of the Yellow-billed Cuckoo have declined precipitously since the early 20th century in North America (Hughes 1999). The WDPS of the Yellow-billed Cuckoo has been extirpated from British Columbia, Washington, Oregon, and reduced to a small fraction of their historical range in California (Hughes 1999).

In Colorado, west of the Rocky Mountains, in the 1950s and 1960s Yellow-billed Cuckoos were found annually east of Grand Junction in Palisade along the Colorado River (Righter et al. 2004). There have been limited detections in the past decade in the Grand Junction area. The most recent detection was in 2006 at the Orchard Mesa Wildlife Area managed by the Bureau of Reclamation. Cuckoos were regularly detected as recently as the mid-1980s along the Uncompahgre and Gunnison Rivers near Delta (Rich Levad, pers. comm.). However, during the first Colorado Breeding Bird Atlas (1987-1994), only three cuckoos were recorded on the western slope (Colorado Bird Atlas Partnership 1998). Of these atlas records, only one confirmed breeding on the Yampa River near Hayden (Routt County). Since 1987 annual detections during the breeding season in western Colorado have been recorded at only two locations in the range of the WDPS of the Yellow-billed Cuckoo. At the first location along the Conejos River on lands managed by the Bureau of Land Management in the San Luis Valley, cuckoos have been detected annually since 2001 (Conejos County) (Banks and Lucero 2004). Breeding is suspected at this location but has not been confirmed. At the second location, breeding was confirmed during the summer of 2008 by the Rocky Mountain Bird Observatory (RMBO) along the North Fork of the Gunnison River (North Fork) near Hotchkiss (Delta

County). Cuckoos have been detected annually along the North Fork between Hotchkiss and Paonia since 2003.

Besides the consistent detections along the Conejos and North Fork Rivers very little is known about the current range of the WDPS of the Yellow-billed Cuckoo in Colorado. Because the health of riparian areas is of interest to the NPS, and the WDPS of the Yellow-billed Cuckoo is recognized as a sensitive species by the NPS, the NPS was interested in information regarding this species on lands that they manage. Our objective for this project was to determine the presence and estimate numbers of Yellow-billed Cuckoo within Dinosaur National Monument and nearby locations in the Yampa River drainage. Information about the population status of the WDPS of the Yellow-billed Cuckoo will assist land managers and other conservation partners concerned with recovering viable populations of the species at the state and regional level.

In northwest Colorado, there are few records for Yellow-billed Cuckoos besides the atlas breeding confirmation; however, as recently as 2008 two were discovered during RMBO cuckoo surveys near Craig, Colorado on the Yampa River. In 2007, another reliable record from a place known as South Beach Landing on the Yampa west of Craig was noted. Other than these very recent records, there are records from Axial Basin in 1978, Browns Park State Wildlife Area (Beaver Creek Unit) in 1989, and reports from Meeker in 1979 and 1980 (Appendix A).

Methods

Site Selection

For this project, three locations were chosen within the boundaries of Dinosaur National Monument to be surveyed. Sites were selected by consulting with NPS biologists and local bird experts. Selected sites were placed at elevations consistent with those where cuckoos have recently been detected in western Colorado. All survey points were placed in cottonwood- or box elder-dominated riparian habitat with well-developed understory vegetation. Survey points were spaced at least 100 meters apart on the day they were conducted. Since the same survey points were not visited throughout the season, however, points on the maps may be spaced closer together. Actual surveys took place at Cub Creek, Deerlodge Park, and Jones Hole in Dinosaur National Monument (Appendix B). Survey points were also placed on a selection of private lands with recent cuckoo detections or with appropriate habitat: Lily Park, River Ridge, Wyman Museum, and Yampa State Wildlife Area (Appendix C). Appendix D lists Universal Transverse Mercator (UTM) coordinates for all survey points.

Protocol

Surveys involved broadcasting Yellow-billed Cuckoo calls in an effort to lure cuckoos closer to the observer so that they could be seen and/or to encourage a vocal response (following Halterman 1991). We used a variation of the methodology recommended by Western Yellow-billed Cuckoo Working Group (Johnson, unpublished document). Points were established in or near (within 15 m of habitat edge) appropriate habitat and spaced at least 100 m (328 ft) apart. Playback equipment projected the calls at least 100 m (328 ft) without distortion. We avoided areas of unsuitable habitat (i.e., a monoculture of young tamarisk or extensive un-forested areas) between patches (i.e., the unsuitable habitat is at least 300 m in extent). We visited each point at least once between 10 July and 6 August, which represents a time period chosen to minimize detections of cuckoos migrating through the study area.

We initiated surveys with a one-minute quiet period to look for and listen for spontaneously calling cuckoos. If no cuckoos were seen or heard in the one-minute period after arriving at the point, the surveyor played a Yellow-billed Cuckoo *kowlp* call once, followed by 1 minute of silence to listen for a response. As long as cuckoos were not detected, this playback-listen sequence was repeated five times.

At all survey points we recorded UTM coordinates (using GPS). We recorded the dominant vegetation type present at each survey location.

RMBO chose the following as species of interest to be recorded during surveys: Willow Flycatcher, Least Flycatcher, and Yellow-breasted Chat.

Results

We conducted 215 tape-playback surveys between the dates of 10 July and 6 August (A total of 134 points surveyed at least once). No Yellow-billed Cuckoos were detected during the surveys in 2009. However, cuckoos were detected on private land along the Yampa River approximately 48 miles east of Dinosaur National Monument in 2008.

We detected Yellow-breasted Chats at all survey locations in Dinosaur National Monument and one Willow Flycatcher at Deerlodge Park along the Yampa River. A full listing of bird species detected at each survey location in Dinosaur National Monument can be seen in Appendices D through F.

Surveyors classified vegetation in all locations as native.

Discussion and Recommendations

Even though Yellow-billed Cuckoos were not detected during surveys in 2009 in Dinosaur National Monument or northwest Colorado it is possible they were present in the area. The 2009 surveys covered a small percentage of the suitable habitat and increasing the number of surveys and the area surveyed could reveal that cuckoos occupy northwestern Colorado. Typically, cuckoo habitat is thought of as extensive cottonwood stands with a dense understory and this is habitat type is difficult to locate in Dinosaur National Monument. However, cuckoos have occupied box elder stands with a well-developed understory in western Colorado and this type of habitat exists throughout the park. To have a better idea about the population status of Cuckoos in northwestern Colorado, the NPS should conduct annual surveys in as many locations as possible. Field technicians that conducted surveys in 2009 noted that the Jones Hole area seemed most appropriate for cuckoos of those that were surveyed. We were unable to visit other locations in the park in 2009 and can not recommend additional locations to survey in the future. Besides consulting with NPS biologists that know the area, we also recommend using Google Earth™ to locate areas with extensive riparian habitat. We have been using this tool to locate riparian habitat in other locations in western Colorado.

Since cuckoos are most often detected aurally park biologists should make themselves and their seasonal field staff aware of the array of Yellow-billed Cuckoo vocalizations so that when they are in the field they can recognize them if heard. We also recommend that cuckoo surveys be conducted by NPS biologists that are in the field during the survey period already (mid-June through mid-August). Call playback equipment is small, lightweight, and easily transported. This would increase the chances of locating cuckoos in Dinosaur National Monument.

In 2008, Yellow-billed Cuckoos were detected during the breeding season at two locations approximately five miles apart in the Yampa River drainage east and west of Craig, Colorado. The closer of these two detections to Dinosaur National Monument was approximately 48 miles upstream from Deerlodge Park on the Yampa River. Breeding was not confirmed in the areas where the cuckoos were detected in 2008; however, a limited amount of time was spent surveying this area by a volunteer on this project. The fact that cuckoos occupied this area as recently as 2008 justifies further surveys for the species in northwest Colorado. In 2009, surveys were repeated at the 2008 detection locations, but cuckoos were not detected. The site fidelity of the Yellow-billed Cuckoo is uncertain and perhaps conditions in an area that attract cuckoos one year do not exist the following year. Very few cuckoo surveys have taken place in western Colorado and there is still much to be learned about the breeding behavior and habitat requirements of the WDPS of the Yellow-billed Cuckoo in this area.

References

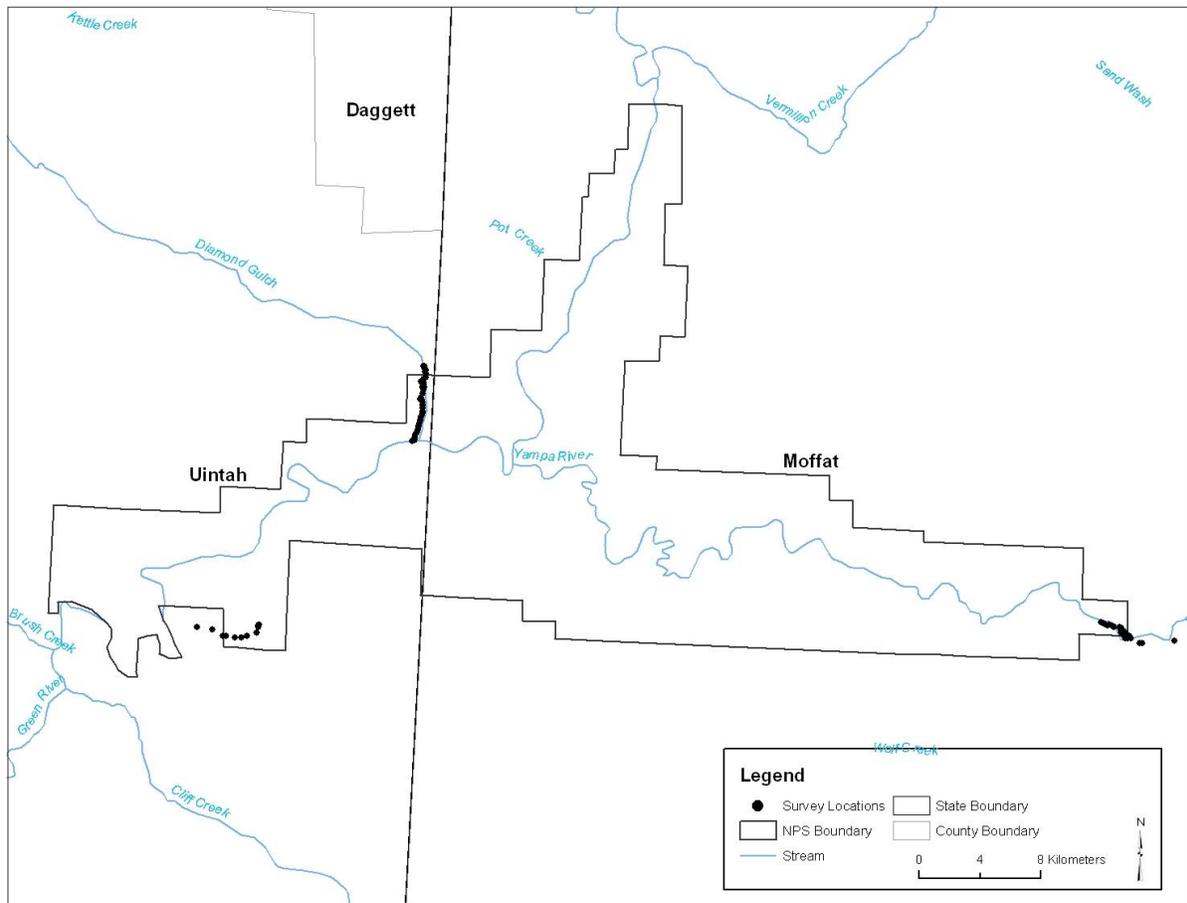
- Banks, Alison, and Jill Lucero. 2004. Yellow-billed Cuckoos in Southern Colorado. Colorado Birds: The Colorado Field Ornithologists' Quarterly, Colorado.
- Colorado Division of Wildlife. 2006. Colorado's Comprehensive Wildlife Conservation Strategy and Wildlife Action Plans. Denver, Colorado. 328 pp.
- Halterman, M. D. 1991. Distribution and Habitat Use of the Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*) on the Sacramento River, California, 1987-90, MS Thesis: California State University: Chico, CA.
- Hughes, J.M. 1999. Yellow-billed Cuckoo. In The Birds of North America, no. 418 (A. Poole and F. Gill, eds.). Acad. Nat. Sci., Philadelphia, and Am. Ornithol. Union, Washington, D.C.
- Johnson, Matthew J., Durst, Scott L., Calvo, Christopher M., Stewart, Laura, Sogge, Mark K., Bland, Geoffrey, and Arundel, Terry. 2008. Yellow-billed Cuckoo distribution, abundance, and habitat use along the lower Colorado River and its tributaries, 2007 Annual Report: U.S. Geological Survey Open-File Report 2008-1177, 274 p. [<http://pubs.usgs.gov/of/2008/1177/>].
- Colorado Breeding Bird Atlas Partnership. 1998. Colorado Breeding Bird Atlas. Denver, Co. 636 pp.
- Righter, R., R. Levad, C. Dexter, and K. Potter. 2004. Birds of Western Colorado Plateau and Mesa Country. Grand Valley Audubon Society.

Appendix A. Locations with historical Yellow-billed Cuckoo detections in northwest Colorado.

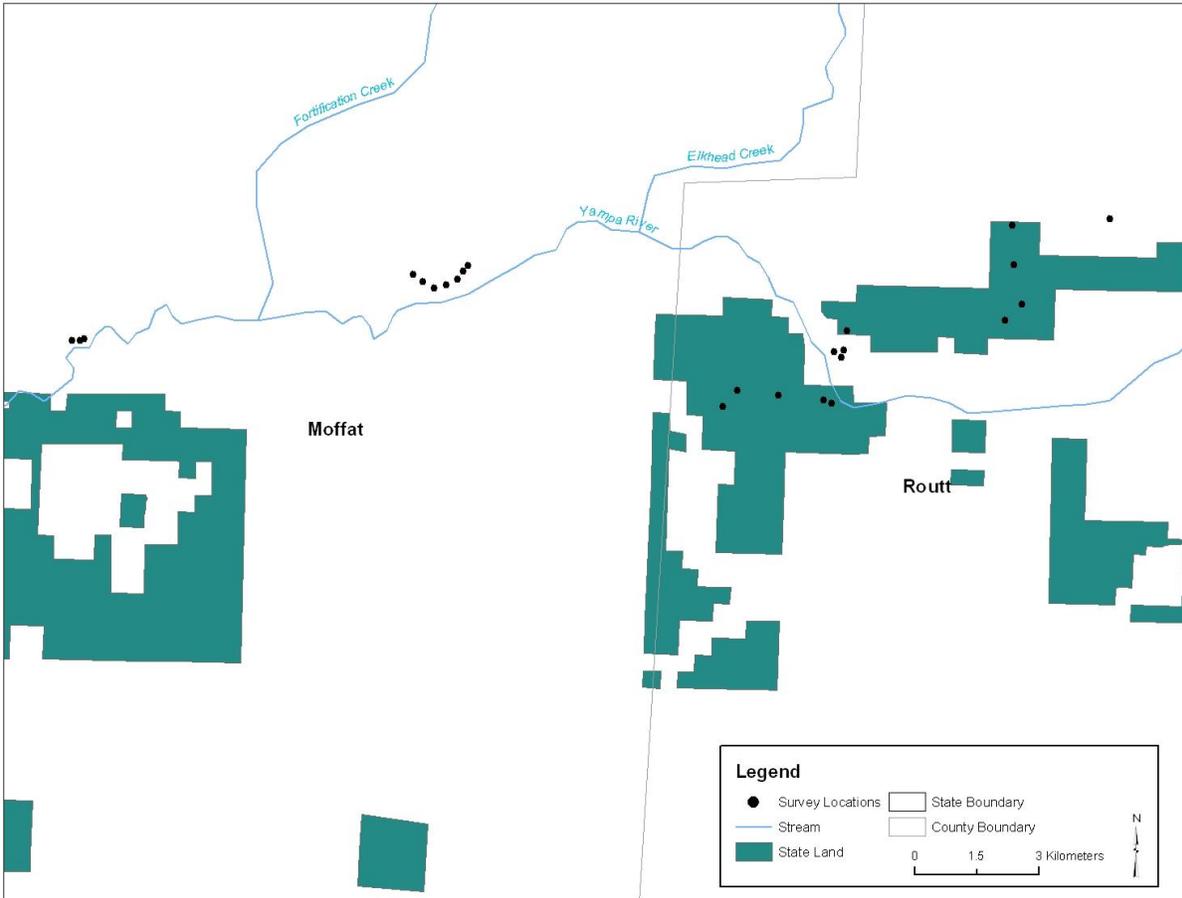
Site Name	Land Ownership	County	River/Stream	Most Recent Detection	UTM Zone	UTM Easting	UTM Northing
Axial Basin	BLM and Private	Moffat	Milk Creek	1978		*	
Browns Park State Wildlife Area - Beaver Creek Unit	State of Colorado	Moffat	Beaver Creek	1989		*	
Meeker	Private	Rio Blanco	Sulphur Creek	1979		*	
Meeker	Private	Rio Blanco	Residential	1980		*	
River Ridge	Private	Moffat	Yampa River	2008	13	280398	4485870
South Beach Landing	Private	Moffat	Yampa River	2007	13	278865	4484845
Wyman Museum	Private	Moffat	Yampa River	2008	13	288989	4487134
Yampa River - first atlas breeding confirmation	The Nature Conservancy	Routt	Yampa River	1988		*	

*exact location unknown

Appendix B. Locations of all survey points in Dinosaur National Monument, summer 2009.



Appendix C. Location of survey points outside of Dinosaur National Monument in northwest Colorado, summer 2009.



Appendix D. List of UTM coordinates for all points surveyed and number of visit to each point in northwest Colorado in 2009.

Land Ownership	Site Name	State	Zone ¹	Easting ¹	Northing ¹	Number of Visits
National Park Service	Cub Creek	Utah	12	650827	4476352	3
National Park Service	Cub Creek	Utah	12	651862	4476252	3
National Park Service	Cub Creek	Utah	12	652579	4475867	3
National Park Service	Cub Creek	Utah	12	652755	4475903	3
National Park Service	Cub Creek	Utah	12	653344	4475805	3
National Park Service	Cub Creek	Utah	12	653802	4475887	3
National Park Service	Cub Creek	Utah	12	654133	4475969	3
National Park Service	Cub Creek	Utah	12	654780	4476249	3
National Park Service	Cub Creek	Utah	12	654827	4476598	3
National Park Service	Cub Creek	Utah	12	654841	4476709	1
National Park Service	Cub Creek	Utah	12	654879	4476805	1
National Park Service	Deerlodge Park	Colorado	12	709995	4480683	3
National Park Service	Deerlodge Park	Colorado	12	710003	4480679	1
National Park Service	Deerlodge Park	Colorado	12	710140	4480634	3
National Park Service	Deerlodge Park	Colorado	12	710142	4480634	1
National Park Service	Deerlodge Park	Colorado	12	710355	4480576	1
National Park Service	Deerlodge Park	Colorado	12	710445	4480528	2
National Park Service	Deerlodge Park	Colorado	12	710566	4480550	2
National Park Service	Deerlodge Park	Colorado	12	710694	4480522	2
National Park Service	Deerlodge Park	Colorado	12	710812	4480483	2
National Park Service	Deerlodge Park	Colorado	12	710890	4480427	2
National Park Service	Deerlodge Park	Colorado	12	711247	4480484	1
National Park Service	Deerlodge Park	Colorado	12	711255	4480473	2
National Park Service	Deerlodge Park	Colorado	12	711275	4480394	3
National Park Service	Deerlodge Park	Colorado	12	711280	4480381	1
National Park Service	Deerlodge Park	Colorado	12	711339	4480419	2
National Park Service	Deerlodge Park	Colorado	12	711340	4480268	1
National Park Service	Deerlodge Park	Colorado	12	711365	4480338	2
National Park Service	Deerlodge Park	Colorado	12	711366	4480245	3
National Park Service	Deerlodge Park	Colorado	12	711370	4480141	2
National Park Service	Deerlodge Park	Colorado	12	711401	4480111	1
National Park Service	Deerlodge Park	Colorado	12	711423	4480301	2
National Park Service	Deerlodge Park	Colorado	12	711430	4480059	3
National Park Service	Deerlodge Park	Colorado	12	711520	4479968	2
National Park Service	Deerlodge Park	Colorado	12	711538	4480234	2
National Park Service	Deerlodge Park	Colorado	12	711573	4480077	1
National Park Service	Deerlodge Park	Colorado	12	711617	4479863	3
National Park Service	Deerlodge Park	Colorado	12	711664	4480107	1
National Park Service	Deerlodge Park	Colorado	12	711673	4479761	1
National Park Service	Deerlodge Park	Colorado	12	711715	4480061	3

Land Ownership	Site Name	State	Zone ¹	Easting ¹	Northing ¹	Number of Visits
National Park Service	Deerlodge Park	Colorado	12	711726	4479804	2
National Park Service	Deerlodge Park	Colorado	12	711786	4479952	2
National Park Service	Deerlodge Park	Colorado	12	711844	4479764	3
National Park Service	Deerlodge Park	Colorado	12	711878	4479896	1
National Park Service	Deerlodge Park	Colorado	12	711915	4479905	3
National Park Service	Deerlodge Park	Colorado	12	711956	4479793	2
National Park Service	Deerlodge Park	Colorado	12	712023	4479776	1
National Park Service	Jones Hole	Utah	12	664092	4489510	3
National Park Service	Jones Hole	Utah	12	664203	4489718	3
National Park Service	Jones Hole	Utah	12	664217	4489556	1
National Park Service	Jones Hole	Utah	12	664222	4489615	1
National Park Service	Jones Hole	Utah	12	664291	4489956	1
National Park Service	Jones Hole	Utah	12	664376	4490120	1
National Park Service	Jones Hole	Utah	12	664405	4490262	3
National Park Service	Jones Hole	Utah	12	664415	4493425	1
National Park Service	Jones Hole	Utah	12	664435	4492252	1
National Park Service	Jones Hole	Utah	12	664437	4490465	1
National Park Service	Jones Hole	Utah	12	664460	4490548	3
National Park Service	Jones Hole	Utah	12	664468	4490679	1
National Park Service	Jones Hole	Utah	12	664476	4492320	1
National Park Service	Jones Hole	Utah	12	664479	4492387	1
National Park Service	Jones Hole	Utah	12	664491	4492312	3
National Park Service	Jones Hole	Utah	12	664503	4493103	1
National Park Service	Jones Hole	Utah	12	664504	4494464	3
National Park Service	Jones Hole	Utah	12	664508	4490872	1
National Park Service	Jones Hole	Utah	12	664508	4490888	3
National Park Service	Jones Hole	Utah	12	664514	4493297	1
National Park Service	Jones Hole	Utah	12	664523	4494442	1
National Park Service	Jones Hole	Utah	12	664525	4494353	1
National Park Service	Jones Hole	Utah	12	664530	4492234	1
National Park Service	Jones Hole	Utah	12	664532	4492667	3
National Park Service	Jones Hole	Utah	12	664535	4491126	1
National Park Service	Jones Hole	Utah	12	664540	4493607	1
National Park Service	Jones Hole	Utah	12	664549	4493395	3
National Park Service	Jones Hole	Utah	12	664552	4493035	3
National Park Service	Jones Hole	Utah	12	664580	4493313	1
National Park Service	Jones Hole	Utah	12	664590	4491235	3
National Park Service	Jones Hole	Utah	12	664610	4494277	1
National Park Service	Jones Hole	Utah	12	664612	4492924	1
National Park Service	Jones Hole	Utah	12	664615	4492975	1
National Park Service	Jones Hole	Utah	12	664616	4491480	3
National Park Service	Jones Hole	Utah	12	664618	4493100	1

Land Ownership	Site Name	State	Zone ¹	Easting ¹	Northing ¹	Number of Visits
National Park Service	Jones Hole	Utah	12	664621	4494099	1
National Park Service	Jones Hole	Utah	12	664621	4492062	1
National Park Service	Jones Hole	Utah	12	664627	4491852	1
National Park Service	Jones Hole	Utah	12	664630	4491688	1
National Park Service	Jones Hole	Utah	12	664632	4491931	3
National Park Service	Jones Hole	Utah	12	664633	4491382	1
National Park Service	Jones Hole	Utah	12	664655	4494197	1
National Park Service	Jones Hole	Utah	12	664659	4494171	3
National Park Service	Jones Hole	Utah	12	664694	4493702	3
National Park Service	Jones Hole	Utah	12	664697	4493969	1
Private	Lily Park	Colorado	12	712650	4479474	1
Private	Lily Park	Colorado	12	712783	4479525	1
Private	Lily Park	Colorado	12	714871	4479799	1
Private	Lily Park	Colorado	12	717113	4482924	1
Private	Lily Park	Colorado	12	717121	4483135	1
Private	Lily Park	Colorado	12	717173	4483408	1
Private	Lily Park	Colorado	12	717181	4483253	1
Private	Lily Park	Colorado	12	717232	4482067	1
Private	Lily Park	Colorado	12	717247	4483552	1
Private	Lily Park	Colorado	12	717281	4483891	1
Private	Lily Park	Colorado	12	717285	4484022	1
Private	Lily Park	Colorado	12	717310	4482332	1
Private	Lily Park	Colorado	12	717371	4483966	1
Private	Lily Park	Colorado	12	717392	4483596	1
Private	Lily Park	Colorado	12	717398	4483859	1
Private	Lily Park	Colorado	12	717406	4484022	1
Private	Lily Park	Colorado	12	717485	4483895	1
Private	Lily Park	Colorado	12	717850	4483285	1
Private	River Ridge	Colorado	13	280218	4485863	1
Private	River Ridge	Colorado	13	280398	4485870	1
Private	River Ridge	Colorado	13	280507	4485912	1
Private	Wyman Museum	Colorado	13	288440	4487458	1
Private	Wyman Museum	Colorado	13	288683	4487291	1
Private	Wyman Museum	Colorado	13	288939	4487134	1
Private	Wyman Museum	Colorado	13	289240	4487218	1
Private	Wyman Museum	Colorado	13	289508	4487352	1
Private	Wyman Museum	Colorado	13	289642	4487547	1
Private	Wyman Museum	Colorado	13	289757	4487677	1
State of Colorado	Yampa SWA	Colorado	13	295913	4484283	1
State of Colorado	Yampa SWA	Colorado	13	296264	4484666	1
State of Colorado	Yampa SWA	Colorado	13	297257	4484548	1
State of Colorado	Yampa SWA	Colorado	13	298337	4484436	1

Land Ownership	Site Name	State	Zone ¹	Easting ¹	Northing ¹	Number of Visits
State of Colorado	Yampa SWA	Colorado	13	298542	4484351	1
State of Colorado	Yampa SWA	Colorado	13	298598	4485601	1
State of Colorado	Yampa SWA	Colorado	13	298769	4485457	1
State of Colorado	Yampa SWA	Colorado	13	298834	4485639	1
State of Colorado	Yampa SWA	Colorado	13	298913	4486099	1
State of Colorado	Yampa SWA	Colorado	13	302725	4486355	1
State of Colorado	Yampa SWA	Colorado	13	302890	4488645	1
State of Colorado	Yampa SWA	Colorado	13	302933	4487704	1
State of Colorado	Yampa SWA	Colorado	13	303130	4486744	1
State of Colorado	Yampa SWA	Colorado	13	305250	4488811	1

¹UTMs are in NAD 83 projection

Appendix E. Bird species detected in Dinosaur National Monument in the Cub Creek survey area, summer 2009.

Species	Scientific Name
Wild Turkey	<i>Meleagris gallopavo</i>
Turkey Vulture	<i>Cathartes aura</i>
Cooper's Hawk	<i>Accipiter cooperii</i>
Golden Eagle	<i>Aquila chrysaetos</i>
American Kestrel	<i>Falco sparverius</i>
Sora	<i>Porzana carolina</i>
Mourning Dove	<i>Zenaida macroura</i>
Black-chinned Hummingbird	<i>Archilochus alexandri</i>
Downy Woodpecker	<i>Picoides pubescens</i>
Plumbeous Vireo	<i>Vireo plumbeus</i>
Rock Wren	<i>Salpinctes obsoletus</i>
American Robin	<i>Turdus migratorius</i>
Yellow Warbler	<i>Dendroica petechia</i>
Yellow-breasted Chat	<i>Icteria virens</i>
Spotted Towhee	<i>Pipilo maculatus</i>
Chipping Sparrow	<i>Spizella passerina</i>
Lesser Goldfinch	<i>Carduelis psaltria</i>

Appendix F. Bird species detected in Dinosaur National Monument in the Deerlodge Park survey area, summer 2009.

Species	Scientific Name
Ring-necked Pheasant	<i>Phasianus colchicus</i>
Great Blue Heron	<i>Ardea herodias</i>
Turkey Vulture	<i>Cathartes aura</i>
Cooper's Hawk	<i>Accipiter cooperii</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
American Kestrel	<i>Falco sparverius</i>
Spotted Sandpiper	<i>Actitis macularia</i>
Eurasian Collared-Dove	<i>Streptopelia decaocto</i>
Mourning Dove	<i>Zenaida macroura</i>
Great Horned Owl	<i>Bubo virginianus</i>
Common Poorwill	<i>Phalaenoptilus nuttallii</i>
Black-chinned Hummingbird	<i>Archilochus alexandri</i>
Northern Flicker	<i>Colaptes auratus</i>
Western Wood-Pewee	<i>Contopus sordidulus</i>
Willow Flycatcher	<i>Empidonax traillii</i>
Cordilleran Flycatcher	<i>Empidonax occidentalis</i>
Say's Phoebe	<i>Sayornis saya</i>
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>
Western Kingbird	<i>Tyrannus verticalis</i>
Plumbeous Vireo	<i>Vireo plumbeus</i>
Warbling Vireo	<i>Vireo gilvus</i>
American Crow	<i>Corvus brachyrhynchos</i>
Common Raven	<i>Corvus corax</i>
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>
House Wren	<i>Troglodytes aedon</i>
Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>
Western Bluebird	<i>Sialia mexicana</i>
Mountain Bluebird	<i>Sialia currucoides</i>
American Robin	<i>Turdus migratorius</i>
European Starling	<i>Sturnus vulgaris</i>
Cedar Waxwing	<i>Bombycilla cedrorum</i>
Yellow Warbler	<i>Dendroica petechia</i>
Yellow-breasted Chat	<i>Icteria virens</i>
Green-tailed Towhee	<i>Pipilo chlorurus</i>
Spotted Towhee	<i>Pipilo maculatus</i>
Chipping Sparrow	<i>Spizella passerina</i>
Song Sparrow	<i>Melospiza melodia</i>
Blue Grosbeak	<i>Passerina caerulea</i>
Lazuli Bunting	<i>Passerina amoena</i>
Brown-headed Cowbird	<i>Molothrus ater</i>
Bullock's Oriole	<i>Icterus bullockii</i>

Appendix G. Bird species detected in Dinosaur National Monument in the Jones Hole survey area, summer 2009.

Species	Scientific Name
Turkey Vulture	Cathartes aura
Red-tailed Hawk	Buteo jamaicensis
American Kestrel	Falco sparverius
Mourning Dove	Zenaida macroura
Common Nighthawk	Chordeiles minor
White-throated Swift	Aeronautes saxatalis
Black-chinned Hummingbird	Archilochus alexandri
Red-naped Sapsucker	Sphyrapicus nuchalis
Gray Flycatcher	Empidonax wrightii
Say's Phoebe	Sayornis saya
Ash-throated Flycatcher	Myiarchus cinerascens
Plumbeous Vireo	Vireo plumbeus
Warbling Vireo	Vireo gilvus
Clark's Nutcracker	Nucifraga columbiana
Common Raven	Corvus corax
Violet-green Swallow	Tachycineta thalassina
Rock Wren	Salpinctes obsoletus
Bewick's Wren	Thryomanes bewickii
House Wren	Troglodytes aedon
American Dipper	Cinclus mexicanus
Blue-gray Gnatcatcher	Poliophtila caerulea
American Robin	Turdus migratorius
Yellow Warbler	Dendroica petechia
Black-throated Gray Warbler	Dendroica nigrescens
Yellow-breasted Chat	Icteria virens
Western Tanager	Piranga ludoviciana
Spotted Towhee	Pipilo maculatus
Chipping Sparrow	Spizella passerina
Vesper Sparrow	Poocetes gramineus
Song Sparrow	Melospiza melodia
Black-headed Grosbeak	Pheucticus melanocephalus
Blue Grosbeak	Passerina caerulea
Lazuli Bunting	Passerina amoena