

AVIAN INVENTORY OF UTE MOUNTAIN, A BUREAU OF LAND  
MANAGEMENT ACQUISITION IN NORTHERN NEW MEXICO



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## EXECUTIVE SUMMARY

In 2005, we began an avian inventory of Ute Mountain, a formerly private property acquired by the Bureau of Land Management (BLM), in northern Taos County, New Mexico. With funding support from BLM and the Lawrence Foundation, we continued monitoring at Ute Mountain in 2006 to compile an updated avian inventory, quantify densities for several apparently numerous sage-dependent birds, and maintain a framework for monitoring temporal avian population trends. In addition to conducting standard point count surveys in four habitat types at Ute Mountain, we searched the adjacent Rio Grande gorge to evaluate the potential for this riparian area to host Willow Flycatchers, including the federally endangered Southwestern subspecies (*Empidonax traillii extimus*). We recorded 91 avian species in 2005 and 2006, with the highest detection rates and species richness on woodland transects. On 8 June 2006, we encountered a subadult Northern Goshawk, a BLM Sensitive Species, confirming a probable observation of two goshawks in 2005. Based on distance sampling along the sage transect, we estimated densities of 0.17 birds/ha for Sage Thrasher (*Oreoscoptes montanus*) and Sage Sparrow (*Amphispiza belli*), and 0.23 birds/ha for Brewer's Sparrows (*Spizella breweri*). Although these estimates were lower than many published density estimates for these species, we suggest that the vulnerability of sagebrush habitat, and its limited distribution in New Mexico, makes Ute Mountain an important site for maintaining populations for these species in the state. No Willow Flycatchers were observed during a three-day trip on the Rio Grande in late May. Although probably unsuitable for breeding Willow Flycatchers, we considered that several long, but narrow, willow patches along the river might have some potential for stopover habitat.

## INTRODUCTION

The Bureau of Land Management (BLM), Taos Field Office, recently purchased Ute Mountain in northern Taos County, New Mexico. Ute Mountain rises from a sage-steppe plain to a forested peak, over 10,000 ft in elevation. The acquired property (about 5,800 ha) includes the mountain and surrounding land west to the Rio Grande gorge and north to the Colorado border. Because of an extensive habitat gradient, from grassland to coniferous forest, and a relative lack of disturbance (e.g., grazing), this formerly private property is unique and potentially valuable for wildlife. The acquisition of Ute Mountain allows BLM to offer new recreational opportunities, and it extends their management of the Rio Grande National Wild and Scenic River. BLM's goal is to allow recreational use of the area while preserving the natural and cultural environment (BLM 2005).

Proper management of Ute Mountain requires a plan, predicated on an understanding and appreciation of the resources present. In 2008, the Taos Field Office Resource Management Plan (RMP) will be amended, and it will address long-term management of Ute Mountain. Because the property was opened to the public during the fall of 2005 (i.e., before the amended RMP), an Interim Management Plan was adopted. The purpose of the Interim Management Plan "is to prevent any irreversible commitment of resources until the RMP amendment is approved" (BLM 2005). To protect the resources of Ute Mountain, it is important to know what resources are present and how they might be affected by the implementation of management decisions. The Interim Management Plan proposed research to improve the knowledge of Ute Mountain's resources, including baseline wildlife inventories, identification of species of special concern, and continued monitoring (BLM 2005).

In 2005, BLM contracted Hawks Aloft, Inc., to conduct avian inventory and monitoring studies on the Ute Mountain property. In 2005, we conducted point count surveys in four habitat types, or elevation zones, on Ute Mountain and supplemented our surveys with target searches for species of conservation concern. Based on high detection rates for several sage-dependent species (i.e., Sage Thrasher, *Oreoscoptes montanus*, Sage Sparrow, *Amphispiza belli*, and Brewer's Sparrow, *Spizella breweri*), along with the discovery of several active nests, we suggested in 2005 that the sage habitat might be of special conservation value. We also observed probable Northern Goshawks, a BLM Sensitive Species, in coniferous forests on the mountain. Continued monitoring of point counts was needed in 2006 to 1) compile an updated avian inventory, 2) quantify densities of sage-dependent birds, and 3) maintain a framework for monitoring temporal avian population trends. With funding support from BLM and the Lawrence Foundation (Santa Monica, California), we addressed these objectives in 2006, and participated in a search of the adjacent Rio Grande gorge to evaluate habitat potential for Willow Flycatchers, including the federally endangered Southwestern subspecies (*Empidonax traillii extimus*). Continued monitoring will provide BLM with a greater understanding of Ute Mountain's resources, which they can use to formulate new management guidelines in the upcoming Resource Management Plan.

## STUDY AREA

The Ute Mountain property acquired by BLM is located about 10 km west of Costilla, New Mexico, and is flanked by the Rio Grande gorge on the west, the Colorado border on the north, private land on the east, and more BLM land on the south (Fig. 1).

The property is centered on an extinct volcano (i.e., Ute Mountain, 10,093 ft) that forms a habitat island of coniferous forest amidst sage-steppe, rangeland, and a narrow riparian canyon. The property contains planted patches of crested wheatgrass (*Agropyron sibiricum*) and Indian rice grass (*Oryzopsis hymenoides*) on the north and west sides of the mountain, respectively. Vegetation on the property has not recently been grazed by cattle, but elk (*Cervus elaphus*), mule deer (*Odocoileus hemionus*), and pronghorn (*Antilocapra americana*) have been observed. The sage-steppe surrounding the mountain merges into pinyon (*Pinus edulis*) woodland on the lower slopes, with scattered junipers (*Juniperus* spp.). A higher elevation zone contains ponderosa pine (*P. ponderosa*) forest with minimal understory. Near the top of the mountain, coniferous forest consists of Douglas-fir (*Pseudotsuga menziesii*), white fir (*Abies concolor*), and quaking aspen (*Populus tremuloides*).

We concentrated our surveys and species searches on the north side of the mountain, primarily because the steep terrain on the south side limited access to some areas. Based on BLM recommendations, we established point count survey transects in four habitat types: rice grass, sage, pinyon-juniper, and higher-elevation coniferous forest (i.e., ponderosa, Fig. 2). We established the rice grass transect in the small patch between the mountain and the Rio Grande gorge. The sage transect began on the north base of the mountain and skirted the east side of the mountain. We established the pinyon-juniper transect in a similar circular pattern, starting just south of the sage transect and at a slightly higher elevation. The ponderosa transect began at the ponderosa pine and pinyon ecotone on the north side of the mountain and extended directly uphill to the south, ending at the peak.

## METHODS

### *Point Count Surveys*

We conducted point count surveys (see Bibby et al. 2000) along four transects (Fig. 2, Appendix 1). The transects contained a total of 60 points: 18 each on the sage and pinyon-juniper transects, 12 on the ponderosa transect, and 12 on the rice grass transect. The rice grass transect was extended in 2006 by the addition of four survey points in crested wheatgrass habitat. We established the first point of a transect within the desired habitat, then added points in a direction defined by the habitat. For example, the sage and pinyon-juniper transects required a semi-circular path around Ute Mountain to stay within the desired habitat. We established points at least 250 m apart and marked them with a piece of pink flagging tape. We recorded Universal Transverse Mercator (UTM) coordinates (North American Datum 27) for all survey points to assist with relocation.

We conducted two surveys at each transect, for a total of eight survey mornings in 2006. All surveys were conducted in June within the first four hours after sunrise. We separated consecutive surveys at a given transect by at least two weeks. A surveyor, experienced with avian identification by sight and sound, stopped at each point and recorded all birds detected by sight or sound in five minutes. We used the same observer for all 2006 surveys; this observer also conducted six of the eight 2005 surveys. We recorded all birds seen or heard at survey points and categorized each as within 100 m or beyond 100 m from the point. Additionally, because we considered, based on 2005 data, that the sage habitat around Ute Mountain was particularly valuable and potentially vulnerable to alteration upon opening the property to public access, we attempted to quantify densities for several sage-dependent species. We selected Sage Sparrow, Sage

Thrasher, and Brewer's Sparrow as sage indicators, and we recorded the estimated distances from survey points for individuals of these species.

We used detection rates as a relative measure of avian abundance. We calculated detection rates for each survey point (i.e., point detection rate) by adding the number of birds observed at a point and dividing by the number of surveys conducted at the point (two). For the number of birds observed, we only included birds observed within 100 m of each point. We calculated an average detection rate for the 2006 season by adding the point rates and dividing by the total number of points (60). Similarly, we calculated average detection rates for each of the four transects by adding the point detection rates and dividing by the number of points in the transect. We report all detection rates with 95% confidence intervals. For species we selected as indicators of sage habitat, we also used program DISTANCE 5.0 (Thomas et al. 1998) to estimate density based on a model of detection probability as a function of distance. For estimating density, we use only the survey points and observations on the sage transects. We present densities for sage indicators combined, and for each individual indicator species.

### *Rio Grande Gorge*

From 22-24 May, we joined a small group of BLM biologists and a river ranger on a kayak tour of the Rio Grande gorge along the Ute Mountain property's west boundary. Our objective for participating in the trip was to add to our avian inventory and evaluate the potential of riverside vegetation to host Willow Flycatchers, including the federally endangered Southwestern subspecies. We kayaked the river during two consecutive days from mid-morning to mid-afternoon, stopping periodically to identify



birds or evaluate habitat patches. Because many potential patches could not be surveyed during the first four hours after sunrise, we could not employ all methods recommended by standard Willow Flycatcher survey protocol (Sogge et al. 1997). Nevertheless, we played a tape recording of a Southwestern Willow Flycatcher to solicit Willow Flycatcher vocalizations in patches that we considered might be occupied. Because of a previous Willow Flycatcher record in 1997 near the confluence of the Rio Grande and Costilla Creek (BLM 2005), we targeted the Costilla Creek side canyon for a short ground search. We present the location of any Willow Flycatchers observed and provide recommendations relevant to future Willow Flycatcher monitoring and conservation.

## RESULTS

We observed 91 bird species during point count surveys and searches on Ute Mountain in 2005 and 2006 (Appendix 2). The addition of a search in the Rio Grande gorge was responsible for much of the increase from our 63-species total in 2005. We also added a one-day search for potential migrants or late winter residents (particularly grassland birds) in wheatgrass on 3 April, but this search did not add any new species to our inventory. As in 2005, we observed two BLM Sensitive Species in 2006 (BLM 2005), including four Burrowing Owls (*Athene cunicularia*, 442939-4091189) on 28 June and a subadult Northern Goshawk (*Accipiter gentiles*, 439869-4089496) on 8 June. We observed a pair of Peregrine Falcons (*Falco peregrinus*), a state threatened species (BLM 2005), in the Rio Grande gorge on 23 May, the only state or federally listed species we encountered in 2006. Mammal species encountered at Ute Mountain in 2006 include a badger (*Taxidea taxus*, 3 April), a coyote (*Canis latrans* 3 April), and several prairie dogs

(*Cynomys gunnisoni*) in grassland, as well as widespread elk (*Cervus canadensis*).

The solar panels and water basins near the interface of sage and grassland on the north side of Ute Mountain contained high bird concentrations. Flocks of several dozen Mourning Doves (*Zenaida macroura*) and Pinyon Jays (*Gymnorhinus cyanocephalus*) regularly accessed the water and perched on the fencing surrounding the panels. The abundance of birds and wildlife in this area might have attracted numerous raptors. A Golden Eagle (*Aquila chrysaetos*) and Swainson's Hawk (*Buteo swainsoni*) were seen hunting here on the evening of 5 June and a Prairie Falcon (*F. mexicanus*) made three attempts to catch prey here on 6 June.



A flock of Pinyon Jays (above) regularly perched on the fencing surrounding the solar panels on the north side of Ute Mountain, between sage and grassland habitat.

*Point Count Surveys*

We recorded a detection rate of 7.2 birds ( $\pm 1.3$ ) per point in 2006, a substantial increase from the 4.3 ( $\pm 0.5$ ) recorded in 2005. Although we observed higher numbers for many species in 2006, the most obvious increases occurred for Mourning Doves, Pinyon Jays, and Spotted Towhees. At survey point 13 on the pinyon-juniper transect (6 June), we recorded 67 Pinyon Jays within 100 m, greatly influencing variability between points; our biggest total for this species at a single point in 2005 was 5. As in 2005, detection rates were slightly higher for the ponderosa ( $9.9 \pm 1.3$ ) and pinyon-juniper ( $9.7 \pm 3.7$ ) transects than for the sage ( $5.0 \pm 0.6$ ) and rice grass ( $4.3 \pm 0.9$ ) transects. We observed a similar pattern among transects for species richness. We recorded more species at the ponderosa (N=36 species within 100 m of survey points) and pinyon-juniper (N=24) transects than the sage (N=13) and rice grass (N=8) transects in 2006. Species richness at each transect was similar to that recorded in 2005.

Based on distance sampling along the sage transect, we estimated a density of 0.60 birds/ha (95% CI = 0.39-0.90) for sage-dependent species combined. Our estimate was derived from a combined 67 observations of Sage Thrashers, Sage Sparrows, and Brewer's Sparrows. A goodness of fit test indicated that the data adequately fit the detection function (P=0.89). Separately, we estimated densities of 0.17 birds/ha (0.09-0.31) for Sage Thrashers (N=21 observations), 0.17 birds/ha (0.09-0.34) for Sage Sparrows (N=20), and 0.23 birds/ha (0.12-0.44) for Brewer's Sparrow (N=26). Because of the small number of observations for each individual species and the widely overlapping confidence intervals, we do not necessarily suggest that Brewer's Sparrows are more abundant than the other sage indicators.



Coniferous forests on Ute Mountain support a high diversity of nesting birds, including this Warbling Vireo (*Vireo gilvus*) incubating on 8 June 2006.

### *Rio Grande Gorge*

We did not observe Willow Flycatchers during our 22-24 May trip through the Rio Grande gorge. Although probably unsuitable for breeding Willow Flycatchers, we considered that several long, but narrow, willow patches along the river might have some potential for stopover habitat. On the 23<sup>rd</sup>, we played the tape in two different willow patches (435742-4090514 and 434973-4089824, NAD 83). On the 24<sup>th</sup>, we noted an extensive (more than 200 m long) linear willow patch along the east side of the river (434632-4086505, NAD 27). Our tape playback mechanism did not work properly on the

second day of the trip, and we were unable to use it to solicit Willow Flycatcher vocalizations. We later encountered two smaller willow patches (434766-4085636 and 434966-4084551, NAD 27). During late morning on the 23<sup>rd</sup>, we explored the dry Costilla Creek canyon and found that riparian vegetation was short, sparse, and narrowly configured; we considered this area to be even less suitable as Willow Flycatcher habitat than the isolated Rio Grande patches. Nevertheless, willow patches along Costilla Creek and the Rio Grande offered nesting habitat for other species that rely on dense riparian vegetation; we observed Yellow-breasted Chats and nesting Yellow Warblers.

## DISCUSSION

Our observations indicate high avian diversity on the Ute Mountain property, especially in woodland habitat. The ponderosa transect, featuring a variety of conifers, was particularly diverse, yielding the most species by far, despite containing fewer survey points than the pinyon-juniper or sage transects. Our sighting of a Northern Goshawk, approximately one kilometer from a probable 2005 observation of two apparent juvenile goshawks, confirms the presence of this federally listed Species of Concern and BLM Sensitive Species (BLM 2005). A brief search (several afternoon hours) of the trees in this area did not provide evidence of nesting; a more thorough search in the future could provide valuable nest site information. Northern Goshawks have large home ranges (570-3,500 ha, Squires and Reynolds 1997), but there may be enough suitable coniferous forest on Ute Mountain (at least 1,000 ha by our estimation) to support a breeding pair. Finding and monitoring an active nest site could help determine what effect, if any, public access on the mountain has on this sensitive species.

Although lacking the avian diversity of woodland habitats, the sage surrounding Ute Mountain is a valuable habitat for wildlife and birds. Sagebrush habitats are among the most imperiled and undervalued ecosystems in North America (Knick et al. 2003, Welch and Criddle 2003), yet they are important for the continued existence of several sagebrush obligate species, such as Sage Thrasher, Sage Sparrow, and Brewer's Sparrow (Braun et al. 1976). In 2006, we estimated Sage Thrasher and Sage Sparrow densities (0.17/ha for each) at Ute Mountain that were slightly lower but within a wide range of estimates reported elsewhere for these species. Reynolds et al. (1999) compiled eight Sage Thrasher density estimates from a variety of sites, ranging from 0.12 to 0.88 birds/ha. Martin and Carlson (1998) compiled seven Sage Sparrow density estimates, ranging from 0.06 to 1.11 birds/ha. Our density estimate for Brewer's Sparrows on Ute Mountain (0.23 birds/ha) was considerably lower than any of the estimates (0.50 to 5.33 birds/ha) presented by Rotenberry et al. (1999). Although sage obligates were perhaps not as dense on Ute Mountain as in other regions, the limited distribution of this habitat type in New Mexico makes Ute Mountain potentially important for maintaining statewide populations. Aside from its critical value for obligate species, sagebrush on Ute Mountain provides an important source of nutrients and cover for a wide range of taxa.

We consider the sagebrush steppe habitat, along with adjacent grasslands, to be particularly vulnerable to alteration as the Ute Mountain property experiences increasing public use. Because accessible portions of existing roads do not extend beyond the sage into the higher elevation pinyon-juniper and ponderosa habitats, the sagebrush belt could receive a disproportional amount of vehicle and foot traffic. In 2005 and 2006, we located several active nests in sage or on the ground under sage. If public access and recreation

are not adequately regulated in sage habitat, many nests on or near the ground could be threatened each spring and summer. BLM (2005) plans to limit the number of open roads on the property, and strictly prohibit vehicle and mountain bike traffic beyond designated routes. We support this plan as a method to limit habitat alteration. By closing portions of some of the roads that existed prior to the acquisition, BLM has already demonstrated adherence to the plan. Future monitoring of point count surveys on the sage transect will help determine any temporal trends in avian densities associated with public use. Density trends for sage obligates will contribute greatly to evaluating BLM's ultimate success in protecting this habitat type.



This badger, photographed on 3 April 2006, was one of several mammals observed in grassland habitat surrounding Ute Mountain.

In promoting stewardship of woodland and sage habitats, we do not dismiss the value of grasslands surrounding Ute Mountain. Avian species dependent on grasslands in some regions of North America rank among the highest level of concern (Vickery and Herkert 1999). Our surveys in rice grass yielded mainly Horned Larks; Vesper Sparrows (*Pooecetes gramineus*) occupied the fringes bordering the sage. Added monitoring of wheatgrass in 2006 did not reveal any additional breeding grassland species. Although the grassland species we observed are common and widespread, other birds might use the site during the winter or migration. Also, the value of grassland habitat at Ute Mountain might be better measured by small mammal research than avian point count surveys. Our observations of several mammalian species and an extensive network of small mammal burrows (particularly in the rice grass section) are indications that Ute Mountain grasslands support a high diversity of wildlife. Grassland habitat at Ute Mountain likely provides a rich prey base for a variety of raptors nesting in the Rio Grande gorge.

The increases in detection rates from 2005 to 2006 are not easily explained. Although we used the same observer for most surveys and discount observer bias as a prevailing explanation, variability associated with a small survey sample could have influenced our results. Nevertheless, some species were obviously more frequent in 2006. For example, Pinyon Jay and Mourning Dove flocks were encountered more frequently in 2006, and this difference was accurately supported by our survey data. Northern Mockingbird (*Mimus polyglottos*), an easily detected species, was fairly common during sage and pinyon-juniper surveys in 2006, but was apparently absent in 2005. Although a sample of 60 points provides little power for measuring population differences between consecutive years, we can at least conclude from the increased detection rates and a



consistent species richness that negative impacts of public use on avian abundance and diversity have not occurred in the short time the site has been open. We recommend continued monitoring of detection rates and species richness on these transects to provide added perspective on current results and identify future temporal changes.

The isolated willow patches lining the Rio Grande gorge are probably unsuitable for hosting breeding Willow Flycatchers, but a small number of migrants might use these patches as stopover habitat. Migration routes used by Willow Flycatchers, including the federally endangered Southwestern subspecies are not well documented (U.S. Fish and Wildlife Service 2002), but Yong and Finch (1997) suggested that the Rio Grande provides important stopover habitat for Southwestern Willow Flycatchers to replenish energy stores. The U.S. Fish and Wildlife Service (2002) advised that even riparian patches unsuitable for breeding (e.g., too small or too sparse) might be important resources affecting flycatcher survival. Therefore, willow patches along the Ute Mountain portion of the Rio Grande, even if less than ideal, should be maintained and protected as potential Willow Flycatcher habitat. Discouraging camping or other activities in select patches could deter habitat alteration and prolonged disturbance to any flycatchers that might be present. Maintaining seasonal rafting restrictions in this section of the Rio Grande gorge to limit disturbance to nesting raptors might also benefit Willow Flycatchers, at least during a portion of the flycatcher migrating and breeding seasons.

Although we recognize the importance of better understanding patterns of use by migrating and breeding Willow Flycatchers, future standardized surveys in the Rio Grande gorge would be costly. Because most patches are accessible only by water and are widely scattered, adequate coverage, as prescribed by Sogge et al. (1997) in standard

survey protocol, would require multiple mornings during each of three survey periods. The information gathered from a single season of surveys might not justify the time and expense of coordinating three passages of the Rio Grande gorge. The record of a singing male in 1997 (BLM 2005) already indicates that one or more Willow Flycatchers could be present in the future. This past record, along with our 2006 assessment that habitat offered some potential, if not a strong likelihood, for Willow Flycatcher presence, should be enough justification for BLM to maintain that habitat, even in the absence of future Willow Flycatcher survey data.

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Figure 1. Location of Ute Mountain, managed by the Bureau of Land Management, in Taos County, New Mexico.

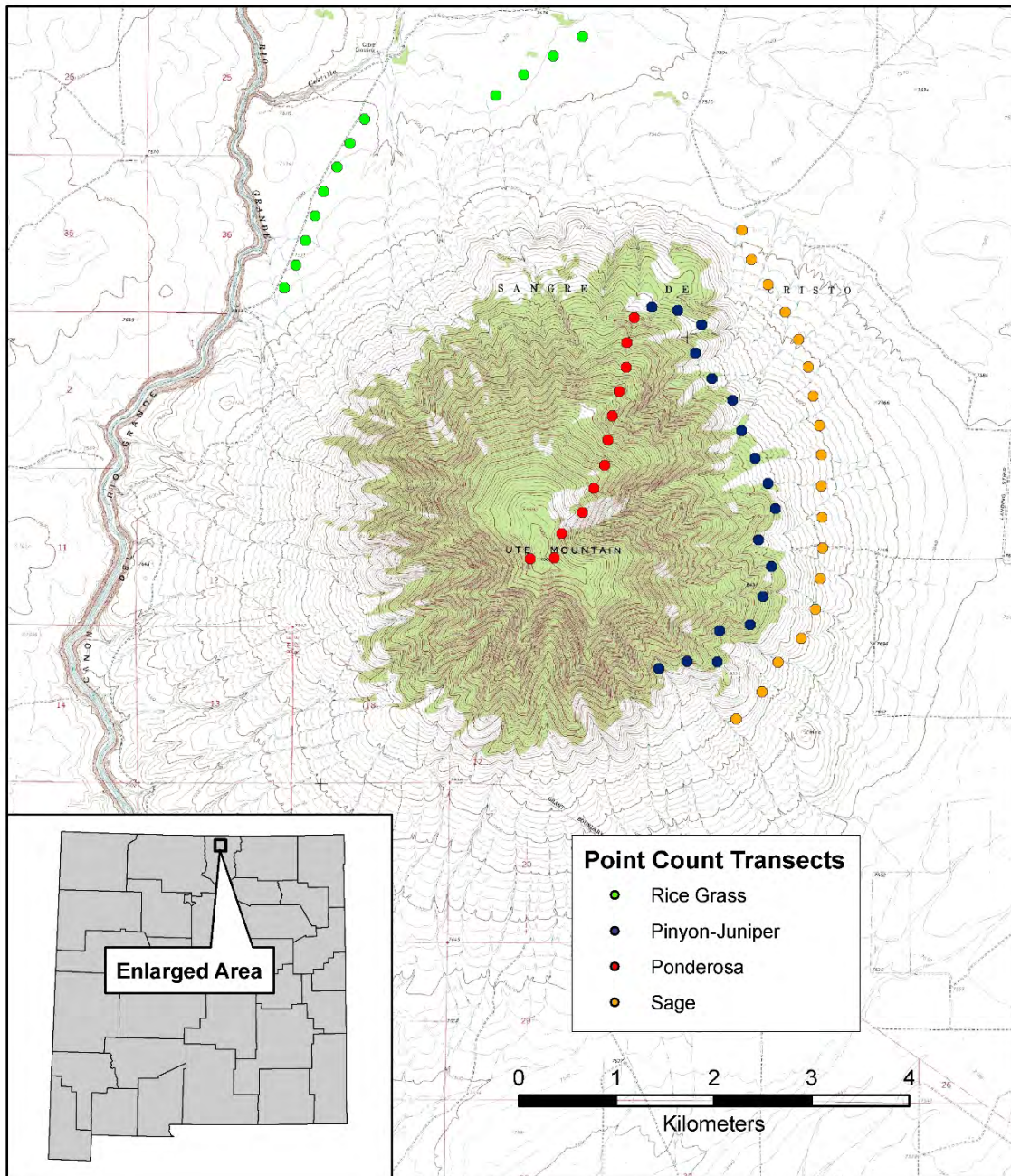


Figure 2. Location of songbird point count surveys on the rice grass, sage, pinyon-juniper, and ponderosa transects on Ute Mountain. Area shown is an enlarged portion of the Ute Mountain, New Mexico USGS Quadrangle Map.

Appendix 1. Universal Transverse Mercator coordinates (North American Datum 27) of 2005 and 2006 songbird point count surveys on the rice grass (RG), sage (SA), pinyon-juniper (PJ), and ponderosa (PO) transects on the Bureau of Land Management's Ute Mountain property in Taos County, New Mexico.

Transect	Point	Easting	Northing	Transect	Point	Easting	Northing
RG	1	436532	4090764	PJ	15	440981	4087240
RG	2	436653	4090999	PJ	16	440958	4086920
RG	3	436751	4091248	PJ	17	440651	4086926
RG	4	436849	4091503	PJ	18	440361	4086852
RG	5	436935	4091754	PO	1	440110	4090454
RG	6	437072	4092004	PO	2	440035	4090200
RG	7	437203	4092248	PO	3	440027	4089948
RG	8	437354	4092497	PO	4	439955	4089700
SA	1	441211	4091356	PO	5	439886	4089450
SA	2	441307	4091054	PO	6	439842	4089202
SA	3	441477	4090799	PO	7	439810	4088942
SA	4	441654	4090516	PO	8	439698	4088702
SA	5	441788	4090235	PO	9	439580	4088455
SA	6	441888	4089950	PO	10	439367	4088239
SA	7	441941	4089651	PO	11	439295	4087990
SA	8	442003	4089351	PO	12	439048	4087980
SA	9	442025	4089047				
SA	10	442023	4088730				
SA	11	442030	4088405				
SA	12	442038	4088089				
SA	13	442010	4087776				
SA	14	441962	4087463				
SA	15	441817	4087164				
SA	16	441580	4086916				
SA	17	441417	4086613				
SA	18	441151	4086333				
PJ	1	440292	4090565				
PJ	2	440554	4090532				
PJ	3	440799	4090385				
PJ	4	440734	4090094				
PJ	5	440904	4089833				
PJ	6	441115	4089609				
PJ	7	441207	4089299				
PJ	8	441344	4089013				
PJ	9	441476	4088754				
PJ	10	441554	4088495				
PJ	11	441382	4088173				
PJ	12	441511	4087899				
PJ	13	441426	4087591				
PJ	14	441293	4087303				

Appendix 2. List of 91 bird species observed by Hawks Aloft in 2005 and 2006 on the Ute Mountain property in Taos County, New Mexico. We include the number of individuals for each species recorded during point count surveys on the rice grass (RG), sage (SA), pinyon-juniper (PJ), and ponderosa (PO) transects. Other observations (final column) include species observed in the Rio Grande gorge, as flyovers during point count surveys, and opportunistic sightings.

Common Name	RG	SA	PJ	PO	Other
American Coot	-	-	-	-	X
American Kestrel	-	1	1	-	-
American Robin	-	-	4	11	-
Ash-throated Flycatcher	-	-	11	5	-
Bewick's Wren	-	-	14	2	-
Black-billed Magpie	-	-	-	-	X
Black-headed Grosbeak	-	-	1	2	-
Black-throated Gray Warbler	-	-	9	2	-
Blue-gray Gnatcatcher	-	4	26	1	-
Brewer's Sparrow	32	58	-	-	-
Broad-tailed Hummingbird	-	-	3	2	-
Brown Creeper	-	-	-	1	-
Brown-headed Cowbird	-	4	13	1	-
Bullock's Oriole	-	-	-	-	X
Burrowing Owl	-	-	-	-	X
Bushtit	-	2	29	4	-
Canada Goose	-	-	-	-	X
Canyon Wren	-	-	1	-	-
Cassin's Finch	-	-	-	1	-
Cassin's Kingbird	-	3	-	-	-
Chipping Sparrow	-	1	35	56	-
Clark's Nutcracker	-	2	6	24	-
Cliff Swallow	-	-	-	-	X
Common Merganser	-	-	-	-	X
Common Nighthawk	1	2	-	-	-
Common Poorwill	-	-	-	-	X
Common Raven	13	17	25	9	-
Cordilleran Flycatcher	-	-	1	1	-
Dark-eyed Junco	-	-	-	23	-
Dusky Flycatcher	-	-	3	27	-
Golden Eagle	-	-	-	-	X
Gray Flycatcher	-	1	21	1	-
Great Horned Owl	-	-	-	-	X
Green-tailed Towhee	6	57	27	6	-
Green-winged Teal	-	-	-	-	X



Common Name	RG	SA	PJ	PO	Other
Hairy Woodpecker	-	-	-	3	-
Hammond's Flycatcher	-	-	-	4	-
Hepatic Tanager	-	-	-	-	-
Hermit Thrush	-	-	1	48	-
Horned Lark	118	-	-	-	-
House Finch	-	-	-	-	X
House Wren	-	-	-	2	-
Killdeer	-	-	-	-	X
Lark Sparrow	-	1	-	-	-
Lesser Goldfinch	-	-	-	-	X
Loggerhead Shrike	1	-	-	-	-
Long-eared Owl	-	-	-	-	X
Mallard	-	-	-	-	X
Mountain Bluebird	-	1	3	4	-
Mountain Chickadee	-	2	30	59	-
Mourning Dove	27	91	105	25	-
Northern Flicker	-	-	-	5	-
Northern Goshawk	-	-	-	-	X
Northern Mockingbird	1	32	19	-	-
Northern Rough-winged Swallow	-	-	-	-	X
Olive-sided Flycatcher	-	1	-	2	-
Orange-crowned Warbler	-	-	-	-	X
Peregrine Falcon	-	-	-	-	X
Pine Siskin	-	-	-	16	-
Pinyon Jay	64	192	106	11	-
Plumbeous Vireo	-	-	56	14	-
Prairie Falcon	-	-	-	-	X
Purple Martin	-	-	-	-	X
Pygmy Nuthatch	-	-	-	4	-
Red Crossbill	-	-	24	-	-
Red-breasted Nuthatch	-	-	1	15	-
Red-tailed Hawk	-	1	-	-	-
Rock Wren	3	15	26	2	-
Ruby-crowned Kinglet	-	-	-	11	-
Sage Sparrow	31	73	-	-	-
Sage Thrasher	38	33	1	-	-
Say's Phoebe	-	-	-	-	X
Song Sparrow	-	-	-	-	X
Spotted Sandpiper	-	-	-	-	X
Spotted Towhee	-	106	120	8	-
Swainson's Hawk	-	-	-	-	X
Townsend's Solitaire	-	-	-	2	-

Common Name	RG	SA	PJ	PO	Other
Turkey Vulture	-	-	-	-	X
Vesper Sparrow	32	4	1	-	-
Violet-green Swallow	-	-	-	6	-
Virginia's Warbler	-	-	-	2	-
Warbling Vireo	-	-	4	19	-
Western Meadowlark	2	-	-	-	-
Western Tanager	-	1	16	25	-
Western Wood-Pewee	-	2	12	2	-
White-breasted Nuthatch	-	-	1	11	-
White-throated Swift	-	-	-	-	X
Williamson's Sapsucker	-	-	-	-	X
Yellow Warbler	-	-	-	-	X
Yellow-breasted Chat	-	-	-	-	X
Yellow-rumped Warbler	-	-	1	86	-



Long, narrow strip of willow at 434739-4086284 (NAD 27)



Another willow patch at 434966-4084551 (NAD 27)



We searched the confluence of Costilla Creek and the Rio Grande for Willow Flycatcher habitat but found that vegetation in this area was sparse