

## **APPENDIX J**

# **Wildlife Resources and Special-Status Species**



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## Acronyms and Abbreviations

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BLM	U.S. Department of the Interior, Bureau of Land Management
EIS	environmental impact statement
GPS	global positioning system
Montana FWP	Montana Fish, Wildlife & Parks
mph	miles per hour
USFWS	U.S. Fish and Wildlife Service
UTM	Universal Transverse Mercator

## Wildlife Resources and Special-Status Species

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This appendix provides technical discussions and information related to agency coordination (Section J.1) and survey methods and results for different wildlife groups (Sections J.2 through J.11).<sup>1</sup> Discussions are presented in differing levels of detail, depending on regional population information, historical and baseline survey data, and known population levels in the species' ranges and in Montana.

### J.1 Agency Coordination

OEA coordinated a wildlife agency meeting on December 12, 2012, with representatives from federal and state agencies to discuss the wildlife study plan, which included known wildlife information and proposed survey methods. Agency participation was requested from agencies with regulatory jurisdiction over wildlife, or over lands that would be crossed by a build alternative, or with specific knowledge of species of concern. Representatives from the Montana Department of Natural Resource Conservation; Montana Natural Heritage Program; U.S. Department of Agriculture–Fort Keogh Livestock and Range Research Laboratory; Montana Fish, Wildlife & Parks (Montana FWP); U.S. Fish and Wildlife Service (USFWS); and U.S. Department of the Interior, Bureau of Land Management (BLM), attended the meeting in Billings, Montana. OEA held separate meetings with representatives from the U.S. Forest Service and the Northern Cheyenne Tribe to discuss land access and intended surveys and to obtain relevant data. OEA conducted the surveys using appropriate methods, which were established by federal and state wildlife agencies, including USFWS, BLM, Montana FWP, and the Montana Natural Heritage Program, and approved by consulted entities. Beyond the initial meeting, OEA continued to coordinate with all parties regarding surveys and data throughout the survey effort. A meeting was held on August 12, 2013, to review all data collected during the 2013 wildlife baseline surveys and identify any gaps in the data. No gaps were identified, and there was consensus that OEA had collected enough data to perform the analyses necessary for this Draft EIS.

Section J.11, Species Catalogue, identifies species data for all wildlife documented in the study area.

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<sup>1</sup> This appendix provides supporting information for Sections 8.3, *Wildlife*, and 8.5, *Special Status Species*, of this *Draft Environmental Impact Statement for the Tongue River Railroad*. This information should not be interpreted as standalone information and must be read in combination with the associated wildlife and special-status species sections.

## J.2 Big Game

OEA observed mule deer, white-tailed deer, and antelope in the study area during all aerial and ground surveys. OEA documented only elk during spring aerial surveys and spring and summer ground surveys. OEA documented sign (e.g., tracks, droppings) of mountain lion in the study area during ground surveys in 2013 but did not make a live observation.

### J.2.1 Mule Deer

OEA commonly observed mule deer throughout the study area during spring aerial and summer ground surveys in 2013. OEA recorded 346 observations of mule deer or their sign between March and July, with most observations (81 percent) occurring in March and April. Eighty-two observations were made in the last week of March, with seventy-three of those observations documented from the air. Herd size averaged 7.2 individuals and ranged from one to 26; most mule deer (60 percent) were observed in sage-grassland habitats. Of the 197 observations made throughout April, 123 were recorded from the air. Average herd size was 8.1 individuals and ranged from one to 84; most mule deer (59 percent) were documented in sage-grassland habitats. Forty observations were made in May. Herd size averaged 2.2 individuals and ranged from one to 19; most observations (35 percent) were recorded in sage-grasslands. However, 25 percent were recorded in areas burned in the 2012 Ash Creek Fire. Only eight observations of mule deer were recorded in June: one lone individual in hayfields, four in grassland, and three in sage-grassland habitats. Nineteen observations were recorded in July. Herd size averaged 1.6 individuals and ranged from one to four; most observations (37 percent) occurred in woodlands.

### J.2.2 White-Tailed Deer

White-tailed deer were also commonly seen throughout the study area during spring aerial and summer ground surveys. OEA recorded 163 observations of white-tailed deer or their sign between March and July, with most observations (74 percent) occurring in March and April. Thirty-two observations were made in the last week of March, with all observations documented from the air. Herd size averaged 6.2 individuals and ranged from one to 30; most observations (53 percent) occurred in the riparian corridor of the Tongue River. Of the 89 observations made throughout April, 51 were documented from the air. Average herd size was 4.9 individuals and ranged from one to 20. Most white-tailed deer were recorded in hayfields (28 percent) or riparian habitats (29 percent). Twenty-two observations were documented from the ground in May. Average herd size was 2.6 individuals and ranged from one to eight. Most were documented (68 percent) in riparian habitats. Seven observations were documented in June. All observations were lone individuals; however, there was one observation of two individuals grazing in grassland. Again, most (71 percent) were seen in riparian habitats. Thirteen observations were recorded in July. Herd size averaged 2.0 individuals and ranged from one to six. Most (62 percent) were observed in riparian habitats.

### **J.2.3 Antelope**

OEA commonly observed antelope north of Birney and occasionally south of Birney during spring aerial and summer ground surveys. OEA recorded 174 observations of antelope or their sign between March and July. Most observations occurred in April (52 percent), although 40 observations were made in the last week of March. Herd size averaged 5.1 individuals and ranged from one to 21; most (75 percent) were observed in sage-grassland habitats in March. Of the 90 observations made throughout April, 47 were documented from the air. Average herd size was 5.2 individuals and ranged from one to 18; most were recorded in sage-grassland (57 percent) and grassland (37 percent) habitats. Thirty-one observations of antelope were documented in May. Average herd size was 2.9 individuals and ranged from one to nine; most (58 percent) were documented in sage-grassland habitats. Eight observations were recorded in June. Average herd size was 5.4 individuals and ranged from one to 21; half of the observations were recorded in sage-grassland habitats, and the other half were recorded in grassland habitats. Five observations were made in July. Herd size averaged 8.3 individuals and ranged from one to 20. Two observations were made in grassland, two were recorded in woodlands, and one was documented in sage-grassland habitat.

### **J.2.4 Elk**

OEA observed elk in the study area around Brandenburg and areas south of Birney. OEA recorded 39 observations of elk or their sign between March and July. Groups of up to seven elk were documented, with the largest group consisting of seven bulls. Elk sign (e.g., droppings, antler sheds, remains) was recorded in Custer National Forest, northeast of Ashland, and in Otter Creek. Most observations occurred in woodlands; however, elk were also observed in grasslands, and sign was found in riparian habitats.

### **J.2.5 Predators**

Mountain lion and black bear have distribution ranges classified as general habitat, which overlap the study area (Montana Fish, Wildlife & Parks 2013a, 2013b). Mountain lion habitat is typically rugged terrain with dense vegetation cover (Montana Fish, Wildlife & Parks 1996). Black bear habitat is similar; however, the habitat needs to also include riparian areas with available berries (Montana Natural Heritage Program and Montana Fish, Wildlife & Parks n.d.-a).

Nine observations of black bear have been made since 2006, and 13 observations of mountain lion have been made since 1995 in the study area (Montana Natural Heritage Program 2013a, 2013b). Observations of both species occurred in areas just north of Ashland and throughout the southern portion of the study area. The gray wolf range does not extend into eastern Montana (Montana Fish, Wildlife & Parks 2013c); however, individuals have been historically documented in the study area. One observation of five individuals was

recorded in 1916 in the Miles City area (Montana Natural Heritage Program 2013b). More recently, observations have occurred on the Northern Cheyenne Reservation around Ashland (Roundstone pers.comm.).

OEA did not document black bears, wolves, or sign thereof in the study area in any surveys conducted in 2013. OEA did document four observations of mountain lion sign (tracks and droppings) during spring and summer ground surveys.

## J.3 Furbearers

Beaver are common along the Tongue River throughout the entire study area. Bobcats are also common, with 84 observations in the study area since 1994 (most observations were obtained from trapping data). Muskrat are also seen in habitats along the Tongue River throughout the study area. One observation of swift fox recorded in 1978 occurred near the Brandenburg area (Montana Natural Heritage Program 2013b). The Montana Natural Heritage Program (2013a, 2013b) has documented only one occurrence of American mink in the study area (in 2008). The occurrence was along the Tongue River in the Ashland area.

OEA documented beaver, bobcat, muskrat, and swift fox in the study area during 2013 aerial and ground surveys. Beaver or beaver sign were recorded in riparian areas along the Tongue River and in Moon Creek. Bobcat or bobcat sign were observed in the Otter Creek area as well as in various habitats, ranging from grassland to forest, south of Birney. One muskrat was observed in the Tongue River just north of Ashland. One swift fox was observed in grasslands north of Miles City.

## J.4 Nongame Mammals

### J.4.1 Medium Mammals

Medium mammals include mammals that are larger than a prairie dog and smaller than big game. Eleven species have been historically documented in the study area (Montana Fish, Wildlife & Parks 2004a, 2004b; Montana Natural Heritage Program 2013a, 2013b). These species are badger (*Taxidea taxus*), black-footed ferret (*Mustela nigripes*), coyote, desert cottontail (*Sylvilagus audobonii*), mountain cottontail (*Sylvilagus nuttallii*), porcupine (*Erethizon dorsatum*), raccoon (*Procyon lotor*), red fox, striped skunk (*Mephitis mephitis*), white-tailed jackrabbit (*Lepus townsendii*), and yellow-bellied marmot (*Marmota flaviventris*). Historically, badgers have been recorded in the Ashland area. The two historic observations of black-footed ferret in the study area occurred in 1923; these observations were of ferret remains. Desert and mountain cottontail as well as white-tailed jackrabbit occurrences are infrequent, most recently in the central portion of the study area. Porcupines are common in riparian areas; however, only two records exist in the Otter Creek area, in an area just north of the Tongue River Reservoir. Yellow-bellied marmots are also infrequent

and have been recorded only south of Birney. Coyotes, raccoons, red fox, and striped skunk are common and have been recorded throughout the study area.

OEA documented nine medium mammals during 2013 surveys. OEA recorded badger or badger sign throughout the study area. The two documented badgers were seen in relatively the same location between Foster Creek Road and SW Cut Across Road. Cottontail rabbit species (desert cottontail or mountain cottontail) or sign thereof were seen throughout the study area; however, a higher concentration was documented between Birney and the Tongue River Reservoir. Ninety-three observations were made of coyote or coyote sign. Coyotes occurred in all habitat types throughout the study area. Porcupines were commonly seen in deciduous trees throughout the study area during winter aerial surveys as well as woodlands during spring and summer ground surveys. Six observations of raccoon were made, primarily in the northern half of the study area; however, one was documented in the Birney area. One red fox was documented running across the road in Birney. One striped skunk was observed in a downed log near Foster Creek Road. One white-tailed jackrabbit was documented just north of the Tongue River Reservoir, and two yellow-bellied marmots were observed in the Birney area.

## J.4.2 Small Mammals

Small mammals include all mammals equal in size or smaller than a prairie dog. Twenty-four small mammal species have historically occurred in the study area (Table J-4), of which several are bat species (Montana Fish, Wildlife & Parks 2004a, 2004b; Montana Natural Heritage Program 2013a, 2013b). OEA conducted target aerial and ground surveys for black-tailed prairie dogs (*Cynomys ludovicianus*) and associated colonies as well as echolocation surveys for bat species. All other small mammals were recorded as incidental observations during all other surveys. Data collected, using a handheld global positioning system (GPS) unit, included species, number, habitat association, and locations.

In addition to various bat species and black-tailed prairie dogs, OEA documented six small mammal species in the study area. The most common species was the northern pocket gopher (*Thomomys talpoides*), followed by the least chipmunk (*Tamias minimus*). Northern pocket gopher mounds were commonly observed in burned grassland and shrubland in the Ashland and Otter Creek areas as well as grasslands and shrublands throughout the southern portion of the study area. Least chipmunks were most common in woodland habitats between Birney and the Tongue River Reservoir; however, two other observations were made just south of Miles City and just north of Ashland. Three Ord's kangaroo rats (*Dipodomys ordii*) were observed in grasslands along the Tongue River and in shrubland along Moon Creek. One red squirrel (*Tamiasciurus hudsonicus*), plus tracks, was documented in burned and unburned forest. Short-tailed weasel (*Mustela erminea*) tracks were observed in fresh snow within the coniferous forest in the southern portion of the study area. Bushy-tailed woodrats (*Neotoma cinerea*) were also documented.

### J.4.2.1 Black-Tailed Prairie Dog

Black-tailed prairie dog range overlaps much of eastern and central Montana, primarily in shortgrass prairies with flat or gently rolling hills (Montana Natural Heritage Program Parks & Montana Fish, Wildlife & Parks n.d.-b). Prairie dog burrows are used by burrowing owls (*Athene cunicularia*), swift foxes, and rattlesnakes (*Crotalus* spp.), among other species (Nistler 2009). They also provide an important food source for black-footed ferrets, a variety of raptor species, and coyotes (Esch et al. 2005; Sharps and Uresk 1990). Prairie dogs also create a unique habitat that is used by various avian species, especially grassland birds (Dinsmore et al. 2005; Knowles et al. 1982; Smith and Lomolino 2004). Vegetation near colonies attracts ungulate species because prairie dog grazing stimulates grass growth, encourages species diversity, and increases the nitrogen content of vegetation (Bonham and Lerwick 1976; Sharps and Uresk 1990).

Black-tailed prairie dog populations fluctuate drastically. Population declines generally occur in response to the conversion of habitat to cropland, recreational shooting, disease (primarily sylvatic plague), and poisoning (Farmer 2012, FaunaWest Wildlife Consultants 2012, Montana Prairie Dog Working Group 2002). Population increases occur in response to a population declines as the remaining individuals reproduce earlier and have larger litters. These dynamics directly affect species that depend on the black-tailed prairie dog as prey. They also affect species that depend on black-tailed prairie dog habitat (Montana Prairie Dog Working Group 2002; Nistler 2009).

Recently, two epidemics of plague occurred in southeastern Montana, affecting prairie dogs in the study area. The first epidemic occurred from the late 1980s to early 1990s. During that time, colonies in the region were drastically reduced. Of 183 known colonies throughout Powder River and Custer Counties, only 47 survived. Acres of prairie dog colony decreased on the Northern Cheyenne Reservation from 10,758 to 650 (Montana Prairie Dog Working Group 2002). Beginning in the mid-1990s, populations had been increasing in the region; however, another epidemic started in approximately 2010 as active colonies in the Otter Creek area were extirpated, and other colonies showed significant reductions (Farmer 2012; FaunaWest Wildlife Consultants 2012). Species that were extirpated no longer survive in the region, which was once part of their range.

OEA located and mapped active black-tailed prairie dog colonies in the study area (Table J-1 and Figure J-1). Agency colony data were verified from the air during winter and spring aerial surveys because prairie dog mounds are easily seen from the air. These locations were verified from the ground to note activity and map boundaries where ground access was permitted. Any additional active prairie dog colonies found during spring and summer ground surveys were also mapped. All active colonies that overlap the study area were mapped using a handheld GPS unit.

**Table J-1. Prairie Dog Colonies in the Study Area**

Colony ID	Location	Acres
A	Sect 22, 7N:47E	0.9
B	Sect 26, 7N:47E	21.9
C	Sect 26, 7N:47E	4.4
D	Sect 36, 7N:47E	45.8
E	Sect 12, 6N:47E	10.2
F	Sect 7, 6N:48E	114.6
G	Sect 16, 6N:46E	35.2
H	Sect 27, 6N:46E	8.0
I	Sect 26, 6N:46E	23.0
J	Sect 35, 6N:46E	17.9
K	Sect 16, 5N:47E	1.2
L	Sect 16, 5N:47E	3.8
M	Sect 12, 5N:47E	30.4
N	Sect 13, 5N:47E	26.7
O	Sect 23, 5N:47E	34.4
P	Sect 22, 5N:47E	63.6
Q	Sect 22, 5N:47E	2.2
R	Sect 13, 5N:47E	1.6
S	Sect 36, 5N:47E	89.4
T	Sect 6, 4N:48E	2.7
U	Sect 23, 4N:47E	2.0
V	Sect 9, 4N:47E	33.9
W	Sect 9, 4N:47E	9.8
X	Sect 19, 4N:47E	37.1
Y	Sect 30, 4N:47E	2.9
Z	Sect 24, 4N:46E	30.9
AA	Sect 25, 4N:46E	39.6
BB	Sect 36, 4N:46E	3.8
CC	Sect 15, 2N:45E	89.2
DD	Sect 8, 2N:45E	78.4
EE	Sect 8, 2N:45E	27.3
FF	Sect 32, 2N:45E	59.7
GG	Sect 5, 4S:45E	36.4
HH	Sect 4, 4S:45E	51.0
II	Sect 36, 4S:43E	5.0
JJ	Sect 22, 5N:47E	11.2

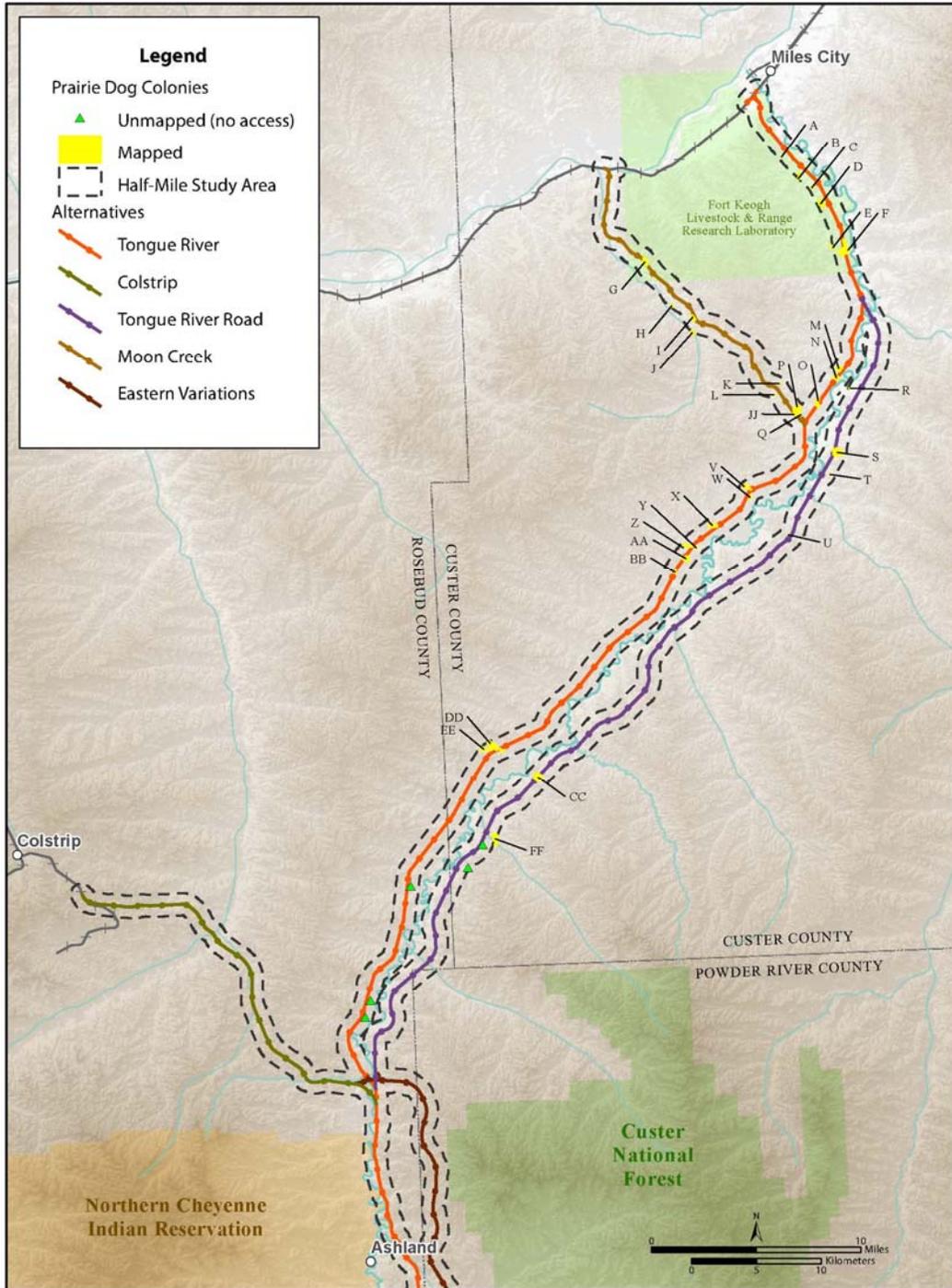


Figure J-1a. Black-Tailed Prairie Dog Colonies

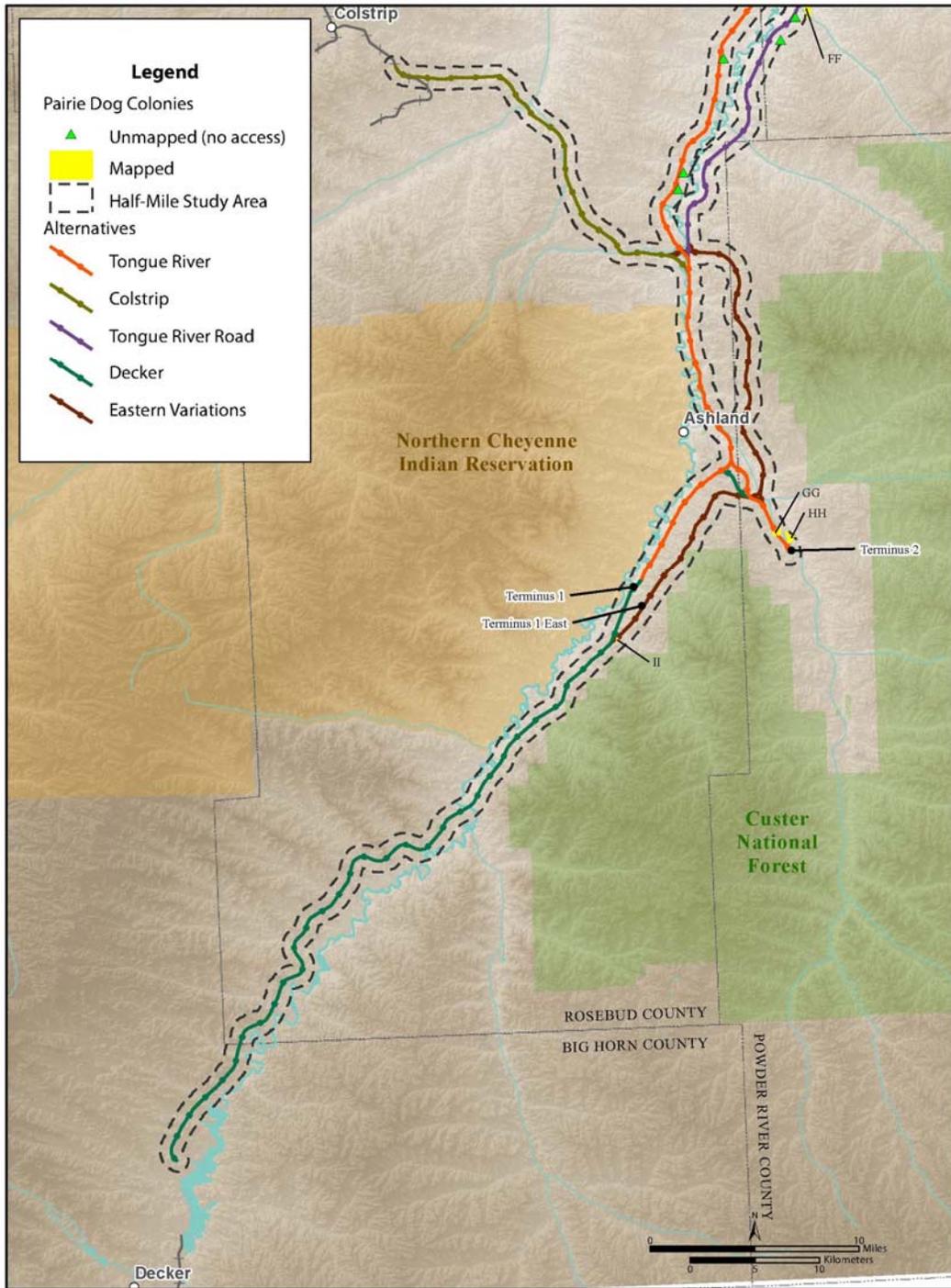


Figure J-1b. Black-Tailed Prairie Dog Colonies

## J.4.2.2 Bats

Eight bat species have been documented historically in the study area (Montana Natural Heritage Program 2013a, 2013b). These are the big brown bat (*Eptesicus fuscus*), hoary bat (*Lasiurus cinereus*), little brown myotis (*Myotis lucifugus*), long-eared myotis (*Myotis evotis*), long-legged myotis (*Myotis volans*), silver-haired bat (*Lasionycteris noctivagans*), Townsend's big-eared bat (*Corynorhinus townsendii*), and western small-footed myotis (*Myotis ciliolabrum*). Most of these species are common and found throughout the study area, but the hoary bat, long-legged myotis, and Townsend's big-eared bat are uncommon in the study area, with only one documented occurrence of each species between 2004 and 2009.

OEA conducted two acoustic bat surveys with the recording methods defined by Montana Natural Heritage Program protocols. One survey was conducted over a period of 7 days in late July to assess bat species that were using the area for breeding; a repeat survey was conducted in early September to determine the species that were using the area during migration. Five sites north of Ashland were selected for monitoring during July, and four of those sites were again monitored in September. One site was not sampled in September because access was restricted. Other areas in the study area were not monitored because the Montana Natural Heritage Program currently has long-term bat monitoring stations in Colstrip, Ashland, Otter Creek, and near Tongue River Reservoir. Bat echolocation calls were recorded starting at 30 minutes prior to sunset and continued through sunrise the following morning for each survey day. Recorded calls were analyzed using SONOBAT Bat Echolocation software (Arcata, CA). Only calls displaying call characteristics known to be associated with specific species were used for compiling the bat species list.

OEA documented 10 species during the 2013 surveys. Those included Townsend's big-eared bat, big brown bat, silver-haired bat, red bat (*Lasiurus* spp.), hoary bat, western small-footed myotis, long-eared myotis, little brown bat, fringed myotis (*Myotis thysanodes*), and long-legged myotis. All species were recorded at all survey points except for Townsend's big-eared bat, which was detected only at Fort Keogh.

## J.5 Raptors

OEA conducted surveys for raptors (birds of prey), relying on opportunistic observations of raptors while traveling throughout the study area as well as comprehensive nest searches and monitoring. Because of restricted ground access, rough topography, and dense woodlands, OEA conducted several aerial surveys for comprehensive coverage of the study area. Raptor nests were opportunistically marked during all winter aerial surveys. These nests and known nests, obtained from agency data, were then systematically checked once in mid-April from the air.

OEA conducted ground surveys for nesting raptors from April 15 to mid-July 2013. During all surveys, OEA followed guidelines recommended by Rosenfield et al. (2007) to prevent nest abandonment, damage to eggs, or injury to young. Early in the breeding season, nests

were identified and observed from a distance using binoculars and a spotting scope. OEA did not approach nests on foot before late May or until adult pairs were finished incubating and brooding newly hatched young. Searches for nesting raptors continued into June, and all active nests were visited late in the breeding season to document their final status and productivity.

OEA conducted both vehicular and pedestrian ground-based surveys. Ground-nesting species were surveyed on foot by searching for prominent nesting substrates and varied topography (e.g., draws, badlands, hillsides). OEA drove slowly throughout the study area and stopped frequently to watch and listen for raptors. Areas where individuals or pairs were repeatedly seen were thoroughly searched for nests. Once identified, raptors were monitored for signs of nesting activity. If birds exhibited defensive behavior, particularly when approached, the surrounding area was thoroughly searched on foot during the appropriate time of year to avoid being disruptive and potentially jeopardizing the success of a nest. The appropriate time of year for searching differs between species, depending on breeding cycles; OEA searched areas when young were roughly 3 to 4 weeks old. OEA also used binoculars and spotting scopes to examine nesting substrates such as trees, cliffs, and buttes throughout the study area.

Overall, OEA documented 19 species of raptors in the study area during winter and spring surveys in 2013 (Table J-4). Six of the 19 species were recorded during winter surveys: bald eagle (*Haliaeetus leucocephalus*), great horned owl (*Bubo virginianus*), golden eagle (*Aquila chrysaetos*), northern harrier (*Circus cyaneus*), rough-legged hawk (*Buteo lagopus*), and red-tailed hawk (*Buteo jamaicensis*). Bald eagle and golden eagle were the most common raptors observed throughout the study area. Rough-legged hawks and red-tailed hawks were also common and observed perched in cottonwood trees along the Tongue River. Two northern harriers were documented during winter aerial surveys in the southern half of the study area in shrublands near Birney and in disturbed habitats at the Decker Mine. One great horned owl was observed flying in the Otter Creek drainage.

OEA documented 18 raptor species during spring ground surveys in 2013, including those seen during winter surveys (listed above) and American kestrel (*Falco sparverius*), barn owl (*Tyto alba*), burrowing owl (*Athene cunicularia*), Cooper's hawk (*Accipiter cooperii*), eastern screech owl (*Megascops asio*), ferruginous hawk (*Buteo regalis*), long-eared owl (*Asio otus*), merlin (*Falco columbarius*), osprey (*Pandion haliaetus*), prairie falcon (*Falco mexicanus*), short-eared owl (*Asio flammeus*), sharp-shinned hawk (*Accipiter striatus*), and Swainson's hawk (*Buteo swainsoni*). Rough-legged hawk was not documented after March because the species is a winter resident in Montana. Northern harriers and golden eagles were the most common and seen throughout the study area; however, northern harriers were most common north of Ashland. One barn owl was recorded in sage-steppe habitat along the Tongue River south of Mile City. Three eastern screech owls and one dead eastern screech owl were documented in habitats north of Ashland. Five ferruginous hawks were observed in open habitats, hunting on prairie dog colonies, mostly north of Ashland. Four merlins were documented in open habitats and the burned forest near Ashland and just north of the Tongue

River Reservoir. One short-eared owl carcass was documented at the confluence of Moon Creek and the Tongue River. Two sharp-shinned hawks were seen along the Tongue River north of Ashland. Five Swainson's hawks were recorded in the northern extreme of the study area, in Otter Creek, as well as at the Tongue River Reservoir. The remaining nine species were documented breeders in the study area. According to BLM and Montana FWP raptor nest records, 77 nests occur or have occurred in the study area (Bureau of Land Management 2013b; Montana Fish, Wildlife & Parks 2013d). OEA checked 74 of those nest sites in 2013, and only 33 nests were found to be present and intact. The remaining 41 nests were no longer intact. Three of those nest sites were not surveyed in 2013 because they were from a different data source and were not incorporated into the master data set prior to surveys; these nests were assumed present. In response to USFWS concern regarding golden eagles, one additional nest record from the U.S. Forest Service as reported to the Montana Natural Heritage Program was checked during ground surveys; however, nothing at this location indicated a golden eagle nest or recent nesting activity. Eleven additional nests occur in the wildlife monitoring survey areas for nearby mines, which overlap the study area (Decker Coal Company 2013a; ICF International 2013a, 2013b; Thunderbird Wildlife Consulting 2013). Data for raptor nests in the overlapping wildlife monitoring survey areas for these mines were obtained from the mines' annual wildlife reports. In addition, OEA documented 123 new nests that were previously undocumented in the study area.

Using data from OEA surveys of existing nest sites and OEA-documented new nest sites, OEA identified 170 intact raptor nests in the study area. In 2013, 50 nests were active, 117 nests were inactive and intact, and three were unknown (see Figure J-2 for raptor nest locations in the study area).

OEA was able to access and check 111 nests from the ground to determine status, condition, and productivity. Universal Transverse Mercator (UTM) coordinates were verified for all nests where ground access was granted and recorded for all new nests. The status (active or inactive) and condition of all nests, including the presence of young at active nests, were recorded during each visit. Ground information as well as mine data are the most accurate data available and reported in lieu of aerial data. All other information reported was obtained from aerial surveys.

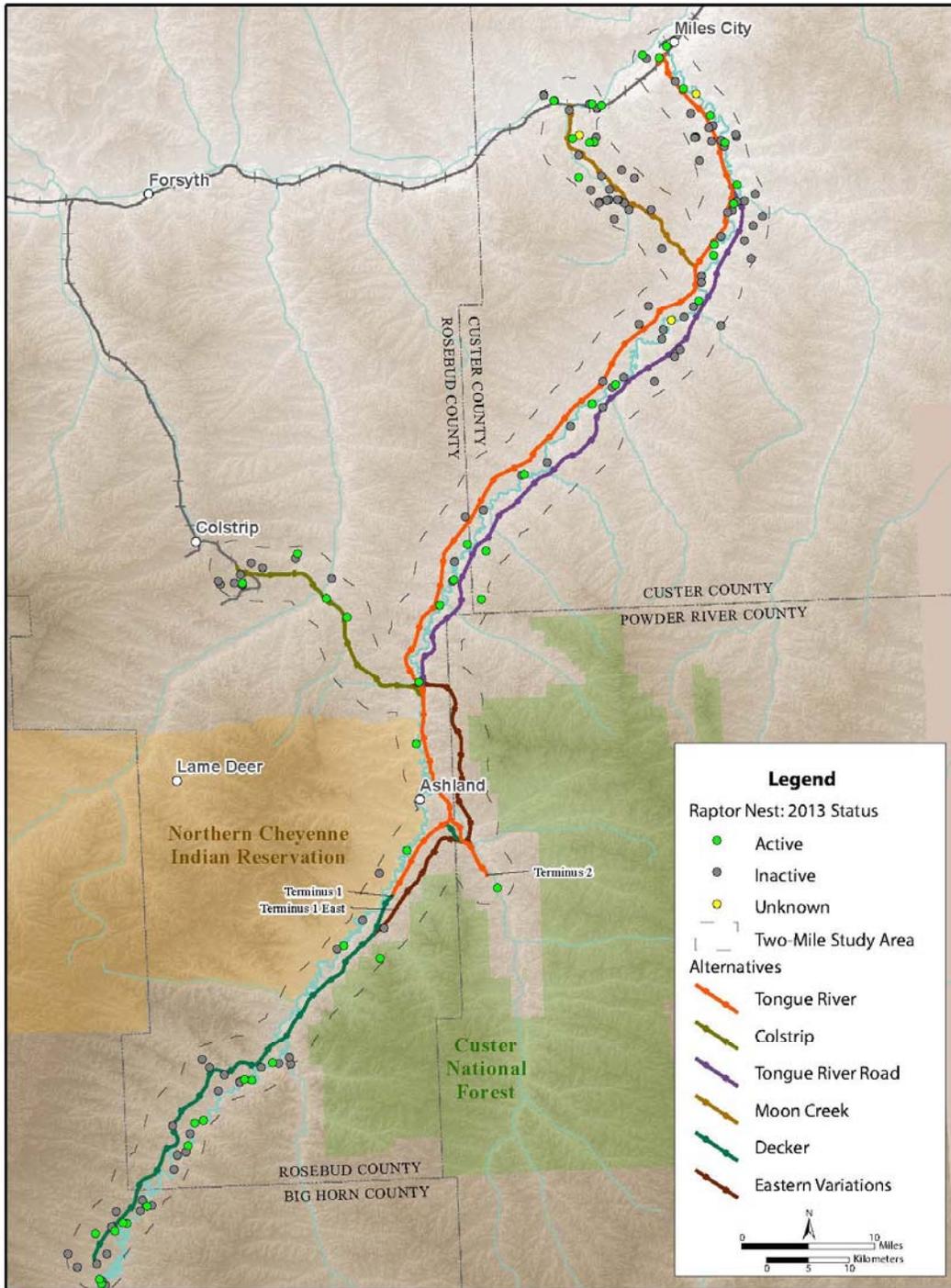


Figure J-2. Raptor Nests

## J.5.1 American Kestrel

American kestrels, North America's smallest falcon species, use habitats present in the study area for wintering, migration, and breeding. American kestrels are primarily year-round residents, but a subset of the population may migrate through, moving between breeding and wintering areas. Kestrels inhabit open areas with few trees; however, a few trees are necessary because they need them for nesting substrates. They are secondary cavity nesters, using cavities created by woodpeckers or natural hollows in trees. However, they have also been documented to use rock crevices when trees are unavailable. American kestrels eat primarily insects but have been known to capture small mammals, birds, reptiles, and amphibians.

American kestrels are frequently seen throughout the study area, and OEA documented them in all habitat types. Two new nests were documented during 2013 ground surveys. Both were cavity nests in dead ponderosa pine trees. One was found just south of Beaver Creek Road; the second was found on Custer National Forest west of Odell Creek Road.

## J.5.2 Bald Eagle

OEA conducted bald eagle winter roost aerial surveys according to BLM survey protocol, modified with USFWS, BLM, and Montana FWP input to suit the use of a helicopter and meet Federal Aviation Regulations (Bureau of Land Management 2011; Federal Aviation Administration 2010). Helicopter surveys are generally considered the most accurate way to characterize animal populations (Bender et al. 2003). The flight crew included two OEA biologists and a pilot in a Jet Ranger helicopter. Flight speeds ranged from 60 to 95 miles per hour (mph), with an average speed of 80 mph. Altitudes ranged from 50 to 150 feet, depending on canopy height, with an average altitude of 96 feet.

OEA assessed the abundance and distribution of bald eagles throughout the study area during three aerial surveys in January and February 2013. Because of the amount of area to be covered, surveys were conducted over 2 to 3 days, each separated by 1 week. Round one occurred on January 26 and 27, round two occurred between February 11 and 13, and round three occurred between February 26 and 28.

All riparian and woodland habitats in the study area with appropriate roosting habitat were covered by flying along drainages, river corridors, and ridgelines. The survey route started near Decker and moved north by northeast toward Miles City. As per protocol, round one and round two started 30 minutes before sunrise and ended 1 hour after sunrise; round three started 1 hour before sunset and ended 30 minutes after sunset.

Data collected included age classifications, habitat associations, and UTM coordinates.

### **J.5.3 Burrowing Owl**

Burrowing owls use habitats in the study area for breeding. They inhabit dry, open areas with short, sparse grass and no trees. Burrowing owls nest in burrows that they line with manure. The burrows are typically associated with prairie dog colonies. The burrowing owls forage on insects, small mammals, birds, reptiles, and amphibians.

OEA recorded seven burrowing owls in the study area in 2013. All were seen in prairie dog colonies in the northern extreme of the study area; however, no nests were ever documented. Four historic burrowing owl nests within the study area were inactive in 2013.

### **J.5.4 Cooper's Hawk**

Cooper's hawks use habitats in the study area for breeding. They inhabit woodlands and nest in mature trees, usually in flat terrain. They forage primarily on medium birds (e.g., American robin); however, small mammals are also prey items.

OEA observed five Cooper's hawks in the study area, from just north of Brandenburg to the Tongue River Reservoir, in riparian and woodland habitats. No historical Cooper's hawk nests exist; however, two new nests were documented in 2013. One nest was located south of Interstate 94, near Moon Creek Road, and the second was located between Odell Creek Road and Highway 4. The Moon Creek Road nest was located in a juniper; however, this nest failed in late May. Inspection of the nest on June 5 found broken eggshells on the ground below the nest. The Odell Creek Road nest was found in a green ash in early July. At that time, there were three nestlings in the nest; however, at a later nest check in mid-July, only two nestlings were documented. This nest is marked as successful because of the nestlings' advanced age at the time of the last nest check.

### **J.5.5 Great Horned Owl**

Great horned owls use habitats in the study area year-round; however, individuals farther north may move into the area during winter in response to environmental conditions. Great horned owls are common and found in almost all habitat types; however, they seem to prefer a mix of open habitats and trees. They typically nest in tree nests built by other species in previous years. However, they also will use tree and rock cavities as well as cliffs. Their diet includes a wide range of small to medium-sized birds and mammals as well as fish, reptiles, amphibians, and insects.

OEA observed great horned owls throughout the study area in riparian and woodland habitats. Five nests exist in the study area. One was active in 2013; the nest is located in the wildlife monitoring area for the Decker Mine (Decker Coal Company 2013b).

## J.5.6 Long-Eared Owl

Long-eared owls inhabit dense forests near open grass or shrubland. Nests are typically found in trees and constructed by other species in previous years. Prey items consist mainly of small mammals.

Long-eared owls are uncommon in the wildlife study area, but OEA documented a few, primarily in woodlands. One was documented in the Moon Creek area, and two were observed south of Ashland. No historical nest records exist, but two new nests were documented in 2013. A third nest was historically a red-tailed hawk nest. One nest was located after extensive searching in response to multiple sightings in the Moon Creek area. This nest was in a green ash; however, the nest failed in late May. Inspection of the nest on June 5 found broken eggshells on the ground below the nest. The second nest is located near the Tongue River Reservoir in a live cottonwood. A long-eared owl was documented incubating during aerial surveys in April. However, the outcome of this nest is unknown because ground surveys in this area did not occur until early July, and no activity was noted at that time. The third long-eared owl nest is a historical red-tailed hawk nest located off Greenleaf County Road. This nest was documented as active in early April, during aerial surveys, and subsequently monitored from the county road. One nestling was observed on May 7; however, this nest was crushed in late May by a broken branch. This nest is marked as successful because of the advanced age of the nestling; in previous nest checks, the nestling was observed walking around the nest.

## J.5.7 Osprey

Ospreys are found near open bodies of water, including fish-bearing rivers and lakes. Nesting substrates are typically human-made platforms, power poles, or other structures. Nesting sites are in the open for easy approach. Osprey forage almost exclusively on live fish.

Osprey are common near the confluence of the Tongue River and the Yellowstone River as well as near the Tongue River Reservoir. OEA made a few observations in the middle portion of the study area adjacent to the Tongue River. One historical nest occurs in the study area, and six new nests were documented during 2013 ground surveys. Five of the new nests had documented breeding attempts; the sixth nest was built but never used. Two of the new nests failed.

## J.5.8 Prairie Falcon

Prairie falcons generally nest on cliffs and forage on small mammals as well as small birds. Prairie falcons are uncommon in the study area; OEA documented six in open grasslands and burned habitats. All observations were made north of Ashland. Three historical nest records exist in the study area, and one new nest was documented in 2013. All three historical nests were inactive. The new nest was documented on June 17 when it was observed that four fledglings were waiting to be fed on a cliff as an adult flew in with a prey item.

## **J.5.9 Red-Tailed Hawk**

Red-tailed hawks occur in every habitat type because they forage primarily on small mammals. Nests are usually in trees, but hawks have been known to nest on cliffs. OEA noted red-tailed hawks in late January and early February, during winter aerial surveys and very commonly during spring and summer ground surveys. Fourteen historical red-tailed hawk nests exist in the study area. Thirteen new nests were documented during 2013 surveys, and one new nest was documented in the Rosebud Mine survey area (ICF International 2013a). Eighteen nests were active in 2013; three of the nests failed. In all three nests, a red-tailed hawk was observed incubating in late April/early May, and two of the nests had no activity in mid-June. In the third nest, two nestlings were documented in mid-June, but in mid-July, only one nestling was seen; a week later, there was no sign of young. The nest area was searched on July 23; nothing obvious indicated the reason for failure, but an adult was in the area. Five nests were successful, with eight fledglings noted. An additional three nestlings were recorded in three nests; however, because of the timing of the nest checks, fledglings were not noted. The remaining seven active nests did not have enough information for determining success or productivity.

## **J.6 Upland Game Birds**

In addition to greater sage-grouse and sharp-tailed grouse, discussed in detail below, OEA documented three other species of game birds that were incidentally observed in the study area during all wildlife surveys. Ring-necked pheasants were common throughout the study area, with 37 observations throughout the field season. Six observations were made during winter aerial surveys, with 19 birds seen; 31 observations were documented during spring and summer surveys. Generally, only one or two birds were documented in spring and summer surveys, but one group of nine was seen foraging along a road. Wild turkeys were also common; however, most observations were concentrated south of Ashland, along the Tongue River corridor. Twenty-five observations were recorded during winter aerial surveys; the group size ranged from two to 66. Most were seen in riparian habitats or nearby hayfields. Sixteen observations of wild turkey or sign thereof were recorded during spring and summer ground surveys. Groups ranged in size from one to 93. The group of 93 was observed in a pasture, and at least nine males were strutting simultaneously. A group of 10 Hungarian partridges was also documented near the Tongue River Reservoir during 2013 ground surveys.

### **J.6.1 Greater Sage-Grouse**

Sage-grouse populations have been under agency management for decades. Management of sage-grouse populations is under state jurisdiction (Bureau of Land Management 2013a, Montana Sage Grouse Work Group 2005). Habitat requirements of sage-grouse vary throughout their life cycle, which complicates effective management of this species.

In the last few years, agencies have started to standardize habitat management practices by incorporating conservation measures at a landscape scale. This approach stresses the use of corridors to ensure that animals can move between populations and core areas to protect a large subset of the population. Because sage-grouse use a variety of habitats throughout their life cycle, efforts are made to protect certain areas in these various habitats and ensure population stability over the long term. Montana has designated 19 different areas as sage-grouse core habitat; these areas cover 56 percent of the known leks and 71 percent of the population based on peak male counts (U.S. Department of Agriculture Natural Resources Conservation Service 2009). Habitats in these areas have been identified as crucial to maintaining sage-grouse populations and are used by agencies in management decisions regarding projects in these areas. Winter concentration areas, which have not been designated by the State of Montana, are generally near core areas because grouse move several miles between breeding and wintering habitats.

State, federal, and private entities are actively involved in monitoring sage-grouse populations in Montana. Selected leks are monitored throughout the state. Harvest information is also gathered through post-harvest telephone surveys and wing collections (Montana Sage Grouse Work Group 2005). Lek data and the number of males attending a given lek provide managers with the information they need to gauge population trends and promote the conservation of the species.

The long-term management status of a lek includes designations for active, inactive, and unconfirmed leks and is based on the definitions provided below (Bureau of Land Management 2009). A confirmed sage-grouse lek is one with a minimum of 2 years of data that indicate its presence. Adequate data include 2 years with two or more recorded males displaying or 1 year with two or more males displaying followed by evidence of bird breeding activity the second year. There are three subcategories for a confirmed lek. An active lek is the default assignment unless criteria are met for the inactive or extirpated subcategories. An inactive lek is one with no sign of lek activity in the last 10 years, supported by surveys conducted during 3 or more years over the 10-year period. An extirpated lek is one where habitat changes have caused birds to abandon the lek permanently. A provisionally confirmed sage-grouse lek is a location where recent evidence of lekking has been documented, with or without observed sage-grouse. An unconfirmed sage-grouse lek is a single observation (or count) with no subsequent survey or a reported lek without supporting survey data.

### **J.6.1.1 Winter Concentration Areas**

Winter sage-grouse aerial surveys were conducted to search for concentration areas. OEA conducted surveys according to Montana FWP protocol for lek monitoring, modified with Montana FWP, BLM, and USFWS input for winter surveys to suit the use of a helicopter and meet Federal Aviation Regulations (Federal Aviation Administration 2010; Montana Sage Grouse Work Group 2005). The ability of observers to see wildlife during aerial surveys is influenced by many factors, including snow cover, light conditions, habitat, topography,

weather, group size, activity, sex, age, and the position of animals relative to the aircraft (Bodie et al. 1995; Green et al. 2008; Pearse et al. 2008; Samuel et al. 1987). Furthermore, habitat associations recorded during aerial surveys are biased toward level, open habitats (e.g., grasslands and agricultural lands) where animals are most visible, as opposed to wooded or broken terrain. Any large disparity between seasonal counts is probably influenced to a large degree by these biases; however, the use of a helicopter minimizes these factors because of the maneuverability of the aircraft. Helicopter surveys are generally considered the most accurate way to characterize populations over a large area (Bender et al. 2003; Green et al. 2008). The flight crew included two OEA biologists and a pilot in a Jet Ranger helicopter. Flight speeds ranged between 50 and 65 mph, with an average speed of 57 mph. Altitudes ranged between 50 and 150 feet, depending on terrain, with an average altitude of 75 feet. Temperature and snow cover information were also recorded for all flights. Weather was monitored continually throughout January and February and survey dates were selected within the survey windows for optimal survey conditions, which included relatively low temperatures and were after snowstorms.

OEA assessed the abundance and distribution of winter greater sage-grouse flocks in the study area during two aerial surveys in January and February 2013. Because of the amount of area covered, surveys were conducted over 6 days, and two rounds were separated by 1 week. Round one occurred between January 26 and February 3, and round two occurred between February 11 and 26.

OEA surveyed grouse habitat (as designated by Montana FWP) and general habitat (as designated by BLM) in the study area by flying north/south transects spaced at a 0.5-mile interval (Bureau of Land Management 2013a; Montana Fish, Wildlife & Parks 2013d). The survey route started in the northeastern most area, near Miles City, and moved southwest. Each day, the survey route moved farther south. OEA flew transects from east to west to avoid looking directly into the sun; however, in the interest of efficiency, this was not always possible. Surveys started at approximately 8 a.m. and ended around 4 p.m.; however, depending on weather conditions, start times were as late as 9 a.m., and end times varied between 2 and 5 p.m. Data collected included species, habitat associations, and UTM coordinates.

OEA made only two observations of sage-grouse during winter aerial surveys. Both were documented on February 19, 2013, along the Moon Creek drainage. One group of two individuals was observed in Section 11, T5N:R46E; the second group of four was observed to the southeast in Section 18, T5N:R47E. Only one set of tracks was found in Section 36, T3S:R44E. Because the location of the tracks was on Montana state land, the helicopter landed so the tracks could be investigated; however, the results of the investigation were inconclusive because it could not be determined whether the tracks were sage-grouse or sharp-tailed grouse and no roost piles or feathers were found in the surrounding area. All three observations were made in moderately dense to dense sagebrush stands.

## **J.6.1.2        Leks**

### **Aerial Surveys**

OEA monitored greater sage-grouse leks in the study area from the air. Prior to spring aerial surveys, habitat analyses were conducted using current aerial photos and digital elevation models to find areas with gentle slopes (less than 10 percent grade) and no tree cover as well as areas with appropriate habitat in which to search for new leks. To target appropriate habitats, these analyses were presented to cooperating agencies (BLM, Montana FWP, and USFWS) for guidance and input. Two areas were identified for systematic searches for new grouse leks.

OEA conducted aerial surveys according to Montana FWP survey protocol for lek monitoring. The method was modified with Montana FWP, BLM, and USFWS input to suit the use of a helicopter and meet Federal Aviation Regulations (Federal Aviation Administration 2010; Montana Sage Grouse Work Group 2005). Three rounds of surveys were conducted, and each round was conducted over 5 to 8 days. Flight speeds ranged between 50 and 60 mph, with an average speed of 57 mph. Altitudes ranged between 50 and 150 feet, depending on terrain, with an average altitude of 75 feet. Round one occurred over 8 days between March 25 and April 3. The survey flight on March 30 was shortened because of rain and increasing winds. Round two occurred over 7 days between April 4 and 20. Round three occurred over 5 days between April 22 and 26.

OEA covered habitat previously identified for systematic searches by Montana FWP, BLM, and USFWS in the study area by flying north/south transects spaced at a 0.5-mile interval. The survey route started in the northeastern area, south of Miles City, and moved southwest. Each day, the survey route moved farther south, and transects were flown from the east to the west to avoid looking directly into the sun. Surveys started 0.5 hour before sunrise and concluded 2 hours after sunrise. Known greater sage-grouse leks were targeted during the first hour, the time when they are most active (Montana Sage Grouse Work Group 2005).

OEA collected data on the number of birds at the lek site, sex (if able to determine), number of displaying males, habitat associations, and UTM coordinates.

### **Ground Surveys**

OEA followed Montana FWP survey protocols for lek monitoring where land access was granted in the study area (Montana Sage Grouse Work Group 2005). OEA checked all known leks where land access was permitted at least twice during spring ground surveys. OEA also searched for new leks and paid careful attention to leks recorded as active during aerial surveys to ensure that they were able to obtain a good ground count.

OEA also searched for new leks, primarily in lek habitat (level to rolling grassland and sagebrush-grassland). Field crews stopped at vantage points that were spaced no more than 1 mile apart in appropriate habitat to ensure full coverage of the area. Once displaying

grouse were found, an observer drove or walked to a vantage point near each site. Birds were counted several times until an accurate tally was made of both males and females.

OEA recorded data on sage-grouse use, either recorded as actual grouse sightings or documentation of their sign (e.g., droppings, cecal deposits, and/or feathers); the number of birds; sex; and activity (if live observations) as well as the habitat and UTM coordinates. Incidental observations of greater sage-grouse were also recorded during all surveys. Data collected for these incidental observations included number, sex (if able to determine), habitat, and UTMs.

## **J.6.2 Sharp-Tailed Grouse**

Sharp-tailed grouse occur throughout most of Montana and are a common sight in the study area (Montana Natural Heritage Program & Montana Fish, Wildlife & Parks n.d.-c; Montana Natural Heritage Program 2013a, 2013b). Although sharp-tailed grouse populations have declined or been extirpated in their historic range, populations in eastern Montana are currently stable (Marks et al. 2007; Montana Natural Heritage Program and Montana Fish, Wildlife & Parks n.d.-c).

Sharp-tailed grouse use small openings of grassland, interspersed with shrubs and trees, during the breeding and nesting seasons. During brood rearing, they move into open areas, such as agricultural lands, that provide grasses and forbs and support a variety of insects, which are important for young chicks. In late autumn and winter, sharp-tailed grouse form coveys (small family groups). They prefer edge habitats or riparian areas that provide a change in vegetation from open grasslands (i.e., shorter shrubs and wooded areas with taller shrubs and trees) (Goddard et al. 2009; Hays et al. 1998; Marks et al. 2007; Montana Natural Heritage Program & Montana Fish, Wildlife & Parks n.d.-c; U.S. Geological Survey n.d.).

Sharp-tailed grouse are regulated by Montana FWP as an upland game bird. Populations are monitored similar to sage-grouse, although not as intensively. Montana FWP monitors selected leks throughout the state as well as the numbers harvested during hunting to monitor populations.

### **J.6.2.1 Leks**

#### **Aerial Surveys**

The aerial survey methods for sharp-tailed grouse leks were the same as those described for greater sage-grouse.

## Ground Surveys

The ground survey methods for sharp-tailed grouse leks were the same as those described for greater sage-grouse.

## J.7 Migratory Game Birds

OEA incidentally recorded 21 species of migratory game birds during spring and summer surveys (Table J-4). Canada geese were common throughout the study area and seen in large groups, primarily in agricultural fields during winter aerial surveys and throughout the study area during ground surveys. Common goldeneyes were recorded only during winter aerial surveys and concentrated in the Tongue River area, just north of the Tongue River Reservoir. Mallards were also common throughout the study area; they were found in riparian habitats or associated with stock ponds. Mourning doves were seen throughout the study area and in all habitat types. Sandhill cranes were seen primarily north of Ashland, mostly in agricultural fields. Only one Wilson snipe and one cinnamon teal were recorded, both in the Otter Creek area. The remaining species were seen only a few times. All species were associated with agricultural fields or riparian and wetland habitats.

## J.8 Nongame Birds

OEA conducted general reconnaissance surveys for avian species and their habitats in the study area in which all observations of avian species were recorded and habitats throughout the study area were noted. Biologists also watched for avian species of concern while conducting all other field studies. In addition to searches of common grassland and shrubland communities, unique habitat features such as rock outcrops or ridges, stands of trees, creek channels, and ponds were examined. All sightings were recorded, including the species, number of individuals, sex and age (if possible), UTM coordinates, habitat, and activity. Surveys targeting avian species of concern, as well as overall avian diversity, were conducted in conjunction with other surveys.

### J.8.1 Bird Species Abundance and Richness

To provide a comprehensive picture of bird communities in the study area, OEA conducted bird point-count surveys during the dawn chorus and nocturnal (nighttime) playback surveys directly after sundown to determine bird abundance and richness. This provided the necessary data to analyze diurnal (daytime) and nocturnal bird species in the study area.

#### J.8.1.1 Diurnal Point Counts

OEA conducted two rounds of diurnal point-count surveys in 2013 (May 22 through June 11 and June 15 through 27). Survey protocol followed the procedures recommended by the

University of Montana's Avian Science Center, modified with guidance from Montana FWP, BLM, and USFWS (Young et al. 2007). Plot order was rotated during the second round of surveys to minimize bias due to time of day (Mills et al. 2000).

OEA began surveys at sunrise each day and completed them by 10 a.m. Two minutes were allocated after arriving at each plot center point to allow bird activity to resume to a normal level before starting the survey. OEA would then record all birds heard and seen within 100 meters for 5 minutes. Biologists used binoculars to help identify the birds. Birds merely flying over the plot and those seen or heard beyond 100 meters were noted as incidentals and were not included in the data analyses.

Point-count locations targeted all five major habitats types in the study area: grassland, shrubland, woodland, riparian, and agricultural (alfalfa or hayfields). Because of the amount of land that was burned in 2012, plots in burned habitats were also included. OEA established 237 fixed-radius (100-meter) circular plots in each of the five major habitats according to habitat availability. Plots were spaced at least 250 meters apart to avoid double counting.

OEA surveyed 61 grassland, 43 agricultural, 37 shrubland, 49 woodland (29 unburned and 20 burned), and 47 riparian plots (Figure J-3). In round two, four agricultural plots were not surveyed because of land access restrictions. One riparian point was inaccessible because of flooding in early June. Also, 37 points in round two were mistakenly surveyed with a 10-minute recording period instead of 5 minutes. However, results from a quasi-Poisson regression model (a Poisson regression that assumes over-dispersion in the dependent variable) indicated that 10-minute plots had neither higher abundances (total counts per plots) nor higher species richness (total species per plot) than the 5-minute plots. Additionally, mean abundance and diversity values (total number of species) were either higher or quite similar in the 5-minute plots relative to the 10-minute plots, both by habitat type and taken together. Therefore, raw scores for both survey types (5- and 10-minute protocols) were used in all analyses. Relative abundance was calculated by summing the total number of individual birds and dividing by the survey effort. The number of birds and the survey effort were summed across both rounds. Species richness is a count of the total number of species observed over the two sampling periods.

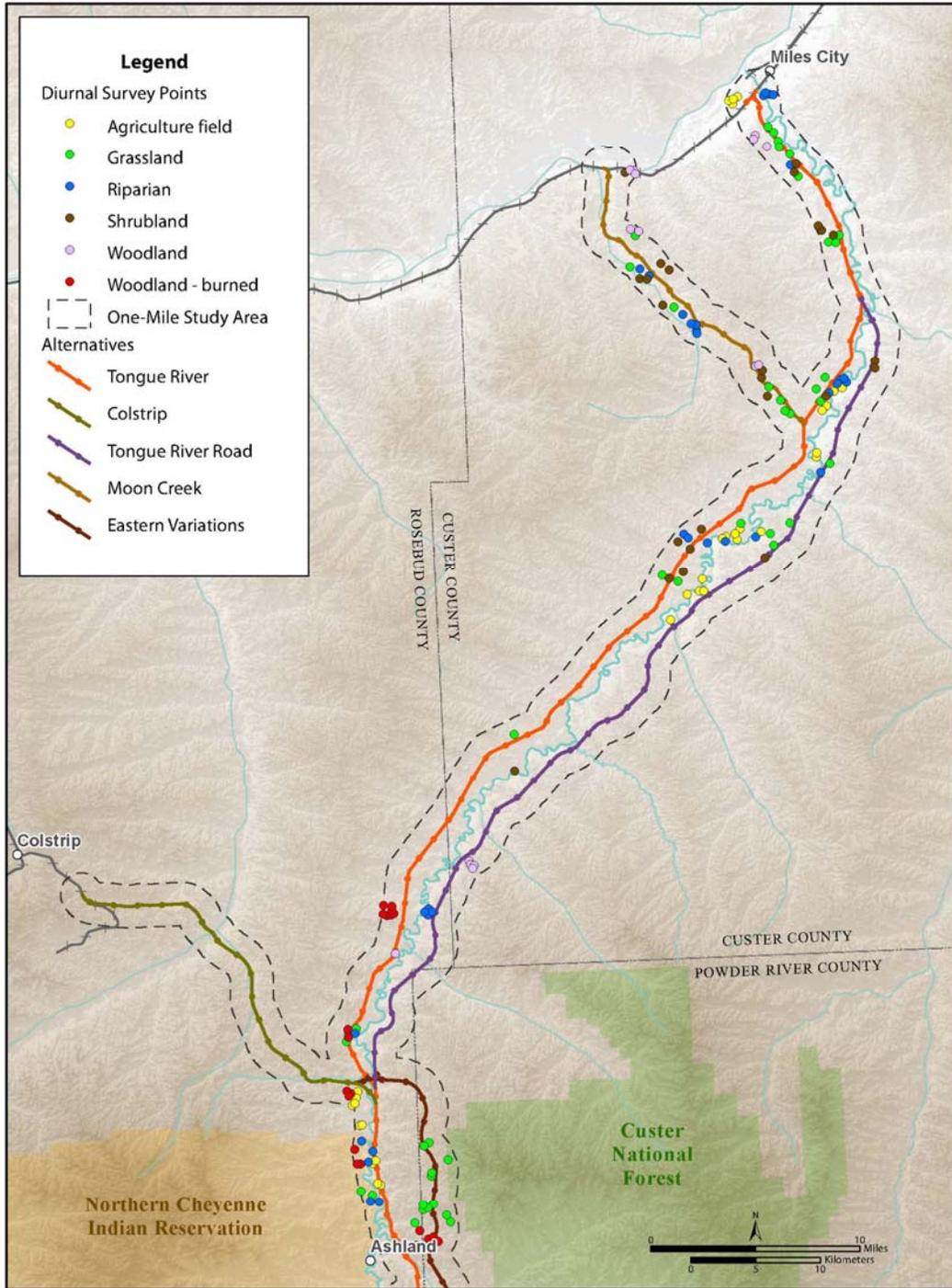


Figure J-3a. Breeding Birds Survey Points

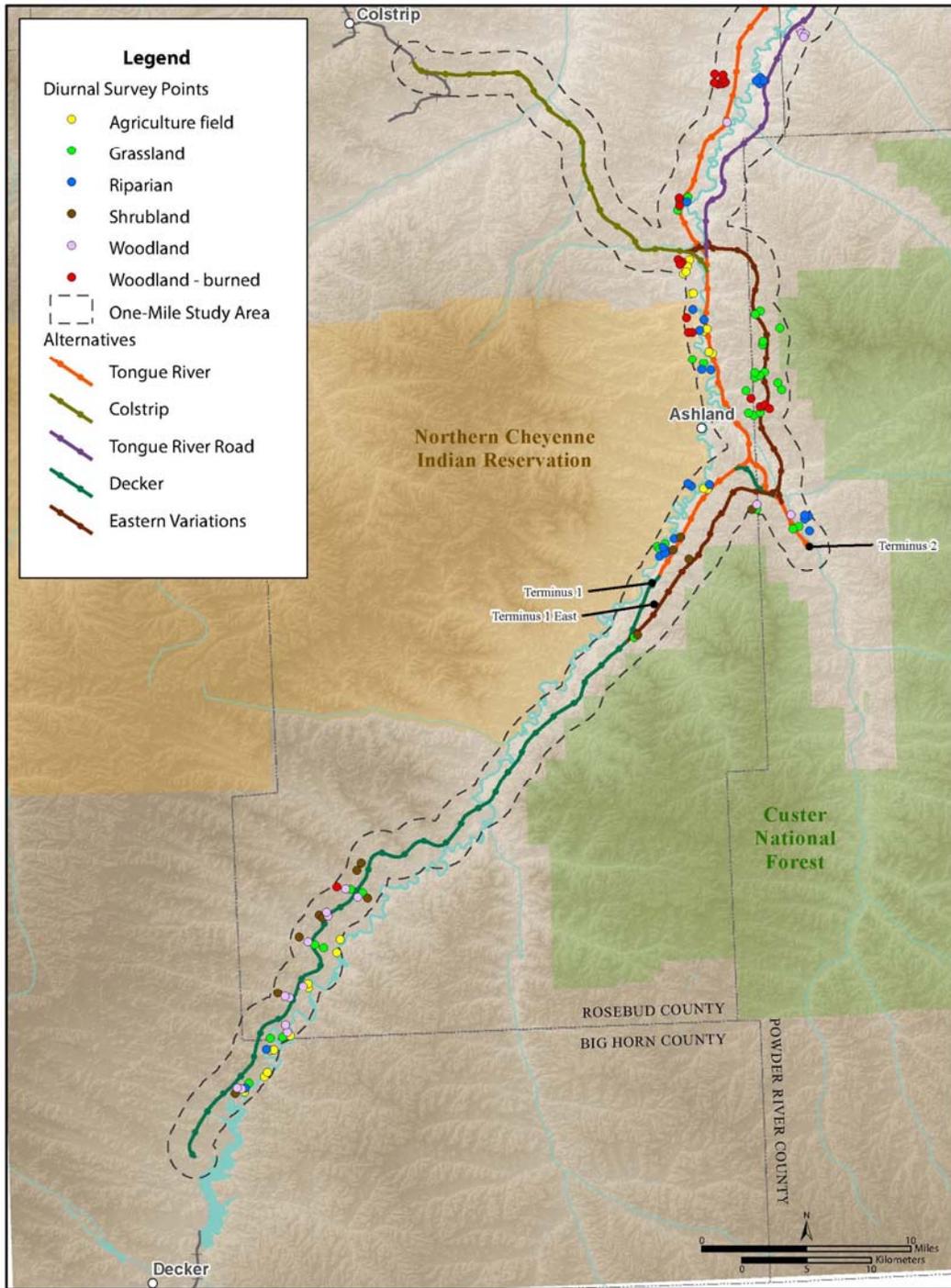


Figure J-3b. Breeding Birds Survey Points

Avian species are potentially sensitive to habitat edges created by roads, and species abundance and composition in roadside point-count surveys may be affected by this bias. Therefore, OEA modified the survey protocol so that approximately half of the survey points per habitat type were located 50 meters from an established road, and the second half were located 250 meters from an established road. To address agency concerns related to biases in roadside point-count surveys, a quasi-Poisson regression model was again implemented to test for differences between roadside and nonroadside plots for abundances and species richness. Results from the model indicated no difference between the two plot types, by habitat or in aggregate, for abundance and species richness, except for unburned woodland and agricultural field habitats. Unburned woodland habitat roadside plots had significantly higher species richness (10.8 vs. 8.7 mean species), and roadside agricultural field plots had significantly higher abundances (8.6 vs. 5.6 mean counts).

Table J-2 summarizes relative abundance and species richness by habitat type for each bird species documented in the study area during diurnal surveys.

**Table J-2. Relative Abundance and Species Richness of Avian Communities by Habitat Type in the Study Area**

Common Name	Species Name	Grassland	Agricultural Field	Shrubland	Woodland (combined)	Burned Woodland	Unburned Woodland	Riparian	Species Relative Abundance <sup>c</sup>
American crow	<i>Covus brachyrhynchos</i>	—	—	—	—	—	—	0.022	0.0043
American goldfinch	<i>Spinus tristis</i>	—	0.037	0.027	0.1122	0.100	0.121	0.086	0.0512
American kestrel	<i>Falco sparverius</i>	—	—	—	0.0306	—	0.052	0.022	0.0107
American redstart	<i>Setophaga ruticilla</i>	—	—	—	—	—	—	0.032	0.0064
American robin	<i>Turdus migratorius</i>	0.123	0.341	0.054	0.4082	0.550	0.310	0.527	0.2900
Baird's sparrow <sup>a</sup>	<i>Ammodramus bairdii</i>	0.008	—	0.014	—	—	—	—	0.0043
Bank swallow	<i>Riparia riparia</i>	—	0.037	—	—	—	—	—	0.0064
Barn swallow	<i>Hirundo rustica</i>	0.008	0.085	—	0.0102	—	0.017	0.043	0.0277
Black-billed magpie	<i>Pica hudsonia</i>	0.025	0.012	0.068	0.1633	0.025	0.259	0.108	0.0746
Black-capped chickadee	<i>Poecile atricapillus</i>	0.025	—	0.068	0.3367	0.300	0.362	0.097	0.1066
Black-headed grosbeak	<i>Pheucticus melanocephalus</i>	—	0.012	—	0.0102	0.025	—	0.097	0.0235
Blue-winged teal	<i>Anas discors</i>	—	—	—	—	—	—	0.065	0.0128
Bobolink <sup>a</sup>	<i>Dolichonyx oryzivorus</i>	0.008	0.085	—	—	—	—	—	0.0171
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	0.156	0.244	0.054	0.2347	0.325	0.172	0.892	0.3177
Brewer's sparrow <sup>a</sup>	<i>Spizella breweri</i>	0.123	0.012	0.378	0.0306	—	0.052	—	0.1002
Brown thrasher	<i>Toxostoma rufum</i>	—	0.012	—	0.0306	0.050	0.017	0.065	0.0213
Brown-headed cowbird	<i>Molothrus ater</i>	0.172	0.110	0.392	0.8061	0.775	0.828	0.075	0.3092
Bullock's oriole	<i>Icterus bullockii</i>	0.066	0.024	—	0.0918	0.050	0.121	0.344	0.1087
Canada goose	<i>Branta canadensis</i>	—	0.244	—	—	—	—	0.011	0.0448

Common Name	Species Name	Grassland	Agricultural Field	Shrubland	Woodland (combined)	Burned Woodland	Unburned Woodland	Riparian	Species Relative Abundance <sup>c</sup>
Cassin's finch <sup>a</sup>	<i>Carpodacus cassinii</i>	—	—	—	0.0306	—	0.052	—	0.0064
Cedar waxwing	<i>Bombycilla cedrorum</i>	—	—	—	0.1429	—	0.241	0.043	0.0384
Chipping sparrow	<i>Spizella passerina</i>	0.287	0.085	0.324	0.7143	0.900	0.586	0.140	0.3177
Clay-colored Sparrow	<i>Spizella pallida</i>	—	—	—	0.0102	—	0.017	—	0.0021
Cliff swallow	<i>Petrochelidon pyrrhonota</i>	0.877	0.927	0.027	—	—	—	0.194	0.4328
Common grackle	<i>Quiscalus quiscula</i>	0.016	0.463	—	0.0204	0.025	0.017	0.452	0.1791
Common nighthawk	<i>Chordeiles minor</i>	0.090	0.012	0.135	0.1429	0.275	0.052	—	0.0768
Common raven	<i>Corvus corax</i>	—	—	—	0.0204	0.025	0.017	—	0.0043
Common yellowthroat	<i>Geothlypis trichas</i>	—	0.024	—	—	—	—	0.032	0.0107
Cooper's hawk	<i>Accipiter cooperii</i>	—	—	—	—	—	—	0.011	0.0021
Dark-eyed junco	<i>Junco hyemalis</i>	0.025	—	0.027	0.1327	0.100	0.155	0.032	0.0448
Downy woodpecker	<i>Picoides pubescens</i>	—	0.012	0.014	0.0204	0.025	0.017	0.032	0.0149
Eastern kingbird	<i>Tyrannus tyrannus</i>	0.041	0.085	0.027	0.0204	0.050	—	0.323	0.0981
Eurasian Collared-Dove	<i>Streptopelia decaocto</i>	—	—	—	—	—	—	0.022	0.0043
European starling	<i>Sturnus vulgaris</i>	0.074	1.073	1.149	—	—	—	0.226	0.4328
Field sparrow	<i>Spizella pusilla</i>	0.180	0.098	0.351	0.2245	0.225	0.224	0.065	0.1791
Grasshopper sparrow	<i>mmodramus savannarum</i>	0.295	0.073	0.284	0.0204	0.025	0.017	0.011	0.1407
Gray catbird	<i>Dumetella carolinensis</i>	—	0.012	—	—	—	—	0.097	0.0213
Great blue heron <sup>a</sup>	<i>Ardea herodias</i>	—	—	—	—	—	—	0.043	0.0085
Hairy woodpecker	<i>Picoides villosus</i>	—	0.012	—	0.0204	0.050	—	0.043	0.0149

Common Name	Species Name	Grassland	Agricultural Field	Shrubland	Woodland (combined)	Burned Woodland	Unburned Woodland	Riparian	Species Relative Abundance <sup>c</sup>
Horned lark	<i>Eremophila alpestris</i>	—	0.012	—	—	—	—	—	0.0021
House finch	<i>Carpodacus mexicanus</i>	—	0.012	—	—	—	—	—	0.0021
House wren	<i>Troglodytes aedon</i>	0.074	0.146	0.068	0.5204	0.675	0.414	1.172	0.3966
Indigo bunting	<i>Passerina cyanea</i>	—	—	—	0.0204	—	0.034	—	0.0043
Killdeer	<i>Charadrius vociferus</i>	0.025	0.134	—	0.0306	0.075	—	0.161	0.0682
Lark bunting	<i>Calamospiza melanocorys</i>	1.057	0.220	1.514	0.1122	0.075	0.138	0.194	0.6141
Lark sparrow	<i>Chondestes grammacus</i>	0.648	0.195	0.770	0.8265	1.375	0.448	0.140	0.5245
Lazuli bunting	<i>Passerina amoena</i>	—	—	0.014	0.0204	—	0.034	0.022	0.0107
Least flycatcher	<i>Empidonax minimus</i>	—	0.012	—	0.0306	—	0.052	0.118	0.0320
Lincoln's sparrow	<i>Melospiza lincolni</i>	0.016	—	—	—	—	—	0.011	0.0064
Loggerhead shrike <sup>a</sup>	<i>Lanius ludovicianus</i>	0.008	—	—	0.0102	—	0.017	0.011	0.0064
MacGillivray's warbler	<i>Geothlypis tolmiei</i>	—	—	—	—	—	—	0.022	0.0043
Mallard	<i>Anas platyrhynchos</i>	0.008	0.012	—	—	—	—	0.086	0.0213
Mountain bluebird	<i>Sialia currucoides</i>	0.066	0.012	0.081	0.1122	0.175	0.069	0.043	0.0640
Mourning dove	<i>Zenaidura macroura</i>	0.131	0.598	0.311	0.3980	0.200	0.534	0.753	0.4200
Northern shrike	<i>Lanius excubitor</i>	—	—	—	—	—	—	0.022	0.0043
Northern flicker	<i>Colaptes auratus</i>	0.074	0.146	0.054	0.1735	0.275	0.103	0.441	0.1770
Olive-sided flycatcher	<i>Contopus cooperi</i>	—	—	—	0.0612	—	0.103	—	0.0128

Common Name	Species Name	Grassland	Agricultural Field	Shrubland	Woodland (combined)	Burned Woodland	Unburned Woodland	Riparian	Species Relative Abundance <sup>c</sup>
Orange-crowned warbler	<i>Oreothlypis celata</i>	—	—	—	—	—	—	0.022	0.0043
Orchard oriole	<i>Icterus spurius</i>	—	—	—	0.0714	0.150	0.017	—	0.0149
Osprey	<i>Pandion haliaetus</i>	—	—	0.027	—	—	—	—	0.0043
Pine siskin	<i>Spinus pinus</i>	—	—	—	0.0102	—	0.017	0.011	0.0043
Red crossbill	<i>Loxia curvirostra</i>	0.098	—	—	0.1020	0.250	—	—	0.0469
Red-breasted nuthatch	<i>Sitta canadensis</i>	—	—	0.014	0.0612	—	0.103	0.022	0.0192
Red-headed woodpecker <sup>a</sup>	<i>Melanerpes erythrocephalus</i>	—	—	—	—	—	—	0.011	0.0021
Red-tailed hawk	<i>Buteo jamaicensis</i>	0.016	—	—	—	—	—	0.011	0.0064
Red-winged blackbird	<i>Agelaius phoeniceus</i>	0.189	1.976	0.027	0.0102	—	0.017	1.237	0.6461
Ring-billed gull	<i>Larus delawarensis</i>	—	0.012	—	—	—	—	—	0.0021
Ring-necked pheasant	<i>Phasianus colchicus</i>	0.008	0.085	0.041	0.0102	—	0.017	0.086	0.0426
Rock wren	<i>Salpinctes oboletus</i>	0.049	—	0.068	0.1122	0.175	0.069	0.011	0.0490
Rusty blackbird	<i>Euphagus carolinus</i>	—	—	—	0.0306	0.075	—	0.086	0.0235
Sandhill crane	<i>Grus canadensis</i>	—	0.024	—	—	—	—	—	0.0043
Savannah sparrow	<i>Passerculus sandwichensis</i>	0.016	0.012	0.041	0.0102	—	0.017	0.118	0.0384
Say's phoebe	<i>Sayornis saya</i>	0.049	0.024	0.081	0.0306	0.025	0.034	0.140	0.0640
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>	0.008	—	—	—	—	—	—	0.0021
Song sparrow	<i>Melospiza melodia</i>	0.016	0.122	0.027	0.0102	—	0.017	0.043	0.0405
Sora	<i>Porzana carolina</i>	—	0.012	—	—	—	—	—	0.0021
Spotted towhee	<i>Pipilo maculatus</i>	0.082	0.098	0.284	0.6531	0.750	0.586	0.312	0.2814

Common Name	Species Name	Grassland	Agricultural Field	Shrubland	Woodland (combined)	Burned Woodland	Unburned Woodland	Riparian	Species Relative Abundance <sup>c</sup>
Swainson's thrush	<i>Catharus ustulatus</i>	—	—	—	—	—	—	0.043	0.0085
Townsend's solitaire	<i>Myadestes townsendi</i>	—	—	—	0.0102	—	0.017	—	0.0021
Tree swallow	<i>Tachycineta bicolor</i>	0.090	0.268	0.014	0.0612	—	0.103	0.355	0.1557
Turkey vulture	<i>Cathartes columbianus</i>	0.016	—	—	—	—	—	—	0.0043
Upland sandpiper	<i>Bartramia longicauda</i>	0.041	—	0.041	0.0204	0.050	—	—	0.0213
Vesper sparrow	<i>Pooecetes gramineus</i>	0.508	0.268	0.351	0.2245	0.275	0.190	0.086	0.2985
Violet-green swallow	<i>Tachycineta thalassina</i>	—	—	—	0.0204	0.050	—	0.043	0.0128
Warbling vireo	<i>Vireo gilvus</i>	—	—	—	—	—	—	0.032	0.0064
Western kingbird	<i>Tyrannus verticalis</i>	0.303	0.439	0.162	0.6020	0.725	0.517	0.559	0.4179
Western meadowlark	<i>Sturnella neglecta</i>	2.434	1.585	2.622	0.9694	0.825	1.069	0.978	1.7207
Western tanager	<i>Piranga ludoviciana</i>	—	—	—	—	—	—	0.011	0.0021
Western wood-pewee	<i>Contopus sordidulus</i>	0.074	0.037	0.068	0.3163	0.375	0.276	0.140	0.1301
White-breasted nuthatch	<i>Sitta carolinensis</i>	—	—	—	0.0204	—	0.034	0.022	0.0085
Wild turkey	<i>Meleagris gallopavo</i>	—	—	—	—	—	—	0.011	0.0021
Willow flycatcher	<i>Empidonax traillii</i>	—	0.012	—	0.0204	—	0.034	0.054	0.0171
Wilson's warbler	<i>Cardellina pusilla</i>	—	—	—	—	—	—	0.022	0.0043
Wood duck	<i>Aix sponsa</i>	—	—	—	0.0102	—	0.017	0.022	0.0064
Yellow warbler	<i>Setophaga petechia</i>	0.180	0.476	0.041	0.4694	0.375	0.534	2.065	0.6439

Common Name	Species Name	Grassland	Agricultural Field	Shrubland	Woodland (combined)	Burned Woodland	Unburned Woodland	Riparian	Species Relative Abundance <sup>c</sup>
Yellow-breasted chat	<i>Icteria virens</i>	—	0.012	0.014	—	—	—	0.237	0.0512
Yellow-rumped warbler	<i>Setophaga coronata</i>	0.008	—	—	0.1122	0.125	0.103	0.118	0.0490
Habitat Relative Abundance <sup>c</sup>		8.8934	11.0976	10.1216	10.0714	10.9750	9.4483	14.3441	10.7996
Species Richness <sup>b</sup>		48	53	41	62	40	54	75	97
Species of Concern (abundance) <sup>c</sup>		0.1475	0.0976	0.3919	0.0714	0	0.1207	0.0645	0.1450
Species of Concern (richness) <sup>b</sup>		4	2	2	3	0	3	3	7

Notes:

<sup>a</sup> Listed as a BLM sensitive species or Montana FWP species of concern.

<sup>b</sup> Richness = total number of species recorded during point-count surveys.

<sup>c</sup> Abundance = total number of birds divided by the number of times surveyed. Number of times surveyed varied for each build alternative because of the different build alternative lengths and land access restrictions.

### J.8.1.2 Nocturnal Point Counts

OEA conducted two rounds of nocturnal playback surveys in 2013 (June 8 through 13 and July 1 through 11). To reduce the nocturnal survey effort, nocturnal playback surveys for nocturnal breeding birds were conducted simultaneously with nocturnal amphibian call surveys. Playback surveys are used to elicit a response for hard-to-detect species. The survey entails playing a vocalization (in this case, eastern screech-owl) in a standard format and documenting species that the observer hears or sees responding to the playback vocalization. Survey points (81 total) (Figure J-4) were distributed as evenly as possible throughout the study area and included ponds (temporal and permanent), rivers, creeks, and stock tanks. Four points surveyed in the first round were replaced in the second round because the original points were inaccessible after flooding. The replacement points chosen were of the same habitat type and in the same general area. Surveys began no earlier than sunset and lasted until 1 a.m. Surveys were conducted when favorable listening conditions and mild weather prevailed (relatively calm winds and no to light precipitation). Each playback survey was initiated immediately following the completion of the amphibian call survey. Eastern screech-owl vocalizations were played at high volume using a handheld game caller. Playback protocol was as follows: 1-minute playback, 1-minute wait, 1-minute playback, 3-minute recording period. All species that responded by vocalization or mobbing behavior were recorded during the 3-minute recording period. Species noted outside the 3-minute recording period were recorded as incidental. Relative abundance was calculated by summing the total number of individual birds and dividing by the survey effort. Species richness was calculated by summing the total number of species in each habitat type and dividing by the survey effort.

Table J-3 summarizes the relative abundance of each bird species documented in the study area during nocturnal surveys.

**Table J-3. Relative Abundance of Avian Species in the Study Area**

Common Name	Species Name	Species Relative Abundance
American bittern <sup>a</sup>	<i>Botaurus lentiginosus</i>	0.006
American crow	<i>Corvus brachyrhynchos</i>	0.013
American robin	<i>Turdus migratorius</i>	0.058
Black-billed cuckoo <sup>a</sup>	<i>Coccyzus erythrophthalmus</i>	0.006
Black-capped chickadee	<i>Poecile atricapillus</i>	0.006
Black-headed grosbeak	<i>Pheucticus melanocephalus</i>	0.006
Blue-winged teal	<i>Anas discors</i>	0.051
Brewer's sparrow <sup>a</sup>	<i>Spizella breweri</i>	0.038
Brown thrasher	<i>Toxostoma rufum</i>	0.006
Canada goose	<i>Branta canadensis</i>	0.013
Chipping sparrow	<i>Spizella passerina</i>	0.032
Common grackle	<i>Quiscalus quiscula</i>	0.013
Common nighthawk	<i>Chordeiles minor</i>	0.686
Common Poorwill	<i>Phalaenoptilus nuttallii</i>	0.115

<b>Common Name</b>	<b>Species Name</b>	<b>Species Relative Abundance</b>
Downy woodpecker	<i>Picoides pubescens</i>	0.006
Eared grebe	<i>Podiceps nigricollis</i>	0.006
Eastern kingbird	<i>Tyrannus tyrannus</i>	0.032
Eastern screech owl	<i>Megascops asio</i>	0.218
Field sparrow	<i>Spizella pusilla</i>	0.032
Grasshopper sparrow	<i>Ammodramus savannarum</i>	0.032
Great blue heron <sup>a</sup>	<i>Ardea herodias</i>	0.013
Great horned owl	<i>Bubo virginianus</i>	0.026
Horned lark	<i>Eremophila alpestris</i>	0.006
House wren	<i>Troglodytes aedon</i>	0.013
Killdeer	<i>Charadrius vociferus</i>	0.135
Lark bunting	<i>Calamospiza melanocorys</i>	0.006
Lark sparrow	<i>Chondestes grammacus</i>	0.051
Mourning dove	<i>Zenaida macroura</i>	0.077
Northern flicker	<i>Colaptes auratus</i>	0.013
Red-tailed hawk	<i>Buteo jamaicensis</i>	0.006
Red-winged blackbird	<i>Agelaius phoeniceus</i>	0.058
Ring-necked pheasant	<i>Phasianus colchicus</i>	0.013
Ruddy duck	<i>Oxyura jamaicensis</i>	0.013
Say's phoebe	<i>Sayornis saya</i>	0.019
Song sparrow	<i>Melospiza melodia</i>	0.013
Sora	<i>Porzana carolina</i>	0.006
Spotted towhee	<i>Pipilo maculatus</i>	0.051
Vesper sparrow	<i>Pooecetes gramineus</i>	0.109
Western kingbird	<i>Tyrannus verticalis</i>	0.019
Western meadowlark	<i>Sturnella neglecta</i>	0.250
Western tanager	<i>Piranga ludoviciana</i>	0.006
Western wood-pewee	<i>Contopus sordidulus</i>	0.019
Yellow warbler	<i>Setophaga petechia</i>	0.103
Yellow-billed cuckoo <sup>a,b</sup>	<i>Coccyzus americanus</i>	0.019
Yellow-breasted chat	<i>Icteria virens</i>	0.449
<b>Relative Abundance</b>		<b>2.872</b>
<b>Species Richness</b>		<b>45</b>
<b>Species of Concern (abundance)</b>		<b>0.083</b>
<b>Species of Concern (richness)</b>		<b>5</b>

Notes:

<sup>a</sup> Listed as a BLM or Montana FWP species of concern.

<sup>b</sup> Listed as a USFWS candidate species.

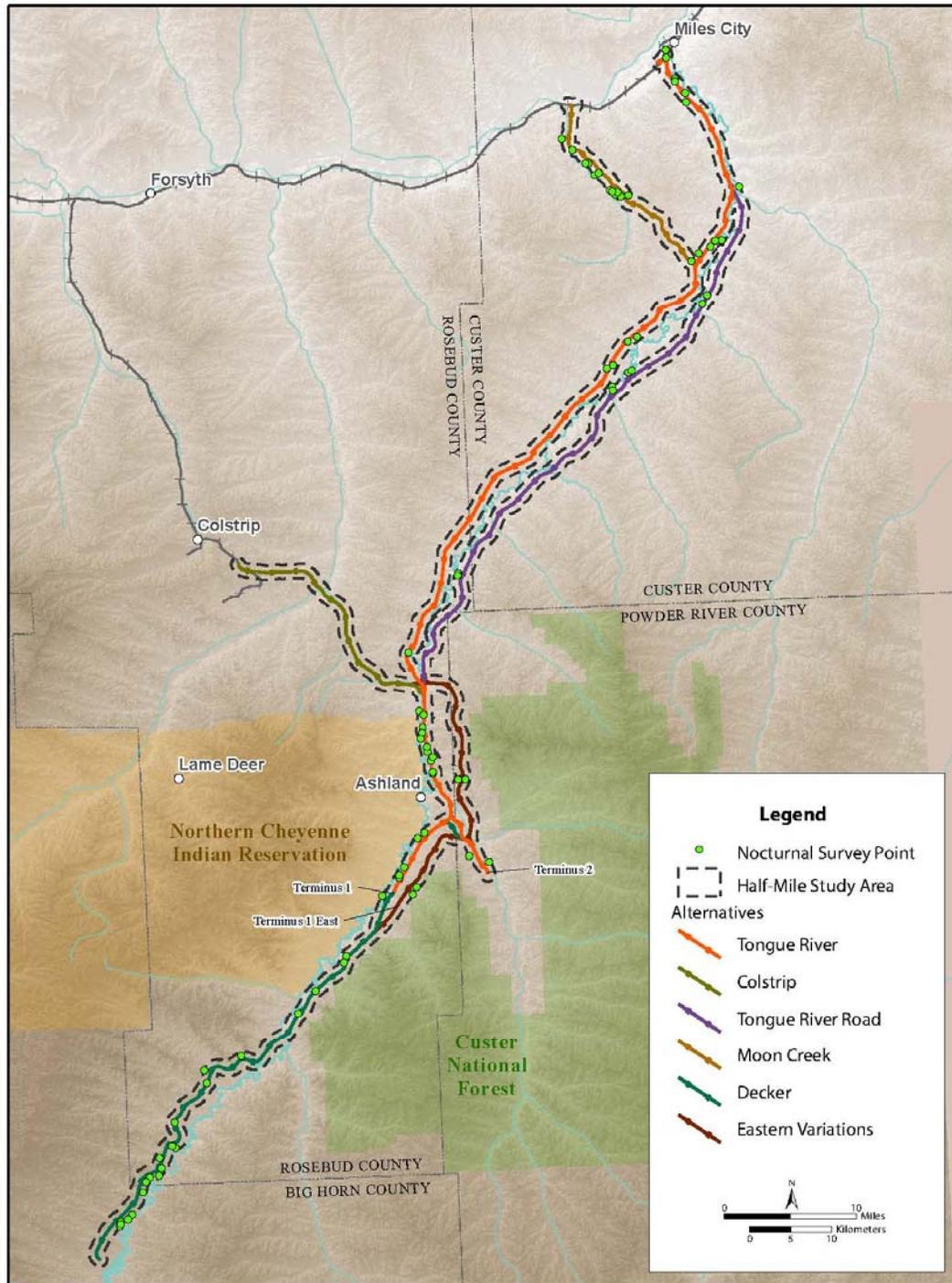


Figure J-4. Nocturnal Survey Points

## J.9 Reptiles

OEA recorded all incidental observations of reptile species in appropriate upland habitats, with special attention given to bare or rocky areas where reptiles can be found basking in the sun, during all ground surveys in 2013. Specific searches were conducted during the 2 hours prior to nocturnal call surveys. These searches occurred between June 8 and 13 and again between July 1 and 11. All sightings were recorded, including notes on species, number of individuals, location, habitat, and activity.

OEA documented seven species of reptiles in the study area during 2013 ground surveys (Figure J-5). Five snake species were recorded in the study area. Ten gopher snakes (*Pituophis catenifer*) were observed, primarily in grasslands along a road; five eastern racers (*Coluber constrictor*) were observed along a road or in grassland habitats; one plains garter snake (*Thamnophis radix*) was observed in sagebrush alongside a road; two prairie rattlesnakes (*Crotalus viridis*) were documented in grassland habitats; and one rubber boa (*Charina bottae*) was recorded on a road in grassland. One turtle species was documented in the study area and 161 painted turtles (*Chrysemys picta*) were seen in reservoirs or ponds in the study area. One lizard species, the greater short-horned lizard (*Phrynosoma hernandesi*), was observed running in sagebrush habitat.

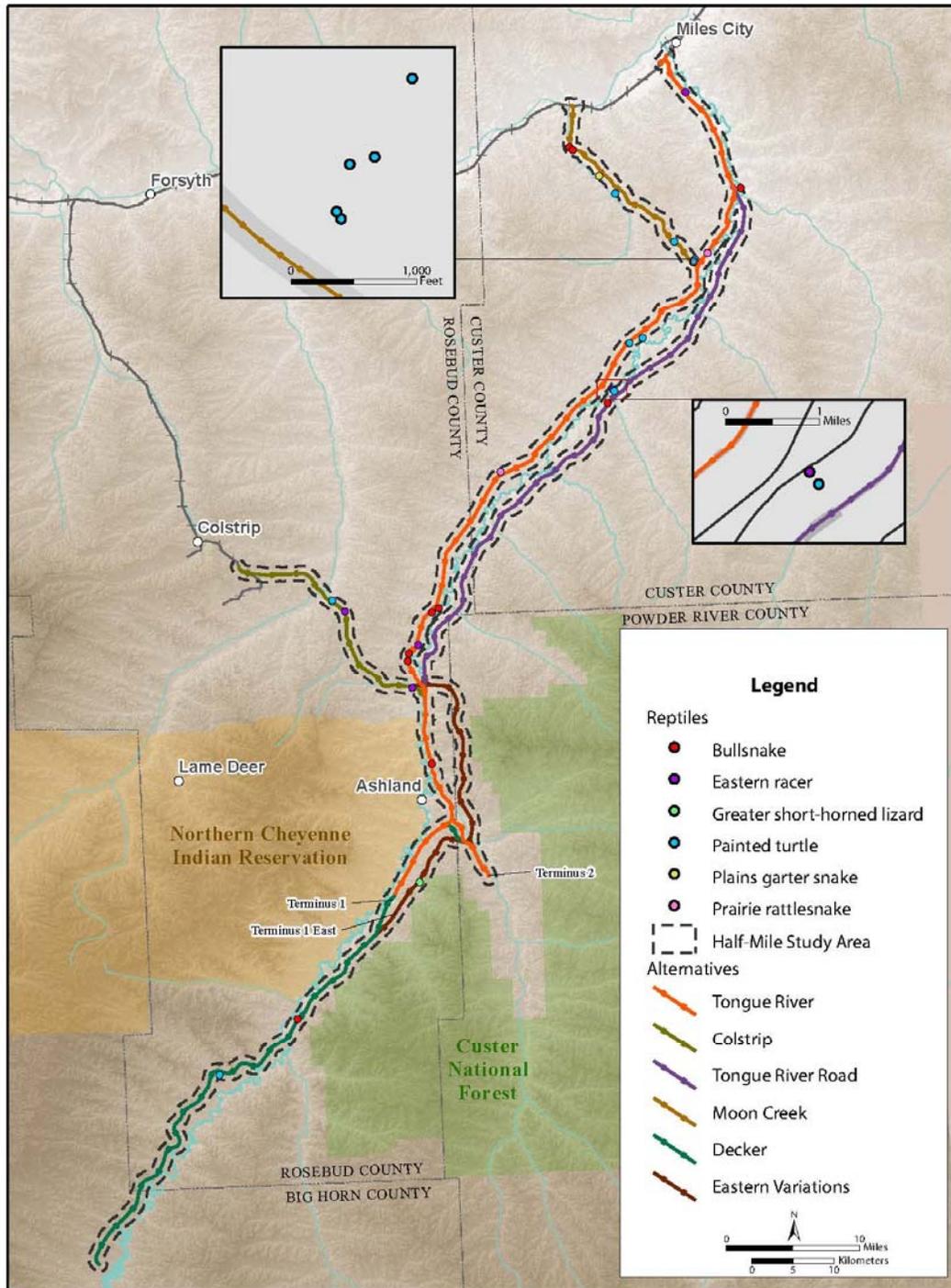


Figure J-5. 2013 Incidental Reptile Observations

## J.10 Amphibians

OEA recorded all incidental observations of amphibians throughout ground surveys in 2013. To assess the occurrence and relative abundance of frogs and toads throughout the study area, two nocturnal call surveys were conducted from June 8 through 13 and July 1 through 11. A call survey records those species heard calling for a set time period and at specific locations. Survey points (81 total) were distributed as evenly as possible throughout the study area and included ponds (temporal and permanent), rivers, creeks, and stock tanks. Four points surveyed in the first round were replaced in the second round because the original points were inaccessible after flooding. The replacement points chosen were of the same habitat type and in the same general area. The surveys started no earlier than sunset and lasted until 1 a.m. Surveys were conducted when favorable listening conditions and mild weather prevailed (relatively calm winds and no to light precipitation). Each call survey was initiated after a 2-minute waiting period and followed by a 10-minute listening/recording period. Species, number, habitat, and survey conditions were recorded for all observations.

OEA recorded six amphibian species in the study area in 2013 (Figure J-6). Three species of frog were documented: boreal chorus frog (*Pseudacris maculata*), American bullfrog (*Lithobates catesbeianus*), and northern leopard frog (*Lithobates pipiens*). Three species of toad were observed: great plains toad (*Anaxyrus cognatus*), plains spadefoot toad (*Spea bombifrons*), and Woodhouse's toad (*Anaxyrus woodhousii*). Boreal chorus frog had the highest relative abundance (3.86) and was commonly seen throughout the study area. OEA incidentally recorded 123 boreal chorus frogs during ground surveys; it was seen primarily in small pools of water or in small creeks in grassland habitats. However, three were observed in a small wet depression in woodland habitat. American bullfrog had the lowest relative abundance (0.04) and was usually seen in large ponds along the Tongue River and Moon Creek drainage just south of Miles City. However, two bullfrogs were documented in a small ephemeral creek just south of Birney. Northern leopard frog was not as abundant (0.44) and was generally found in temporary water sources, primarily in stock ponds. Only 19 northern leopard frogs were documented incidentally in 2013. Great plains toad was not common (0.13), and only five great plains toads were observed incidentally. Great plains toads were found primarily in seasonal ponds or small creeks. Plains spadefoots were also uncommon (0.10), and only one was documented during ground surveys. Plains spadefoots were seen in various water sources; however, all were surrounded by sagebrush or had sagebrush cover nearby. Woodhouse's toad was the second most-abundant (0.76) amphibian species; 34 Woodhouse's toads were seen in the study area, primarily in grassland, riparian, sage-grassland, and roadside habitats.

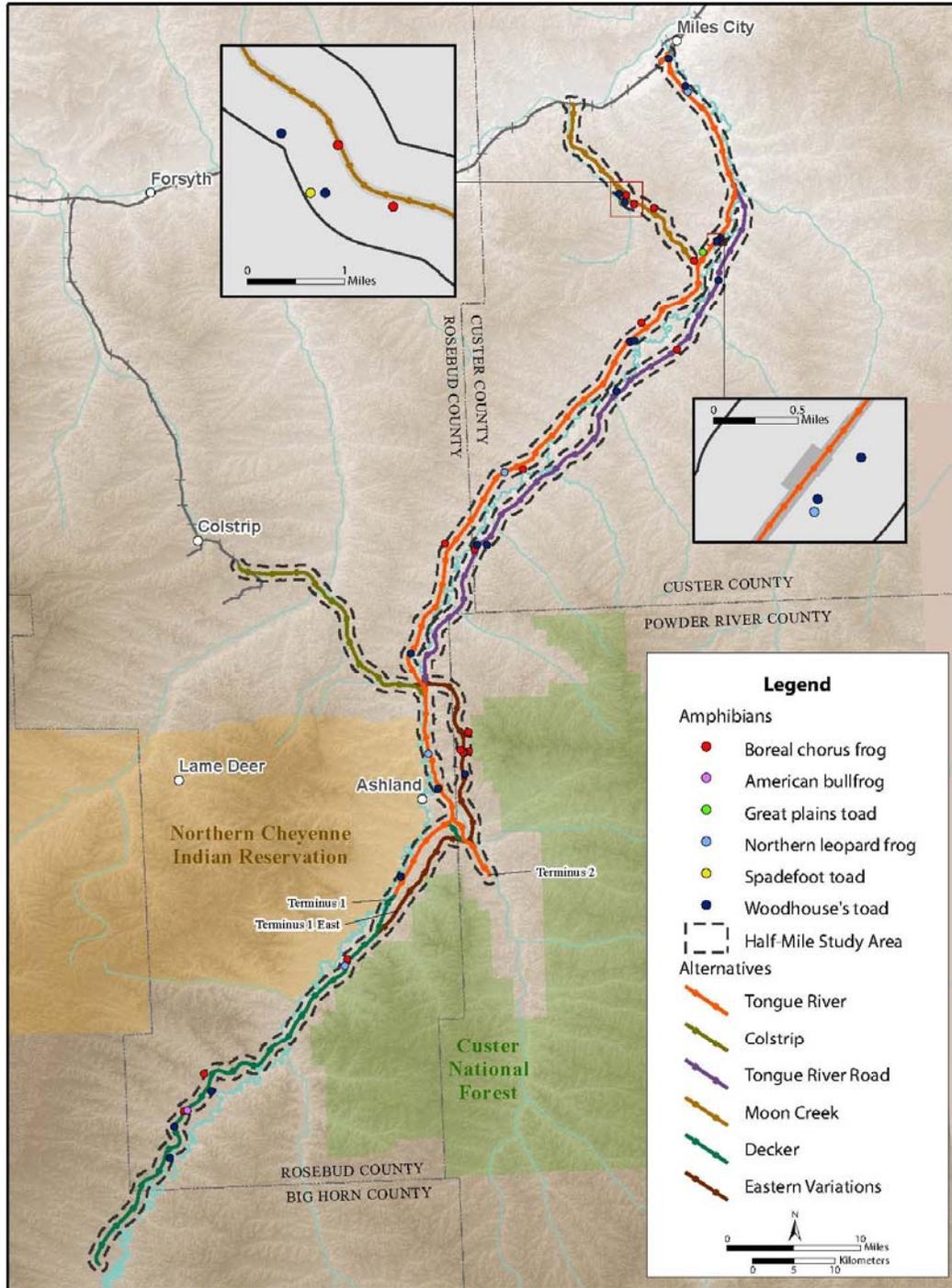


Figure J-6. Incidental Amphibian Observations

## J.11 Species Catalogue

The documented status of wildlife species in the region and study area is summarized in Table J-4.

**Table J-4. Species Catalogue**

<i>COMMON NAME</i>	<i>SCIENTIFIC NAME</i>	<i>ASSOCIATED HABITAT<sup>a</sup></i>	<i>HISTORICAL OCCURRENCE<sup>b</sup></i>	<i>DOCUMENTED OCCURRENCE<sup>c</sup></i>	<i>MONTANA STATE STATUS<sup>d</sup></i>	<i>BLM – MCFO<sup>e</sup></i>	<i>USFWS<sup>f</sup></i>
<b>MAMMALS</b>							
<i>Big Game: Large Ungulates – 2.0-mile wildlife study area</i>							
Bighorn sheep	<i>Ovis canadensis</i>	cliffs/mountains	x		S4	—	—
Elk	<i>Cervus canadensis</i>	coniferous forests	x	x	S5	—	—
Mule deer	<i>Odocoileus hemionus</i>	grasslands/forests	x	x	S5	—	—
Antelope	<i>Antilocapra americana</i>	sagebrush/grasslands	x	x	S5	—	—
White-tailed deer	<i>Odocoileus virginianus</i>	riparian/shrublands	x	x	S5	—	—
<i>Big Game: Large Predators – 2.0-mile wildlife study area</i>							
Black bear	<i>Ursus americanus</i>	forest/riparian	x		S5	—	—
Gray wolf	<i>Canis lupus</i>	any (prey dependent)	x		S4	—	—
Mountain lion	<i>Puma concolor</i>	mountains/foothills	x	x	S4	—	—
<i>Furbearers – 1.0-mile wildlife study area</i>							
Beaver	<i>Castor canadensis</i>	riparian	x	x	S5	—	—
Bobcat	<i>Lynx rufus</i>	grassland/shrubland/ rocky areas	x	x	S5	—	—
Muskrat	<i>Ondatra zibethicus</i>	riparian	x	x	S5	—	—
Swift fox	<i>Vulpes velox</i>	prairies/arid plains	x	x	S3	Sensitive	—
American mink	<i>Mustela vison</i>	riparian	x		S5	—	—
<i>Nongame Mammal: Medium Mammals – 1.0-mile wildlife study area</i>							
Badger	<i>Taxidea taxus</i>	grassland/shrubland/ desert	x	x	S4	—	—
Black-footed ferret	<i>Mustela nigripes</i>	grassland/steppe/shrub steppe (associated with prairie dogs)	x		S1	Special Status	LE
Cottontail rabbit spp.	<i>Sylvilagus</i> spp.			x	S4	—	—

<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>	<b>ASSOCIATED HABITAT<sup>a</sup></b>	<b>HISTORICAL OCCURRENCE<sup>b</sup></b>	<b>DOCUMENTED OCCURRENCE<sup>c</sup></b>	<b>MONTANA STATE STATUS<sup>d</sup></b>	<b>BLM – MCFO<sup>e</sup></b>	<b>USFWS<sup>f</sup></b>
Desert cottontail	<i>Sylvilagus audubonii</i>	grassland/sagebrush/badlands	x		S4	—	—
Mountain cottontail	<i>Sylvilagus nuttallii</i>	shrubland/riparian	x		S4	—	—
Coyote	<i>Canis latrans</i>	any	x	x	S5	—	—
Porcupine	<i>Erethizon dorsatum</i>	riparian/forests/shrubs	x	x	S4	—	—
Raccoon	<i>Procyon lotor</i>	riparian/forest	x	x	S5	—	—
Red fox	<i>Vulpes vulpes</i>	any	x	x	S5	—	—
Striped skunk	<i>Mephitis mephitis</i>	any	x	x	S5	—	—
White-tailed jack rabbit	<i>Lepus townsendii</i>	grassland/sagebrush	x	x	S4	—	—
Yellow-bellied marmot	<i>Marmota flaviventris</i>	rocky slopes and meadows	x	x	S4	—	—
<i>Nongame Mammal: Small Mammals – 1.0-mile wildlife study area</i>							
Big brown bat	<i>Eptesicus fuscus</i>	caves/human disturbance	x	x	S4	—	—
Black-tailed prairie dog	<i>Cynomys ludovicianus</i>	grassland/shrubland	x	x	S3	Sensitive	—
Bushy-tailed woodrat	<i>Neotoma cinerea</i>	rocky areas/badlands	x	x	S5	—	—
Deer mouse	<i>Peromyscus maniculatus</i>	any	x		S5	—	—
Eastern gray squirrel	<i>Sciurus carolinensis</i>	forest	x		SNA	—	—
Fringed myotis	<i>Myotis thysanodes</i>	desert shrubland/sagebrush-grassland/woodland		x	S3	Sensitive	—
Hoary bat	<i>Lasiurus cinereus</i>	forest	x	x	S3	—	—
House mouse	<i>Mus musculus</i>	human disturbance/riparian/meadows	x		SNA	—	—
Least chipmunk	<i>Tamias minimus</i>	forest/sagebrush/alpine	x	x	S4	—	—
Least weasel	<i>Mustela nivalis</i>	meadows/brush/forest	x		S4	—	—
Little brown myotis	<i>Myotis lucifugus</i>	caves/human disturbance	x	x	S4	—	—
Long-eared myotis	<i>Myotis evotis</i>	forests/caves/human disturbances	x	x	S4	—	—
Long-legged myotis	<i>Myotis volans</i>	forests/riparian/caves		x	S4	—	—
Masked shrew	<i>Sorex cinereus</i>	coniferous forests	x		S5	—	—
Meadow vole	<i>Microtus pennsylvanicus</i>	wet grassland	x		S5	—	—

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Northern grasshopper mouse	<i>Onychomys leucogaster</i>	grassland/sagebrush	x		S4	—	—
Northern pocket gopher	<i>Thomomys talpoides</i>	any	x	x	S5	—	—
Olive-backed pocket mouse	<i>Perognathus fasciatus</i>	grassland	x		S4	—	—
Ord's kangaroo rat	<i>Dipodomys ordii</i>	sagebrush/grasslands	x	x	S4	—	—
Prairie vole	<i>Microtus ochrogaster</i>	grassland/sagebrush	x		S4	—	—
Red bat (eastern/western)	<i>Lasiurus borealis/blossevillii</i>	forests/riparian		x	SU	—	—
Red squirrel	<i>Tamiasciurus hudsonicus</i>	forest	x	x	S5	—	—
Short-tailed weasel	<i>Mustela erminea</i>	forest		x	S5	—	—
Silver-haired bat	<i>Lasionycteris noctivagans</i>	forest	x	x	S4	—	—
Thirteen-lined ground squirrel	<i>Ictidomys tridecemlineatus</i>	grassland/shrubland	x		S4	—	—
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	caves/forests	x	x	S2	Sensitive	—
Western harvest mouse	<i>Reithrodontomys megalotis</i>	sagebrush/grasslands	x		S4	—	—
Western small-footed myotis	<i>Myotis ciliolabrum</i>	forests/caves/human disturbances	x	x	S4	—	—
<b>BIRDS</b>							
<i>Raptors – 2.0-mile wildlife study area</i>							
American kestrel	<i>Falco sparverius</i>	all	x	x	S5	—	—
Bald eagle	<i>Haliaeetus leucocephalus</i>	riparian/lakes/reservoirs	x	x	S4	Sensitive	BCC
Barn owl	<i>Tyto alba</i>	grassland/agriculture	x	x	S4	—	—
Broad-winged hawk	<i>Buteo platypterus</i>	deciduous/mixed deciduous forests	x		SNA	—	—
Burrowing owl	<i>Athene cunicularia</i>	grassland/prairie dog colonies	x	x	S3B	Sensitive	BCC
Cooper's hawk	<i>Accipiter cooperii</i>	dense forest	x	x	S4B	—	—
Eastern screech-owl	<i>Megascops asio</i>	cottonwood bottoms	x	x	S3, S4	—	—

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Ferruginous hawk	<i>Buteo regalis</i>	grassland/sagebrush	x	x	S3B	Sensitive	BCC
Golden eagle	<i>Aquila chrysaetos</i>	prairies/cliffs/open woodlands	x	x	S3	Sensitive	BCC
Great horned owl	<i>Bubo virginianus</i>	any wooded areas	x	x	S5	—	—
Long-eared owl	<i>Asio otus</i>	Shrubland/wooded thickets		x	S5	—	—
Merlin	<i>Falco columbarius</i>	open woodlands near prairie habitats	x	x	S4	—	—
Northern harrier	<i>Circus cyaneus</i>	grasslands	x	x	S4B	—	—
Northern saw-whet owl	<i>Aegolius acadicus</i>	coniferous forests/riparian wooded areas	x		S4	—	—
Osprey	<i>Pandion haliaetus</i>	Riparian/lakes/reservoirs	x	x	S5B	—	—
Peregrine falcon	<i>Falco peregrinus</i>	cliffs	x		S3	Sensitive	BCC
Prairie falcon	<i>Falco mexicanus</i>	cliffs/grasslands	x	x	S4	—	BCC
Red-tailed hawk	<i>Buteo jamaicensis</i>	grasslands/woodlands/agriculture	x	x	S5B	—	—
Rough-legged hawk	<i>Buteo lagopus</i>	grasslands/agriculture	x	x	S5N	—	—
Sharp-shinned hawk	<i>Accipiter striatus</i>	coniferous forest	x	x	S4B	—	—
Short-eared owl	<i>Asio flammeus</i>	grasslands/agriculture	x	x	S4	—	BCC
Swainson's hawk	<i>Buteo swainsoni</i>	wooded riparian/grasslands/agriculture		x	S4B	—	—
<i>Upland Game Birds – 1.0-mile wildlife study area</i>							
Hungarian partridge	<i>Perdix perdix</i>	grassland/agriculture	x	x	SNA	—	—
Greater sage-grouse	<i>Centrocercus urophasianus</i>	sagebrush	x	x	S2	Sensitive	C
Ring-necked pheasant	<i>Phasianus colchicus</i>	grassland/agriculture with brushy cover	x	x	SNA	—	—
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>	grassland/shrubs	x	x	S4	—	—
Wild turkey	<i>Meleagris gallopavo</i>	ponderosa pine/grassland/shrubs/agriculture	x	x	SNA	—	—

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<i>Migratory Game Birds – 1.0-mile wildlife study area</i>							
American coot	<i>Fulica americana</i>	wetlands	x	x	S5B	—	—
American wigeon	<i>Anas americana</i>	wetlands/water features		x	S5B	—	—
Blue-winged teal	<i>Anas discors</i>	wetlands/water features	x	x	S5B	—	—
Bufflehead	<i>Bucephala albeola</i>	water features		x	S5B	—	—
Canada goose	<i>Branta canadensis</i>	wetlands/water features	x	x	S5B	—	—
Canvasback	<i>Aythya valisineria</i>	wetlands/water features		x	S5B	—	—
Cinnamon teal	<i>Anas cyanoptera</i>	wetlands/riparian/water features		x	S5B	—	—
Common goldeneye	<i>Bucephala clangula</i>	wetlands/water features	x	x	S5	—	—
Common merganser	<i>Mergus merganser</i>	wetlands/water features	x	x	S5B	—	—
Gadwall	<i>Anas strepera</i>	wetlands/riparian/water features	x	x	S5B	—	—
Green-winged teal	<i>Anas crecca</i>	wetlands/riparian/water features		x	S5B	—	—
Hooded merganser	<i>Lophodytes cucullatus</i>	rivers	x		S4	—	—
Lesser scaup	<i>Aythya affinis</i>	wetlands/riparian/water features		x	S5B	—	—
Mallard	<i>Anas platyrhynchos</i>	wetlands/riparian/water features	x	x	S5	—	—
Mourning dove	<i>Zenaida macroura</i>	open woodlands/ grassland	x	x	S5B	—	—
Northern pintail	<i>Anas acuta</i>	wetlands/riparian/water features		x	S5B	—	—
Northern shoveler	<i>Anas clypeata</i>	wetlands/riparian/water features	x	x	S5B	—	—
Redhead	<i>Aythya americana</i>	wetlands/riparian/water features		x	S5B	—	—
Ruddy duck	<i>Oxyura jamaicensis</i>	wetlands/riparian/water features	x	x	S5B	—	—
Sandhill crane	<i>Grus canadensis</i>	grasslands/wetlands/ riparian	x	x	S5B,S2N	—	—
Wilson's snipe	<i>Gallinago delicata</i>	wetlands/riparian/water features		x	S5	—	—

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Wood duck	<i>Aix sponsa</i>	wetlands/riparian/water features	x	x	S5B	—	—
<i>Nongame Birds – 1.0-mile wildlife study area</i>							
Chickadees, Nuthatches, and Their Allies							
Black-capped chickadee	<i>Poecile atricapillus</i>	deciduous and mixed deciduous and coniferous forest/open woodlands/parks	x	x	S5	—	—
Pygmy nuthatch	<i>Sitta pygmaea</i>	pine forests		x	S4	—	—
Red-breasted nuthatch	<i>Sitta canadensis</i>	forests with strong conifer component	x	x	S5	—	—
White-breasted nuthatch	<i>Sitta carolinensis</i>	deciduous/mixed deciduous and coniferous forests	x	x	S4	—	—
Cuckoos							
Black-billed cuckoo	<i>Coccyzus erythrophthalmus</i>	woodlands/riparian	x	x	S3B	—	BCC
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	woodlands/riparian	x	x	S3B	—	—
Finches							
American goldfinch	<i>Spinus tristis</i>	fields/floodplains/forests/agriculture	x	x	S5B	—	—
Cassin's finch	<i>Haemorhous cassinii</i>	forests	x	x	S3	—	—
House finch	<i>Haemorhous mexicanus</i>	open habitats/residential	x	x	S5	—	—
Lesser goldfinch	<i>Spinus psaltria</i>	open habitats/scattered trees/residential	x		SU	—	—
Pine siskin	<i>Spinus pinus</i>	forests/residential areas	x	x	S5	—	—
Red crossbill	<i>Loxia curvirostra</i>	coniferous/mixed deciduous forests/pine savannah	x	x	S5	—	—
Goatsuckers							
Bonaparte's gull	<i>Chroicocephalus philadelphia</i>	lakes/ponds		x	SNA	—	—

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Common nighthawk	<i>Chordeiles minor</i>	dunes/beaches/grasslands/ human disturbance/ agriculture/riparian	x	x	S5B	—	—
Common poorwill	<i>Phalaenoptilus nuttallii</i>	grassland/shrubland/foot hills	x	x	S4B	—	—
<b>Gulls and Terns</b>							
Franklin's gull	<i>Leucophaeus pipixcan</i>	prairie marshes/water features		x	S3B	Sensitive	—
Interior least tern <sup>g</sup>	<i>Sterna antillarum athalassos</i>	large prairie rivers	-	-	S1B	Special Status	LE
Ring-billed gull	<i>Larus delawarensis</i>	water features/human disturbance/agriculture		x	S5B	—	—
<b>Icterids</b>							
Baltimore oriole	<i>Icterus galbula</i>	open woodlands/ hedgerows/parks	x		S4B	—	—
Bobolink	<i>Dolichonyx oryzivorus</i>	grassland	x	x	S3B	—	—
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	open, human disturbance areas (parks, golf courses, campuses)	x	x	S5B	—	—
Brown-headed cowbird	<i>Molothrus ater</i>	grasslands with low, scattered trees	x	x	S5B	—	—
Bullock's oriole	<i>Icterus bullockii</i>	open woodlands/riparian woodlands	x	x	S5B	—	—
Common grackle	<i>Quiscalus quiscula</i>	open woodlands/ wetland/residential	x	x	S5B	—	—
Orchard oriole	<i>Icterus spurius</i>	open woodlands/riparian woodlands/residential	x	x	S4B	—	—
Red-winged blackbird	<i>Agelaius phoeniceus</i>	wetland/agriculture	x	x	S5B	—	—
Rusty blackbird	<i>Euphagus carolinus</i>	wooded wetlands/ riparian		x	SNA	—	—
Western meadowlark	<i>Sturnella neglecta</i>	grassland/agriculture	x	x	S5B	—	—
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	prairie wetlands	x	x	S5B	—	—

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<b>Jays, Crows, and Their Allies</b>							
American crow	<i>Corvus brachyrhynchos</i>	open landscapes	x	x	S5B	—	—
Black-billed magpie	<i>Pica hudsonia</i>	riparian/grasslands/ sagebrush/agriculture	x	x	S5	—	—
Blue jay	<i>Cyanocitta cristata</i>	forests/residential areas	x		S5	—	—
Common raven	<i>Corvus corax</i>	forests/grasslands/ agriculture/mountains	x	x	S5	—	—
Pinyon jay	<i>Gymnorhinus cyanocephalus</i>	low-elevation ponderosa pine, limber pine, juniper woodlands	x	x	S3	—	BCC
<b>Kingfishers</b>							
Belted kingfisher	<i>Megaceryle alcyon</i>	riparian/water features	x	x	S5B	—	—
<b>Kinglets and Gnatcatchers</b>							
Golden-crowned kinglet	<i>Regulus satrapa</i>	forests/clearings/riparian	x		S5	—	—
<b>Larks</b>							
Horned lark	<i>Eremophila alpestris</i>	barren country	x	x	S5	—	—
<b>Loons and Grebes</b>							
Clark's grebe	<i>Aechmophorus clarkii</i>	lakes/reservoirs	x		S3B	—	—
Common loon	<i>Gavia immer</i>	lakes/reservoirs		x	S3B	—	—
Eared grebe	<i>Podiceps nigricollis</i>	lakes/ponds	x	x	S5B	—	—
Pied-billed grebe	<i>Podilymbus podiceps</i>	wetlands/ponds	x		S5B	—	—
Western grebe	<i>Aechmophorus occidentalis</i>	marshes/lakes	x	x	S4B	—	—
<b>Mimids</b>							
Brown thrasher	<i>Toxostoma rufum</i>	deciduous forests/ thickets/forest edge	x	x	S5B	—	—
Gray catbird	<i>Dumetella carolinensis</i>	dense shrubs/young trees/forest edges/ roadsides/residential/ streamside	x	x	S5B	—	—
Northern mockingbird	<i>Mimus polyglottos</i>	parks/cultivated lands/residential	x		SNA	—	—
Sage thrasher	<i>Oreoscoptes montanus</i>	sagebrush	x	x	S3B	Sensitive	BCC

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<b>Pelicans and Cormorants</b>							
American white pelican	<i>Pelecanus erythrorhynchos</i>	wetlands/water features	x	x	S3B	—	—
Double-crested cormorant	<i>Phalacrocorax auritus</i>	water features	x	x	S5B	—	—
<b>Pigeons and Doves</b>							
Eurasian collared-dove	<i>Streptopelia decaocto</i>	any	x	x	SNA	—	—
Rock pigeon	<i>Columba livia</i>	human disturbance/agriculture	x		SNA	—	—
<b>Waxwings, Pipets, Starlings</b>							
Bohemian waxwing	<i>Bombycilla garrulus</i>	open forests	x		S5N	—	—
Cedar waxwing	<i>Bombycilla cedrorum</i>	open forests and woodlands	x	x	S5B	—	—
Sprague's pipit	<i>Anthus spragueii</i>	grassland	x		S3B	Sensitive	C, BCC
European starling	<i>Sturnus vulgaris</i>	Any with human disturbance	x	x	SNA	—	—
<b>Rails and Cranes</b>							
Sora	<i>Porzana carolina</i>	wetlands	x	x	S5B	—	—
Whooping crane <sup>g</sup>	<i>Grus Americana</i>	wetlands	-	-	S1M	Special Status	LE
<b>Shorebirds</b>							
American avocet	<i>Recurvirostra americana</i>	wetlandswater features with mudflats	x	x	S4B	—	—
Greater yellowlegs	<i>Tringa melanoleuca</i>	wetlands/water features with mudflats	x	x	SNA	—	—
Killdeer	<i>Charadrius vociferus</i>	agriculture/human disturbance/wetlands	x	x	S5B	—	—
Lesser yellowlegs	<i>Tringa flavipes</i>	open woodlands/meadows/wetlands/ponds with mudflats		x	SNA	—	—
Long-billed curlew	<i>Numenius americanus</i>	Grasslands/moist meadows	x	x	S3B	Sensitive	BCC
Mountain plover	<i>Charadrius montanus</i>	prairie dog colonies/grassland	x		S2B	Sensitive	BCC

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Red-necked phalarope	<i>Phalaropus lobatus</i>	lakes/ponds	x		SNA	—	—
Short-billed dowitcher	<i>Limnodromus griseus</i>	grassy marshes/mudflats	x		SNA	—	—
Solitary sandpiper	<i>Tringa solitaria</i>	brushy sloughs/open mudflats	x	x	SNA	—	—
Spotted sandpiper	<i>Actitis macularius</i>	wetlands/riparian/water features	x	x	S5B	—	—
Upland sandpiper	<i>Bartramia longicauda</i>	grasslands	x	x	S4B	—	BCC
Western sandpiper	<i>Calidris mauri</i>	wetlands/water features with mudflats		x	SNA	—	—
White-rumped sandpiper	<i>Calidris fuscicollis</i>	wetlands/water features	x		SNA	—	—
Willet	<i>Tringa semipalmata</i>	grasslands/wetlands/riparian	x		S4B	—	—
Wilson's phalarope	<i>Phalaropus tricolor</i>	wetlands/riparian/water features		x	S4B	—	—
<b>Shrikes and Vireos</b>							
Loggerhead shrike	<i>Lanius ludovicianus</i>	shrubland/sagebrush	x	x	S3B	Sensitive	BCC
Northern shrike	<i>Lanius excubitor</i>	shrublands and plains near forests	x	x	S5N	—	—
Plumbeous vireo	<i>Vireo plumbeus</i>	montane forests	x	x	S3, S4B	—	—
Red-eyed vireo	<i>Vireo olivaceus</i>	mixed coniferous/deciduous forest	x		S4B	—	—
Solitary vireo	<i>Vireo solitarius</i>	mixed coniferous/deciduous forest	x		SNR	—	—
Warbling vireo	<i>Vireo gilvus</i>	mixed deciduous woodlands/riparian woodlands	x	x	S5B	—	—
Yellow-throated vireo	<i>Vireo flavifrons</i>	open deciduous woodland/riparian woodland	x		SNA	—	—
<b>Sparrows and Their Allies</b>							
American tree sparrow	<i>Spizella arborea</i>	tree lines/open areas with scattered trees	x	x	SNA	—	—

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Baird's sparrow	<i>Ammodramus bairdii</i>	prairie	x	x	S3B	Sensitive	BCC
Brewer's sparrow	<i>Spizella breweri</i>	sagebrush	x	x	S3B	Sensitive	BCC
Chestnut-collared longspur	<i>Calcarius ornatus</i>	grassland	x	x	S2B	Sensitive	BCC
Chipping sparrow	<i>Spizella passerina</i>	open woodlands/ riparian/brush	x	x	S5B	—	—
Clay-colored sparrow	<i>Spizella pallida</i>	open shrubland/ riparian/forest edges/ burns	x	x	S4B	—	—
Dark-eyed junco	<i>Junco hyemalis</i>	residential/stream and park edges/wooded areas	x	x	S5B	—	—
Dark-eyed junco (Montana)	<i>Junco hyemalis montanus</i>	residential/stream and park edges/wooded areas	x		SNR	—	—
Dark-eyed junco (slate colored)	<i>Junco hyemalis hyemalis</i>	residential/stream and park edges/wooded areas	x	x	SNR	—	—
Field sparrow	<i>Spizella pusilla</i>	fields/woodland openings/roadsides	x	x	S4B	—	—
Grasshopper sparrow	<i>Ammodramus savannarum</i>	prairies with intermittent brush	x	x	S4B	—	BCC
Green-tailed towhee	<i>Pipilo chlorurus</i>	shrubland/shrub-steppe/ open areas in montane forest	x		S3B	—	—
House sparrow	<i>Passer domesticus</i>	residential/agriculture	x		SNA	—	—
Lark sparrow	<i>Chondestes grammacus</i>	open habitats/shrub- steppe/grasslands/ agriculture	x	x	S5B	—	—
Lincoln's sparrow	<i>Melospiza lincolnii</i>	Riparian/deciduous forests/wetlands in montane habitat	x	x	S5B	—	—
Sagebrush sparrow	<i>Artemisiospiza nevadensis</i>	sagebrush/sagebrush- saltbush		x	S3B	—	BCC
Savannah sparrow	<i>Passerculus sandwichensis</i>	open habitats	x	x	S5B	—	—
Song sparrow	<i>Melospiza melodia</i>	forest/shrub/riparian	x	x	S5B	—	—

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Spotted towhee	<i>Pipilo maculatus</i>	Shrubby habitat associated with woodlands	x	x	S5B	—	—
Swamp sparrow	<i>Melospiza georgiana</i>	meadows/riparian/wetlands	x		S4M	—	—
Vesper sparrow	<i>Pooecetes gramineus</i>	grasslands/sagebrush/shrublands	x	x	S5B	—	—
White-crowned sparrow	<i>Zonotrichia leucophrys</i>	grasslands/forest edge/riparian	x	x	S5B	—	—
White-throated sparrow	<i>Zonotrichia albicollis</i>	wooded areas/shrubland/clearings/wetland	x	x	SNA	—	—
<b>Swallows</b>							
Bank swallow	<i>Riparia riparia</i>	lowland areas near water/wetlands	x	x	S5B	—	—
Barn swallow	<i>Hirundo rustica</i>	buildings/bridges/caves/open areas near water	x	x	S5B	—	—
Cliff swallow	<i>Petrochelidon pyrrhonota</i>	canyons/foothills/river valleys/human disturbance	x	x	S5B	—	—
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>	open areas/along watercourses/cliffs/riverbanks/caves/human disturbance	x	x	S5B	—	—
Tree swallow	<i>Tachycineta bicolor</i>	open fields/meadows/riparian/wetlands	x	x	S5B	—	—
Violet-green swallow	<i>Tachycineta thalassina</i>	montane coniferous forests	x	x	S5B	—	—
<b>Swifts</b>							
Chimney swift	<i>Chaetura pelagica</i>	urban	x		S3, S4B	—	—
White-throated swift	<i>Aeronautes saxatalis</i>	cliffs/canyons/mountains/forests	x	x	S5B	—	—

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<b>Tanagers and Their Allies</b>							
Black-headed grosbeak	<i>Pheucticus melanocephalus</i>	riparian/open deciduous and coniferous forests/ gardens/orchards	x	x	S5B	—	—
Evening grosbeak	<i>Coccothraustes vespertinus</i>	mixed conifer forests	x		S3	—	—
Indigo bunting	<i>Passerina cyanea</i>	shrubby and weedy habitats/woods/fields/ upland areas	x	x	S4B	—	—
Lark bunting	<i>Calamospiza melanocorys</i>	grasslands/agriculture	x	x	S4B	—	—
Lazuli bunting	<i>Passerina amoena</i>	arid brushy areas	x	x	S4B	—	—
Rose-breasted grosbeak	<i>Pheucticus ludovicianus</i>	forest edge/wooded areas/riparian	x		SNA	—	—
Western tanager	<i>Piranga ludoviciana</i>	open woodlands	x	x	S5B	—	—
<b>Thrushes</b>							
American robin	<i>Turdus migratorius</i>	open short-grass associated with forests/woodland/ residential	x	x	S5B	—	—
Eastern bluebird	<i>Sialia sialis</i>	riparian/open grassy areas	x		S4B	—	—
Gray-cheeked thrush	<i>Catharus minimus</i>	coniferous forests/shrub/ riparian	x		SNA	—	—
Hermit thrush	<i>Catharus guttatus</i>	interior forest edges	x		S5B	—	—
Mountain bluebird	<i>Sialia currucoides</i>	subalpine meadows/ grasslands/shrub-steppe/coniferous woodlands	x	x	S5B	—	—
Swainson's thrush	<i>Catharus ustulatus</i>	coniferous forests	x	x	S5B	—	—

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Townsend's solitaire	<i>Myadestes townsendi</i>	montane and subalpine coniferous forests/brush/rocky cliffs	x	x	S5	—	—
Veery	<i>Catharus fuscescens</i>	deciduous forests/riparian	x		S3B	Sensitive	—
Wood thrush	<i>Hylocichla mustelina</i>	forests/shrub	x		SNA	—	—
<b>Tyrant Flycatchers</b>							
Alder flycatcher	<i>Empidonax alnorum</i>	riparian shrub/forests	x		S3B	—	—
Cassin's kingbird	<i>Tyrannus vociferans</i>	open conifer forests/riparian	x	x	S4B	—	—
Dusky flycatcher	<i>Empidonax oberholseri</i>	open conifer forests/riparian	x		S5B	—	—
Eastern kingbird	<i>Tyrannus tyrannus</i>	open areas near forest edges/shrubs/trees/	x	x	S5B	—	—
Least flycatcher	<i>Empidonax minimus</i>	deciduous and mixed forests/riparian/clearings	x	x	S5B	—	—
Olive-sided flycatcher	<i>Contopus cooperi</i>	montane and boreal forests/forest burns		x	S4B	—	—
Say's phoebe	<i>Sayornis saya</i>	grassland/sagebrush/badlands/foothills/agriculture/canyons	x	x	S5B	—	—
Western kingbird	<i>Tyrannus verticalis</i>	grasslands/agriculture/open woodlands	x	x	S5B	—	—
Western wood-pewee	<i>Contopus sordidulus</i>	river valley with clearings or groves of deciduous trees	x	x	S5B	—	—
Willow flycatcher	<i>Empidonax traillii</i>	moist shrubby areas	x	x	S4B	—	—
<b>Vultures</b>							
Turkey vulture	<i>Cathartes aura</i>	grasslands/badlands/woodlands/agriculture	x	x	S4B	—	—
<b>Wading Birds</b>							
American bittern	<i>Botaurus lentiginosus</i>	wetlands		x	S3B	Sensitive	BCC
Great blue heron	<i>Ardea herodias</i>	wetlands/water features	x	x	S3	—	—
Green heron	<i>Butorides virescens</i>	wetlands/water features	x		SNA	—	—
<b>Woodpeckers</b>							

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Downy woodpecker	<i>Picoides pubescens</i>	riparian/deciduous woodlands	x	x	S5	—	—
Hairy woodpecker	<i>Picoides villosus</i>	urban wooded areas/forests	x	x	S5	—	—
Lewis's woodpecker	<i>Melanerpes lewis</i>	open forests/river bottom woods/edge habitats/forest burns	x	x	S2B	—	BCC
Northern flicker	<i>Colaptes auratus</i>	open wooded areas/forest edges	x	x	S5	—	—
Northern flicker (red-shafted)	<i>Colaptes auratus cafer</i>	open wooded areas/forest edges	x		SNRB	—	—
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>	riparian/forest burns/savannahs	x	x	S3B	Sensitive	BCC
<b>Wood-warblers</b>							
American redstart	<i>Setophaga ruticilla</i>	deciduous woodlands/riparian	x	x	S5B	—	—
Black-and-white warbler	<i>Mniotilta varia</i>	riparian/woody draws/deciduous and mixed deciduous forests		x	S4B	—	—
Blackpoll warbler	<i>Setophaga striata</i>	riparian	x	x	SNA	—	—
Black-throated blue warbler	<i>Setophaga caeruleascens</i>	forest edges/riparian woodlands	x		SNA	—	—
Common yellowthroat	<i>Geothlypis trichas</i>	wetlands/prairie/pine forest	x	x	S5B	—	—
MacGillivray's warbler	<i>Geothlypis tolmiei</i>	riparian habitat/coniferous forests		x	S5B	—	—
Northern waterthrush	<i>Parkesia noveboracensis</i>	wooded wetlands/riparian/lake shores		x	S5B	—	—
Orange-crowned warbler	<i>Oreothlypis celata</i>	shrub/aspen forest/riparian/chaparral	x	x	S5B	—	—
Ovenbird	<i>Seiurus aurocapilla</i>	coniferous/deciduous forests	x		S4B	—	—
Wilson's warbler	<i>Cardellina pusilla</i>	shrub thickets in riparian areas/wetlands	x	x	S5B	—	—

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Yellow warbler	<i>Setophaga petechia</i>	wet, deciduous thickets	x	x	S5B	—	—
Yellow-breasted chat	<i>Icteria virens</i>	riparian/forest edges/ regenerating forests/ fencerows	x	x	S5B	—	—
Yellow-rumped warbler	<i>Setophaga coronata</i>	coniferous forests/ coniferous-deciduous forests	x	x	S5B	—	—
Yellow-rumped warbler (audubon's)	<i>Setophaga coronata auduboni</i>	coniferous forests/ coniferous-deciduous forests	x		S5B	—	—
Yellow-rumped warbler (myrtle)	<i>Setophaga coronata coronata</i>	coniferous forests/ coniferous-deciduous forests	x		S5B	—	—
<b>Wrens</b>							
Bewick's wren	<i>Thryomanes bewickii</i>	open woodlands/riparian woodlands/brush		x	SNA	—	—
House wren	<i>Troglodytes aedon</i>	open woodlands/ shrub/residential	x	x	S5B	—	—
Rock wren	<i>Salpinctes oboletus</i>	rocky areas	x	x	S5B	—	—
<b>Reptiles and Amphibians</b>							
<i>Reptiles – 0.5-mile wildlife study area</i>							
Common garter snake	<i>Thamnophis sirtalis</i>	Any- more common near water	x		S4	—	—
Common sagebrush lizard	<i>Sceloporus graciosus</i>	sage-steppe/open rocky areas in forests	x		S4	—	—
Eastern racer	<i>Coluber constrictor</i>	short-grass prairie/open forested areas	x	x	S5	—	—
Gopher snake (bullsnake)	<i>Pituophis catenifer</i>	arid environments	x	x	S5	—	—
Greater short-horned lizard	<i>Phrynosoma hernandesi</i>	arid environments/short- grass prairie/sagebrush		x	S3	Sensitive	—
Milksnake	<i>Lampropeltis triangulum</i>	sagebrush/grassland/ ponderosa pine	x		S2	Sensitive	—
Painted turtle	<i>Chrysemys picta</i>	water features	x	x	S4	—	—

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Plains garter snake	<i>Thamnophis radix</i>	Any-more common near water	x	x	S4	—	—
Prairie rattlesnake	<i>Crotalus viridis</i>	open, arid environments/ mixed grass and coniferous forests	x	x	S4	—	—
Rubber boa	<i>Charina bottae</i>	forests		x	S4	—	—
Snapping turtle	<i>Chelydra serpentina</i>	water features	x		S3	Sensitive	—
Spiny softshell	<i>Apalone spinifera</i>	water features	x		S3	Sensitive	—
Western hog-nosed snake	<i>Heterodon nasicus</i>	grassland/sagebrush	x		S2	Sensitive	—
<i>Amphibians – 0.5-mile wildlife study area</i>							
American bullfrog	<i>Lithobates catesbeianus</i>	water features		x	SNA	—	—
Barred tiger salamander	<i>Ambystoma mavortium</i>	prairie/agriculture	x		S4	—	—
Boreal chorus frog	<i>Pseudacris maculata</i>	wetlands/water features/upland	x	x	S4	—	—
Great plains toad	<i>Anaxyrus cognatus</i>	sagebrush/grassland/ water features/agriculture	x	x	S2	Sensitive	—
Northern leopard frog	<i>Lithobates pipiens</i>	water features/riparian areas/wetlands	x	x	S4	—	—
Plains spadefoot	<i>Spea bombifrons</i>	water features with sandy soil	x	x	S3	Sensitive	—

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Woodhouse's toad	<i>Anaxyrus woodhousii</i>	water features/riparian areas/agriculture	x	x	S4	—	—
<p>Notes:</p> <p><sup>a</sup> Habitat descriptions obtained from Montana Field Guide published by MTNHP and FWP; accessed: &lt;<a href="http://fieldguide.mt.gov/">http://fieldguide.mt.gov/</a>&gt;</p> <p><sup>b</sup> Historical occurrence obtained from FWP, 2004a, 2004b; MTNHP, 2013a, 2013b; Roundstone, 2013)</p> <p><sup>c</sup> Species documented by OEA during 2013 baseline surveys</p> <p><sup>d</sup> Montana FWP has jurisdiction over fish and wildlife. S1 = at high risk because of extremely limited and/or rapidly declining population numbers, range, and/or habitat, making it highly vulnerable to global extinction or extirpation in the state. S2 = at risk because of very limited and/or potentially declining population numbers, range, and or/habitat, making it vulnerable to global extinction or extirpation in the state. S3 = potentially at risk because of limited and/or declining numbers, range, and/or habitat, even though it may be abundant in some areas. S4 = apparently secure, though it may be quite rare in parts of its range and/or suspected to be declining. S5 = common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range. SNR = not ranked as of yet. SU = unrankable (species currently unrankable because of a lack of information or substantially conflicting information about status or trends). SNA = a conservation status rank that is not applicable for one of the following reasons: 1) the taxa is of hybrid origin, exotic or introduced, or accidental or 2) is not confidently present in the state. B = breeding (rank refers to the breeding population of the species in Montana). Appended to the state rank (e.g., S2B, S5N = at risk during breeding season but common in winter). N = nonbreeding (rank refers to the nonbreeding population of the species in Montana. Appended to the state rank (e.g., S2B, S5N = at risk during breeding season but common in winter). M = migratory (species occurs in Montana only during migration). S#, S# = indicates a range of uncertainty about the status of the species. Definitions obtained from Montana Field Guide published by MTNHP and FWP; accessed: &lt;<a href="http://fieldguide.mt.gov/">http://fieldguide.mt.gov/</a>&gt;.</p> <p><sup>e</sup> Species designated by the BLM State Director as being in need of special considerations in management attention because of population or habitat concerns (BLM 2013, 2014). The BLM designation for federally listed threatened or endangered species is “special-status species.”</p> <p><sup>f</sup> Species listed or in the listing process under ESA. LE = listed endangered; C = candidate. BCC = species listed on the Birds of Conservation Concern list maintained by USFWS</p> <p><sup>g</sup> There are no known historical or documented occurrences of interior least tern or whooping crane in the study area; however, these species may migrate through the study area and are listed by the USFWS as potentially occurring in Custer County (both species) and Rosebud County (interior least tern) for Section 7 ESA purposes.</p>							

## J.12 References

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