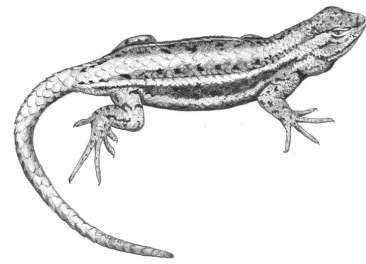
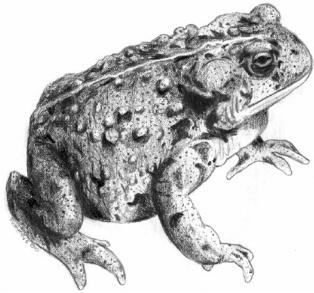


**SURVEY FOR RARE VERTEBRATES IN THE PINEDALE FIELD OFFICE OF  
THE USDI BUREAU OF LAND MANAGEMENT (WYOMING)**



Prepared by:

Matt McGee, Assistant Zoologist  
Doug Keinath, Zoologist  
Gary Beauvais, Director

Wyoming Natural Diversity Database  
University of Wyoming  
P.O. Box 3381  
Laramie, Wyoming 82071-3381

Prepared for:

Jeff Carroll  
Bureau of Land Management  
5353 Yellowstone Road  
P.O. Box 1828  
Cheyenne, Wyoming 82003

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# **Survey for Rare Vertebrates in the Pinedale Field Office of the USDI Bureau of Land Management (Wyoming)**

## **Abstract**

The Wyoming Natural Diversity Database (WYNDD) conducted presence-absence surveys for rare vertebrates on the Pinedale Field Office of the Bureau of Land Management (BLM) in western Wyoming during the spring and summer of 2002. These surveys were conducted under contract to the BLM state office in Cheyenne, WY. The goal of these surveys was to presence and presumed absence of rare vertebrate species from the Wyoming BLM Sensitive Species List.

The survey area consisted of the southern portion of the Pinedale Field Office in the Green River Basin. Survey sites were randomly stratified selected macroenvironments which were classified by ecological subsection and elevation. At least one random site representing habitat types associated with sensitive species was surveyed within each of the 35 identified macroenvironments. WYNDD biologists recorded presence of 11 of the 32 sensitive species targeted by these surveys. Biologists also recorded observations of other vertebrate species not specifically targeted by this project. All together we recorded 146 vertebrate species on the BLM lands in the Pinedale Field Office (34 mammals, 105 birds, 4 amphibians, and 3 reptiles) during May to August 2002.

This report details the results of surveys for sensitive species, and provides Geographical Information System (GIS) data and maps on the locations where sensitive species were observed. This information can be used to consistently manage BLM authorized activities in areas where these rare vertebrate species occur, and to monitor any changes in populations of sensitive species due to these activities.

## **Introduction**

The goal of this project was to document occurrences for selected vertebrate species on the Wyoming BLM Sensitive Species List (Appendix A). This information is important for filling in gaps in our knowledge of the distributions for these species in Wyoming. This project also serves as a model for future surveys for sensitive species on BLM lands in other field offices in Wyoming. This type of work is an essential component in implementing the BLM Sensitive Species Policy in Wyoming. Information on the distribution of these species will be useful in managing critical habitats on BLM lands where these species are present. Information from these surveys can also contribute to preparing Environmental Assessments or Environmental Impact Statements associated with new management actions on BLM lands in Wyoming. In the past few years there has been an increase in development of mineral resources on BLM land in Wyoming creating a need for more accurate information on the distribution of rare species, especially in areas of rapid development such as the Pinedale Field Office. Information from our surveys can be used to accomplish the goals of the BLM Sensitive Species Policy: 1) Maintain vulnerable species and habitat components in functional BLM ecosystems 2) Ensure sensitive species are considered in land management decisions 3) Prevent a need for species listing under the Endangered Species Act 4) Prioritize needed conservation work with an emphasis on habitat.

The species selected for these surveys (Table 1) are from the Wyoming BLM Sensitive Species List (Appendix A). Two additional species of mammals, one bird species, and four reptile species, were identified by WYNDD staff as additional species of management concern and were also targeted by these surveys.

Several species of management concern were not addressed by this project because they are currently the focus of other intensive surveys and research in Wyoming or their presence in the study area was unlikely (Appendix B).

This project focused on surveying BLM lands on the Pinedale Field Office within the Green River Basin. We did not conduct surveys on several small, isolated parcels of land owned by the BLM within Bridger-Teton National Forest or in the Snake River Basin. These areas were not included in this project due to their distinctly different ecological and management setting as well as their geographic isolation from other BLM lands in the Pinedale Field Office.

This report provides a basic outline of the methods used to survey rare vertebrate species and the results of those surveys. The accompanying CD-ROM includes ArcView 3.2 formatted shape files and associated tables that describe the survey locations and sensitive species occurrence data.

## Methods

Biologists from the Wyoming Natural Diversity Database (WYNDD) surveyed for amphibians, reptiles, breeding birds, and small mammals from May through August 2002. Survey sites were selected using a stratified random sampling method in order to include samples from across the entire Pinedale Field Office. Areas for surveys were identified by mapping three ecological subsections (Reiners and Thurston 1996) (Upper Green River Basin, Lower Green River Basin, and Overthrust Mountains) (Figure 2) in the Pinedale Field Office in each of three elevation zones (high= >7600', medium= 7600-7100', low= <7100') (Figure 3). We identified nine unique combinations of elevation and ecological subsection, which were simplified by combining small polygons with larger adjacent polygons to result in six unique ecological subsection x elevation combinations (Figure 4). These combinations are termed "macroenvironments" for the purposes of this study.

We then used GAP habitat maps (Merrill et al. 1996, Driese 1997) and spatial data on wetlands and prairie dog towns provided by the Pinedale Field Office to identify potential survey sites in habitats associated with the targeted sensitive species (Table 2) within each macroenvironment. WYNDD biologists also conducted on the ground searches for habitats associated with the targeted sensitive species (Table 2, Figure 5) to select specific survey sites. The Pinedale Field Office is dominated by sagebrush grasslands, with small patches of other habitat types interspersed throughout. Riparian gallery forest and grassland habitats were virtually non-existent on BLM owned lands within the Pinedale Field Office. We combined habitat and macroenvironment maps to identify as many unique combinations as possible. This resulted in 35 unique macroenvironment x habitat combinations. At least one representative site from each combination was selected at random as a survey site (Figure 6). In many cases we selected several representative sites from each combination in order to conduct surveys for different species groups. For example the size of the area surveyed during a bird point count is different than the size of an area covered during a spotlighting transect for swift fox. Therefore we sampled slightly different parts of the representative site during surveys for breeding birds and surveys for swift fox. In the case of amphibian and Northern Goshawk surveys we sampled multiple sites within macroenvironment x habitat combinations. This exception to the stratified random sampling method was made because the habitat types associated with these species (wetlands and conifer forests) were relatively rare and restricted to limited areas within the Pinedale Field Office. In order to adequately survey for these species we decided to conduct surveys at multiple sites within the same macroenvironment.

We conducted formal surveys, as detailed below, for the selected sensitive species within each of the representative sites. All species observed during these surveys were recorded regardless of their sensitive species status. We also recorded opportunistic observations for sensitive species on BLM lands when traveling to and from survey sites. We did not record data on observations of sensitive species from private land or on lands managed by the U.S. Forest Service within the Pinedale Field Office. However these observations

were used to evaluate the likelihood that species not observed during surveys do actually occur in the area.

### *Breeding Bird Surveys*

Three main types of surveys were used for surveying breeding birds based on the targeted species (songbirds, raptors, and waterfowl). These surveys were conducted during May and June, 2002 in order to target sensitive bird species during their breeding season when they are easier to detect.

Songbird surveys were conducted using methods for point count/line transects designed by the Rocky Mountain Bird Observatory (Point-Transect Protocol for Monitoring Wyoming's Birds, 2002) and methods from Ralph et al. (1993, 1995). Transects were walked at a slow rate of speed through uniform habitats away from habitat edge areas. Each transect was approximately 2.5 km long and all species detected either audibly or visually were recorded along these transects. Extensive effort was made to positively identify every bird encountered during these surveys. WYNDD biologists trained with ornithologists from the Rocky Mountain Bird Observatory in order to hone their identification skills prior to beginning surveys for breeding birds. This resulted in positive identification of greater than 97% of the birds observed.

Raptor survey methods included road transects, playback surveys, and line transects (Anderson et al. 1985, Fuller and Mosher 1987, Mosher et al 1990, Haugh and Didiuk 1993, Bosakowski and Vaughn 1995). Ferruginous hawks were surveyed using road transects approximately 30 miles in length that traversed suitable open habitat with stops every 2 miles for 5 minutes to search for hawks. During these stops one minute of ferruginous hawk calls were played followed by 5 minutes of listening for responses. Northern goshawks were surveyed using playback calls every 400 meters along transects at least 2 km long that were within contiguous conifer habitat or along the edge of dense conifer stands. At every playback station we played 1 minute of northern goshawk calls and listened for responses for approximately 1 minute. This process was repeated at least twice at each station. If we observed a goshawk we attempted to visually track the individual to determine if a nest was nearby. We also conducted visual searches of the area near the observation to try to locate a nest site. Peregrine falcon surveys were conducted by walking line transects along cliff bands and scanning with binoculars and spotting scopes for signs of nesting activity (white wash). Burrowing owls were surveyed using road and line transects as well as playback methods similar to those described above for the ferruginous hawk.

Waterfowl surveys were conducted using visual searches of suitable habitats while walking line transects or observing habitats with spotting scopes or binoculars from a vantage point with a good view of a wetland. Waterfowl were also observed opportunistically during amphibian surveys and songbird surveys in riparian areas.

## *Amphibian Surveys*

The protocol used to conduct surveys from amphibian species was modified from the Visual Encounter Survey (VES) methods detailed by Crump and Scott (1994). Each selected site was surveyed during day and night hours in order to record observations of both diurnal and nocturnal species. Data was recorded at each survey sight using a standardized Wyoming Herpetofauna Survey Data Sheet (WYG&F 2002). Technicians walked 2 km length of streams or the entire border of ponds searching visibly and audibly for adults, tadpoles, and egg masses. Any amphibians observed were identified using field guides (Livo 1998, Parker and Anderson 2001). Voucher specimens were collected of Boreal toads (*Bufo boreas*) at each site where they were observed, and any dead Boreal toads were also collected. Boreal toad specimens were collected in bags, labeled, and frozen or placed in 95% alcohol for later genetic analysis by Wyoming Game and Fish Department personnel. These specimens will be used to determine whether Boreal toads from the areas sampled are genetically more similar to the southern or northern Rocky Mountain populations. Dead Boreal toads were collected in order to determine if chytrid fungus is present in the areas sampled.

## *Reptile Surveys*

Reptile surveys were conducted using targeted search grids (100 m<sup>2</sup>) every 250 meters along a 2 km transect. Intensive searches within these grids were conducted by walking 5 transects within each grid searching for reptiles by moving rocks, logs and litter and capturing lizards (MacNally and Brown 2001). Surveys were also conducted using the visual encounter method along roads and trails for Great Basin gopher snakes. These surveys were conducted during early morning hours. All reptiles observed were captured and identified using the “Identification Guide to the Herptiles of Wyoming” (Parker and Anderson 2001). Reptiles were also captured and identified opportunistically while conducting other surveys that traversed suitable habitat, especially for the Northern Plateau and Tree lizards.

## *Mammal Surveys*

The methods used for mammal surveys include trapping, scat surveys, spotlighting, remote cameras, and track plates. Trap transects were established using live traps to survey for Preble’s and dwarf shrews. Each transect consisted of at least 75 Sherman live traps set in clusters of 5 traps at 25 meter intervals. We also established pitfall trap grids for shrew species. The pitfall trap grid consisted of 25 pitfall traps constructed from #10 cans buried flush with the ground and spaced at 5 meter intervals. Scat surveys were conducted for pygmy rabbits in dense sagebrush along draws and rims. Each transect followed the natural line of the draw and any lagomorph scat found was collected and identified by comparison with known samples. Spotlighting was also conducted in these dense sage habitats both on foot and by vehicle in order to detect pygmy rabbits. Spotlighting transects were established within sagebrush grassland and mixed grassland habitats for Swift Fox. Transects averaged 20 miles in length and was driven between 2300 and 0500 hours; all species observations were recorded. Track plate transects were



also established to survey for swift fox. Transects were approximately 10-12 miles long with track plates placed every ½ mile. Track plates consisted of a 2' x 2' steel plate dusted with an alcohol and talc mixture to create a tracking surface, and baited with canned fish (e.g. mackerel). Remote cameras were placed at every fourth plate along each transect. Track plates were baited and dusted every evening and checked every morning for seven days at each survey site.

## Results

We recorded 11 of 32 rare vertebrate species (Table 3, Figure 7) on BLM lands within the Pinedale Field Office during our surveys. We recorded absence for 21 of 32 rare vertebrate species (Table 4). We recorded two of the targeted mammal species (Uinta ground squirrel and pygmy rabbit), seven of the targeted bird species (sage sparrow, sage thrasher, brewer's sparrow, long-billed curlew, loggerhead shrike, ferruginous hawk, and northern goshawk), two of the targeted amphibians (boreal toad and spotted frog), and none of the targeted reptiles (Appendix D).

Uinta ground squirrels were observed in sagebrush grassland areas in the northern part of the Green River Basin. They were trapped and observed from road kill primarily north of Daniel Junction both east and west of Highway 191. In general it appears that while Uinta ground squirrels are present in the Pinedale Field office they are not as abundant or as widely distributed as the Wyoming ground squirrel. Uinta ground squirrels were only found on BLM lands within the Upper Green River Basin ecological subsection. In comparison, Wyoming ground squirrels and Thirteen-lined ground squirrels were frequently trapped in sagebrush grassland habitats in the southern part of the Pinedale Field Office. Additionally, Golden-mantled ground squirrels were frequently observed and occasionally captured in rocky high elevation areas.

Pygmy rabbits were observed in areas with tall and dense sagebrush in the south and eastern portions of the Pinedale Field Office, including Two Buttes Reservoir, Olson Ranch, and Square Top. Pygmy rabbits were also observed at night in areas with very little tall or dense sagebrush cover (e.g. Squaretop). These night observations appeared to be in habitats atypical of those used by Pygmy Rabbits in other parts of the intermountain west. Desert cottontail and White-tailed jackrabbits were the most common lagomorphs observed during field surveys throughout the Pinedale Field Office.

Dwarf shrews were not captured despite approximately 1500 trap nights from six different trap transects. This species is possibly present within the Pinedale Field Office boundary at higher elevations in the Wyoming and Wind River Ranges primarily on U.S. Forest Service lands. This species is commonly trapped in open talus slopes in the mountains of western Wyoming. Preble's shrews were also not captured during approximately 3800 trap nights from 16 different trap transects. It is unlikely that this species is present in the Pinedale Field Office. However, currently there is very little information on Preble's shrew in Wyoming, and its distribution could be much greater than is currently documented. The only known records in Wyoming are from Park County in Yellowstone National Park and Lincoln County in the Cavanaugh Peak area

(10 miles SW of Kemerer). Small mammal species captured during live trapping include deer mouse, bushy-tailed woodrat, northern grasshopper mouse, western harvest mouse, western jumping mouse, least chipmunk, meadow vole, and sagebrush vole.

Signs of pocket gopher activity were very rare in habitats associated with the two sensitive species of pocket gophers (Wyoming pocket gopher and Idaho pocket gopher). The Wyoming pocket gopher prefers dry ridgetops and is often associated with gravelly loose soils and greasewood (Clark and Stromberg 1987). Historical records indicate that this species is extremely rare outside of Sweetwater and Carbon Counties in Wyoming. Trapping on the Pinedale Field Office resulted in no Wyoming Pocket Gopher observations. The Idaho pocket gopher prefers shallow stony soils, and frequently is observed sympatrically with Northern pocket gophers which prefer deeper fine grained soils. Signs of pocket gopher activity were observed in areas with fine grained soils, and we captured only Northern pocket gophers in these areas. Trapping on the Pinedale Field Office resulted in no Idaho pocket gopher observations. Historical records indicate that Idaho pocket gophers have been observed in Sublette County, and this species is possibly present on BLM lands in the Pinedale Field Office but at significantly lower density than the Northern pocket gopher.

Swift fox were not observed in the Pinedale Field Office despite extensive spotlighting surveys and track plate transects. There is not suitable grassland habitat on BLM lands in the Pinedale Field Office for Swift Fox. The majority of the habitat on BLM lands consists of shrub-steppe plants that are too tall to provide easy visibility of predators. Swift Fox prefer open grassland habitats that allow them to see and avoid predators (Olsen et al 1997). It is unlikely that Swift fox are present on the Pinedale Field Office.

Preliminary surveys for bats were conducted and we determined that a more intensive survey is required. Intensive surveys will target areas within the Pinedale Field Office identified during summer of 2002 including wetlands, riparian forests, and foothills cliffs that have a high probability of supporting bat populations. These surveys will be conducted during the summer 2003 field season, and an addendum to this report will be submitted by November 1, 2003 detailing the results.

Among bird species, we observed Brewer's sparrow, sage sparrow, sage thrasher, loggerhead shrike, long-billed curlew, ferruginous hawk, and northern goshawk (Appendix D). Brewer's sparrow, sage sparrow, and sage thrasher were frequently observed in sagebrush-grassland habitats. They were most abundant in areas characterized by taller sagebrush and less common in areas dominated by low sagebrush, greasewood, or grasses. Brewer's sparrows and sage sparrows were almost always found to occur together. Both of these species were abundant in the southern portion of the Pinedale Field Office (Appendix D). Loggerhead shrikes were observed in areas characterized by tall sagebrush, willows on the edge of pastures, or patches of open mixed grass within sagebrush. Shrikes were not commonly observed despite extensive surveys throughout the BLM lands in the Pinedale Field Office. Long-billed curlew were observed in sagebrush grassland habitat across the northern parts of the Pinedale Field Office, and were commonly observed feeding near irrigated pastures on private land near

the Green, New Fork and East Fork Rivers. Ferruginous hawks were infrequently observed during road transect surveys; however they were observed in sagebrush grassland habitats across the entire field office. Northern goshawks were observed on both the eastern and western edges of the Pinedale Field Office in the foothills of the Wyoming and Wind River Ranges respectively. They were observed within mature conifer forests, typically dominated by lodgepole pine or a mature spruce-fir mix.

Anecdotal observations from other biologists indicate that Burrowing owls are present in low numbers on the Pinedale Field office and have been observed east of Square Top in a white-tailed prairie dog colony, and also along the Emigrant Trail North of Highway 351. It is therefore likely that this species is present in the Pinedale Field Office despite no positive records from the surveys conducted by WYNDD during 2002. Burrowing owls typically inhabit mixed or shortgrass prairie habitat often in association with prairie dog colonies. While white-tailed prairie dog colonies are present on the Pinedale Field Office, there is very little true grassland habitat present. This may limit the populations of burrowing owls on the Pinedale Field Office.

Neither yellow-billed cuckoo nor Virginia's warbler were observed and it is our impression that there is not suitable habitat for these species on the Pinedale Field Office. In general, yellow-billed cuckoos prefer relatively large tracts of deciduous broad-leaved woodland with thick, scrubby undergrowth usually along watercourses. In Wyoming yellow-billed cuckoos generally select relatively large stands of cottonwood-willow habitat below 7,000 feet. This habitat is limited in Wyoming, potentially occurring in scattered fragments along the Bighorn, Powder, Tongue, Cheyenne, Belle Fourche, Little Missouri, Laramie and North Platte rivers. Virginia's warblers prefer relatively dense thickets of mountain mahogany and open pinyon-juniper, ponderosa and scrub oak habitats in foothills and montane areas. This habitat is limited in Wyoming to the southwestern part of the state bordering Utah and northeastern Colorado near Flaming Gorge Reservoir.

White-faced ibis were not observed on BLM lands within the Pinedale Field Office, but they were observed on private lands along the Green River within the Pinedale Field Office boundary. It is likely that this species is present and occasionally uses wetland and riparian forest habitats along the major rivers in the area.

Trumpeter swans were also not observed on BLM lands, but were occasionally observed on private lands along the Green and New Fork Rivers within the field office boundary. It is likely that Trumpeter swans are present and occasionally use wetlands within the field office.

Peregrine falcons were not observed on BLM lands within the Pinedale Field Office, but they were observed on U.S. Forest Service land adjacent to the BLM lands. It's Likely that Peregrine falcons are present in the Pinedale Field Office.

Boreal toad and spotted frog (Appendix D) are the only sensitive amphibian species observed in the Pinedale Field Office. Western chorus frogs were commonly observed in most wetlands along the Green and New Fork Rivers.

Boreal toads were observed in four different drainages on BLM lands, primarily in wetlands along small streams with abundant willow cover and emergent vegetation. The Marsh Creek area appeared to be the most productive site for boreal toads and was also the only site where spotted frogs were observed. Marsh Creek is a breeding site for both of these species.

Northern leopard frog and Great Basin spadefoot were not detected anywhere within the Pinedale Field Office. It is possible that both of these species are present since there are historical records and recent anecdotal evidence of their presence from other biologists.

No targeted reptiles were observed during these surveys. It is unlikely that either the northern plateau lizard or the northern tree lizard are present in the Pinedale Field Office. These species are limited to extreme southwestern Wyoming, and it appears that much of the Pinedale Field Office is too high in elevation for these species to persist. The Great Basin gopher snake is also unlikely to be present in the Pinedale Field Office. The high elevation seems to be a limiting factor for this species as well. Although we observed none, the rubber boa is likely to be present in the Pinedale Field Office. Other biologists have recently reported rubber boas, and there is suitable habitat for this species within the field office.

In addition to the targeted rare vertebrate species observed during field surveys we also recorded other species encountered opportunistically during surveys and in route to survey areas. All together we recorded 146 vertebrate species on the BLM lands in the Pinedale Field Office (34 mammals, 105 birds, 4 amphibians, and 3 reptiles) during May to August 2002. A complete list of these species is recorded in Appendix C.

We were able to conduct complete surveys for 28 of the 32 species targeted by this investigation during the 2002 field season. Preliminary surveys for the targeted bat species were conducted and sites with high potential for bat activity were identified. Complete surveys of these areas will be conducted during the summer of 2003 in conjunction with surveys of bats planned for Grand Teton and Yellowstone National Parks. An addendum to this report will be prepared based on these bat surveys.

## **Discussion**

These surveys focused on collecting presence and absence data on species from the Wyoming BLM Sensitive Species List. We were able to positively determine presence for several sensitive species, however it is not possible to absolutely determine absence when species are not observed. Therefore, we developed a scale indicating our confidence in whether a species is present on the Pinedale Field Office (Table 4). This

scale is broken down into four categories defining our confidence levels; 1) Positive Presence- species was observed on BLM land 2) Likely Presence- species observed on non-BLM land within the Pinedale Field Office boundary 3) Possibly Present- species not observed during field surveys, but anecdotal evidence from other biologists suggests species is present 4) Unlikely to be Present- species not observed during field surveys, and evaluation of available habitat suggests that species would be out of its range. This scale allows us to evaluate the results of this survey, and provide some relative confidence levels in the results detailed above. This scale is also useful for evaluating the strength of the results from these surveys, since some species which were not observed during these surveys may still be present on the Pinedale Field Office at low densities.

The results of these surveys represent information on the distribution of sensitive species and their associated habitats within the Pinedale Field Office on BLM owned lands. This information can be referenced in any future management actions on the Pinedale Field Office to determine if these actions may affect populations of sensitive species. Future surveys for sensitive species in the Pinedale Field Office will also allow us to measure any affects of ongoing activities in the Pinedale Field Office on these sensitive species. This continued effort is highly recommended in order to make the most use out of the data collected during 2002.

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## Tables

**Table 1:** List of species from Wyoming BLM Sensitive Species List selected for surveys.

Common Name	Scientific Name	Habitat Notes
Boreal Toad	<i>Bufo boreas boreas</i>	Boreal toads can be found in and near permanent (or semi-permanent) montane wetlands that have shallow areas for breeding and egg laying.
Northern Leopard Frog	<i>Rana pipiens</i>	Found near permanent water in areas up to about 9,000 feet. Lower elevation sites are usually swampy cattail marshes and higher ones tend to be beaver ponds.
Columbia Spotted Frog [Spotted frog] (statewide)	<i>Rana luteiventris [Rana pretiosa]</i>	Spotted frogs can be found in ponds, wetlands, and small streams from mountain foothills to high elevation conifer forest, particularly where these water bodies are permanent.
Great Basin Spadefoot Toad	<i>Spea intermontana</i>	Pinion-Juniper woodlands, sagebrush, and desert shrublands. Ranges from the bottoms of rocky canyons to broad dry basins and stream floodplains.
Northern Plateau Lizard <sup>a</sup>	<i>Sceloporus undulatus elongatus</i>	The northern plateau lizard is found near rocky outcrops and canyon walls in sagebrush communities. It is often found in association with the sagebrush lizard.
Northern Tree Lizard <sup>a</sup>	<i>Urosaurus ornatus</i>	The northern tree lizard can be found among rocky cliffs and boulders (where it frequents vertical surfaces) in sagebrush deserts.
Rubber Boa <sup>a</sup>	<i>Charina bottae</i>	Found in foothills and lower montane areas, with abundant hiding places (e.g., flat rocks, logs, rodent burrows) and nearby water. Regionally rare, but can be abundant in specific localities.
Great Basin Gopher Snake <sup>a</sup>	<i>Pituophis melanoleucus deserticola</i>	Great Basin gopher snakes inhabit sagebrush communities in arid habitats in southwestern Wyoming.
Ferruginous Hawk	<i>Buteo regalis</i>	Open grasslands, rangelands and agricultural fields
American Peregrine Falcon	<i>Falco peregrinus anatum</i>	Mountainous zones or cliffs near large lakes and rivers
Long-billed Curlew	<i>Numenius americanus</i>	Meadows, pastures, shorelines, and marshes
Sage Thrasher	<i>Oreoscoptes montanus</i>	Sagebrush flats and shrublands in the lower foothills and lower montane
Loggerhead Shrike	<i>Lanius ludovicianus</i>	Open areas with shrublands and grasslands
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Deciduous woods and thickets, usually along large streams
Burrowing Owl	<i>Athene cucularia [Speotyto cucularia]</i>	Plains and basins, often associated with prairie dog towns
Virginia's Warbler <sup>a</sup>	<i>Vermivora virginiae</i>	Riparian woodlands and brushy slopes
Sage Sparrow	<i>Amphispiza belli</i>	Medium to tall sagebrush shrubland
Brewer's Sparrow	<i>Spizella breweri</i>	Sagebrush foothills and medium-height sagebrush in basins. Also, mountain mahogany hills.
Dwarf Shrew	<i>Sorex nanus</i>	Historically, found in alpine rubble slopes and conifer forests above 4,000 m. Sometimes found in prairie and pinyon-juniper at lower elevations.
Preble's Shrew <sup>a</sup>	<i>Sorex preblei</i>	Potentially found in a wide range of habitats and elevations, but is only rarely caught and habitat associations are not well known. Presumably found in wet habitats in lower elevation montane zones.
Long-eared Myotis	<i>Myotis evotis</i>	Found in conifer forests, especially ponderosa pine. Forage over water holes and possible openings in conifer forest. Roosts: caves, buildings, mines.



Common Name	Scientific Name	Habitat Notes
Fringed Myotis	<i>Myotis thysanodes</i>	Found in mid-elevation grasslands, deserts, woodlands and in higher forests. Roosts: caves, mines, rock crevices, buildings.
Spotted Sat	<i>Euderma maculatum</i>	Cliff roosting, generally near perennial water in a variety of habitats (including desert, shrub-steppe, and evergreen forest).
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i> [ <i>Plecotus townsendii</i> ]	Hibernates and day-roosts in caves and mines and will use buildings as day roosts. Typical habitat includes desert shrublands, pinyon-juniper woodlands, and dry conifer forests, generally near riparian or wetland areas.
Pygmy Rabbit	<i>Brachylagus idahoensis</i> [ <i>Sylvilagus idahoensis</i> ]	Limited to tall, dense sagebrush stands. Sufficiently tall sagebrush often occurs in intermittent riparian areas.
Wyoming Pocket Gopher	<i>Thomomys clusius</i> [ <i>Thomomys talpoides</i> ]	Dry upland areas (ridgetops, etc.) characterized by loose, gravel-like soil. Endemic to Wyoming, they are often observed near Bridger's Pass.
Idaho Pocket Gopher	<i>Thomomys idahoensis</i> [ <i>Thomomys talpoides</i> ]	Found in areas with shallow, rocky soil (in contrast to northern pocket gopher, which likes deeper, non-rocky soils).
Uinta Ground Squirrel <sup>a</sup>	<i>Spermophilus armatus</i>	Meadows, edges of fields, sagebrush/grasslands near green vegetation; up to 8000' elevation
Swift Fox	<i>Vulpes velox</i>	Swift foxes occupy shortgrass prairie, but can be found in sage-grasslands. They are particularly found in sparsely vegetated areas such as prairie dog towns.

*a: indicates species of special management concern that are not on the BLM Sensitive Species List.*

**Table 2:** General habitat types associated with selected species from the Wyoming BLM Sensitive Species List.

Habitat Type	Description
Wetlands	Ponds, marshes, lakes, streams, and rivers
Riparian	Riparian gallery forest (e.g. cottonwoods)
Dense Sagebrush	Basin big sagebrush along draws and rims
Cliff	Rock outcrops, or foothills canyons
Grassland	Patches of true grassland in sagebrush mix
Prairie Dog	Large active white-tailed prairie dog colonies
Sagebrush grassland	Sagebrush dominated with grass mix
Conifer	Lodgepole pine dominated conifer mix

**Table 3:** Positive occurrence data for rare vertebrate species in the Pinedale Field Office.

<b>Mammals</b>	<b>Birds</b>	<b>Amphibians</b>	<b>Reptiles</b>
Uinta Ground Squirrel	Sage Sparrow	Boreal Toad	
Pygmy Rabbit	Brewer's Sparrow	Spotted Frog	
<i>Long-eared Myotis*</i>	Sage Thrasher		
<i>Fringed Myotis*</i>	Long-billed Curlew		
<i>Spotted Bat*</i>	Loggerhead Shrike		
<i>Townsend's Big-eared Bat*</i>	Ferruginous Hawk		
	Northern Goshawk		

*\*Surveys to be conducted in the summer of 2003.*

**Table 4:** Negative occurrence data for rare vertebrate species in the Pinedale Field Office

<b>Mammals</b>	<b>Birds</b>	<b>Amphibians</b>	<b>Reptiles</b>
Dwarf Shrew	Yellow-billed Cuckoo	Leopard Frog	Northern Plateau Lizard
Preble's Shrew	Virginia's Warbler	Great Basin Spadefoot	Northern Tree Lizard
Wyoming Pocket Gopher	White-faced Ibis		Rubber Boa
Idaho Pocket Gopher	Trumpeter Swan		Great Basin Gopher Snake
Swift Fox	Peregrine Falcon		
	Burrowing Owl		

**Table 5:** Summary of confidence in presence-absence for sensitive species in the Pinedale Field Office.

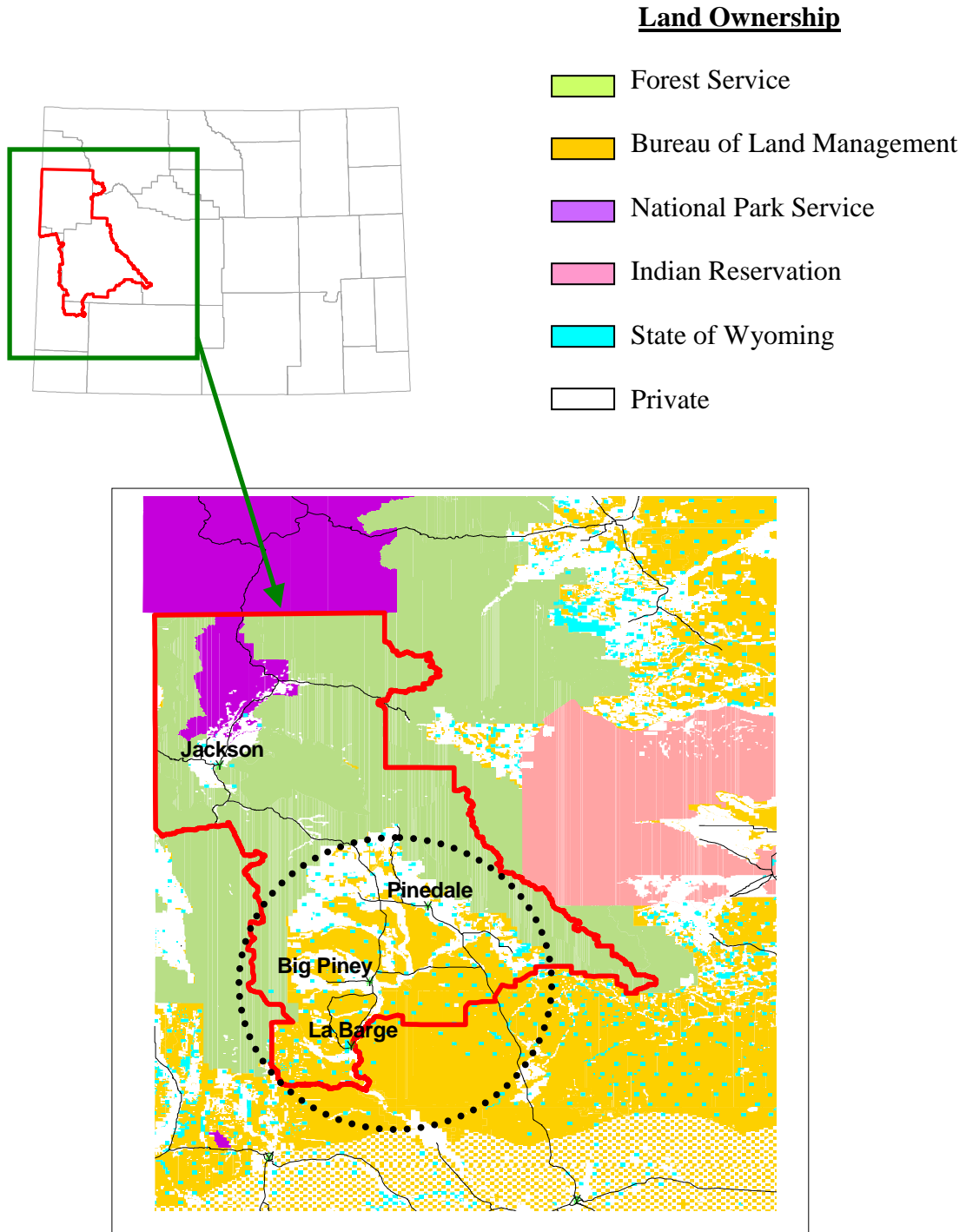
<b>Species</b>	<b>Classification</b>
Boreal Toad	Present
Spotted Frog	Present
Northern Leopard Frog	Possible
Great Basin Spadefoot	Possible
Northern Plateau Lizard	Unlikely
Northern Tree Lizard	Unlikely
Rubber Boa	Possible
Great Basin Gopher Snake	Unlikely
Yellow-billed Cuckoo	Unlikely
Sage Sparrow	Present
Long-billed Curlew	Present
Sage Thrasher	Present
Brewer's Sparrow	Present
Ferruginous Hawk	Present
Loggerhead Shrike	Present
Burrowing Owl	Possible
White-faced Ibis	Possible
Trumpeter Swan	Likely
Peregrine Falcon	Likely
Northern Goshawk	Present
Virginia's Warbler	Unlikely
Dwarf Shrew	Possible
Long-eared Myotis	*
Fringed Myotis	*
Spotted Bat	*
Townsend's Big-eared Bat	*
Pygmy Rabbit	Present
Wyoming Pocket Gopher	Possible
Idaho Pocket Gopher	Possible
Swift Fox	Unlikely
Preble's Shrew	Possible
Uinta Ground Squirrel	Present

\*Formal surveys will be conducted during summer of 2003.

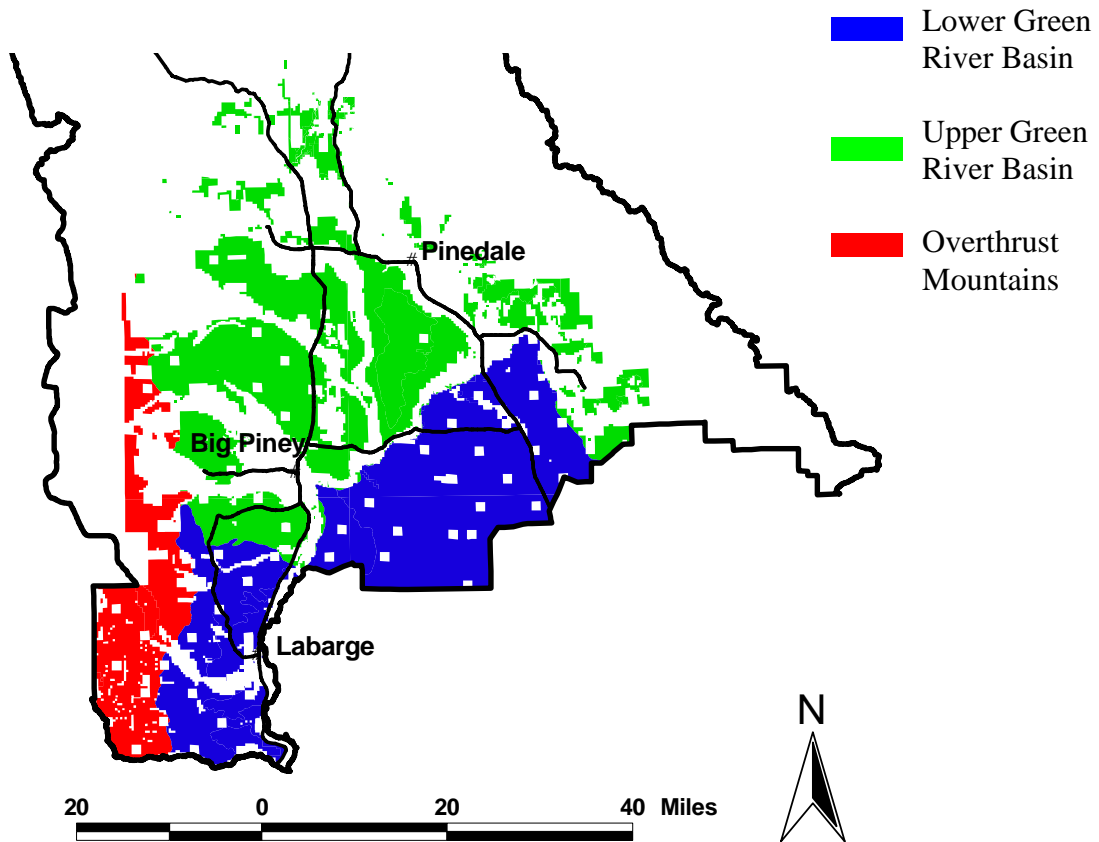
**Classifications:** 1) **Present**= species observed on BLM land, 2) **Likely** = species observed on non-BLM land within field office boundary, 3) **Possible** = species not observed during surveys but recently observed by other biologists, 4) **Unlikely** = species not observed during surveys and evaluation of habitat suggests that species would be out of its range.

## Figures

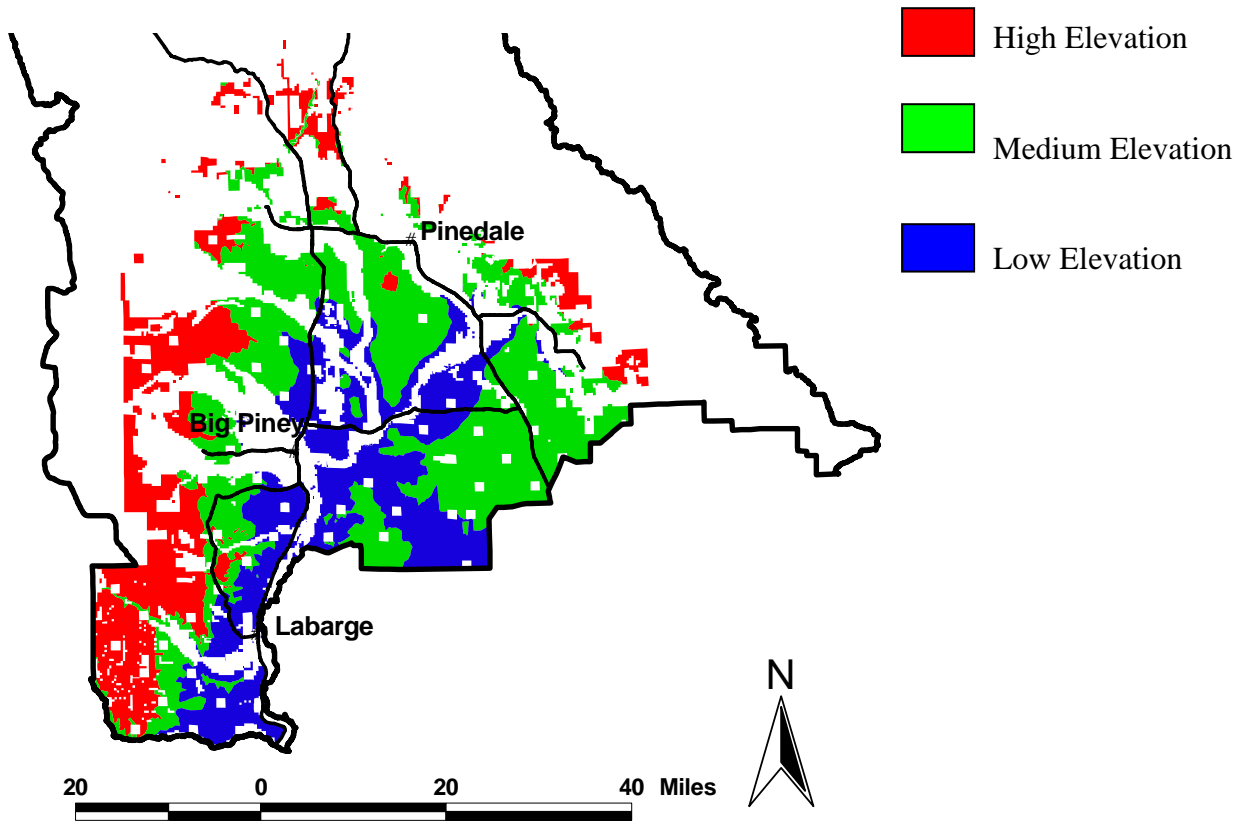
**Figure 1:** Study area in the Pinedale Field Office of the BLM, Wyoming (Dotted line encloses the general area surveyed).



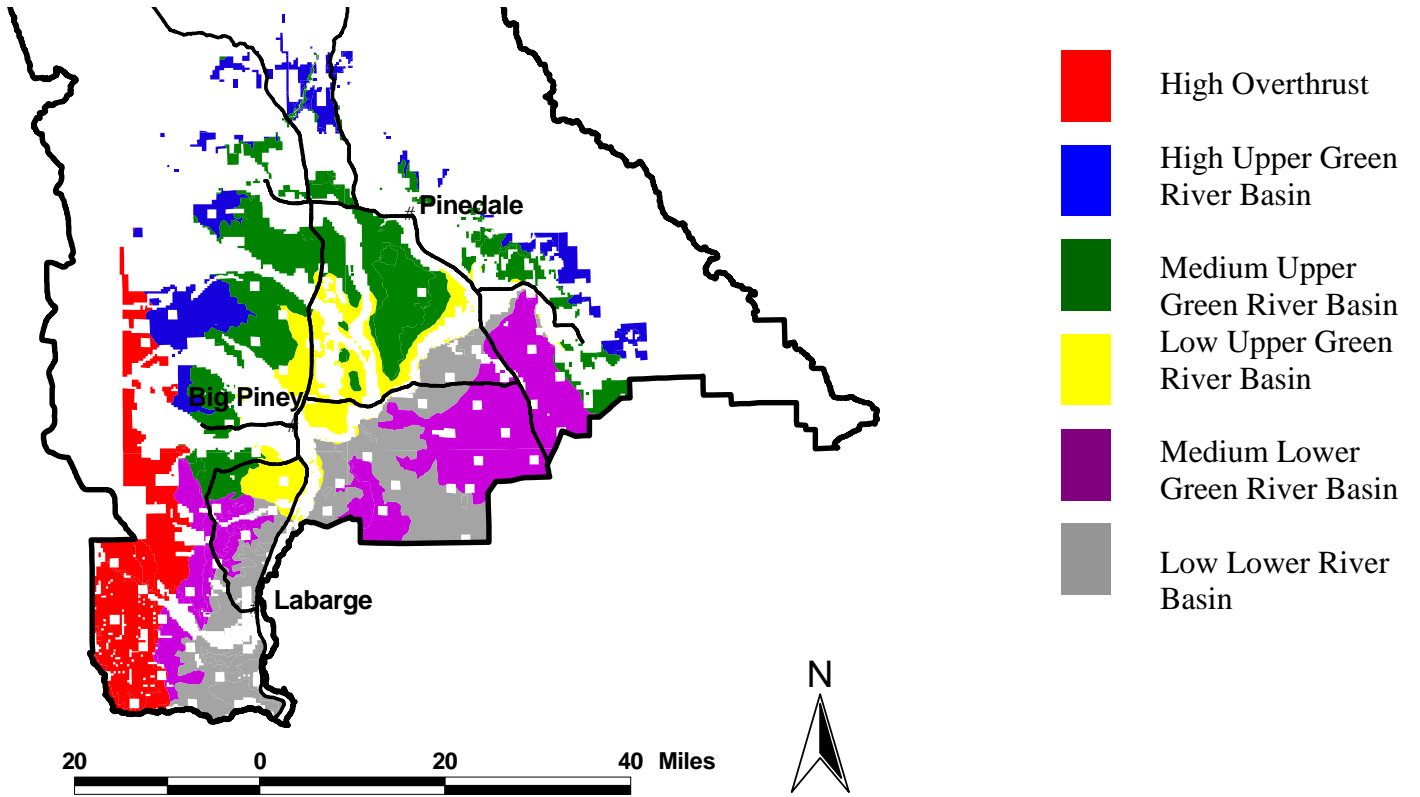
**Figure 2:** Map of the ecological subsections (Upper Green River Basin, Lower Green River Basin, and Overthrust Mountains) on BLM lands in the Pinedale Field Office, Wyoming (Reiner and Thurston 1996)



**Figure 3:** Map of the elevation zones (high=8000-7666', medium= 7666-7333', low= 7333,-7000') on BLM lands in the Pinedale Field Office, Wyoming.



**Figure 4:** Map of macroenvironments defined by overlay of ecological subsections and elevation zones in the Pinedale Field Office.



**Figure 5:** Photographs of general habitat types associated with sensitive species selected for surveys on the Pinedale Field Office.



**Sagebrush Grassland**



**Grassland**



**Tall and Dense Sagebrush**



**White-tailed Prairie Dog Colony**



**Riparian Forest**



**Wetland**



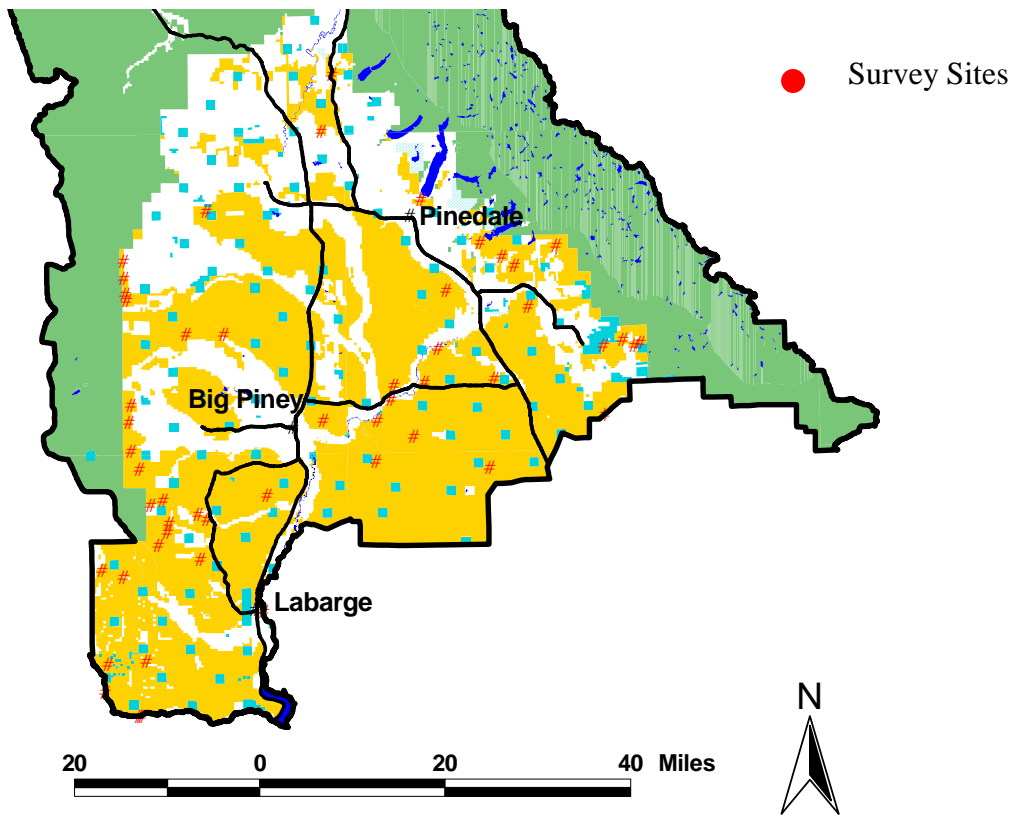


**Foothills Cliffs**

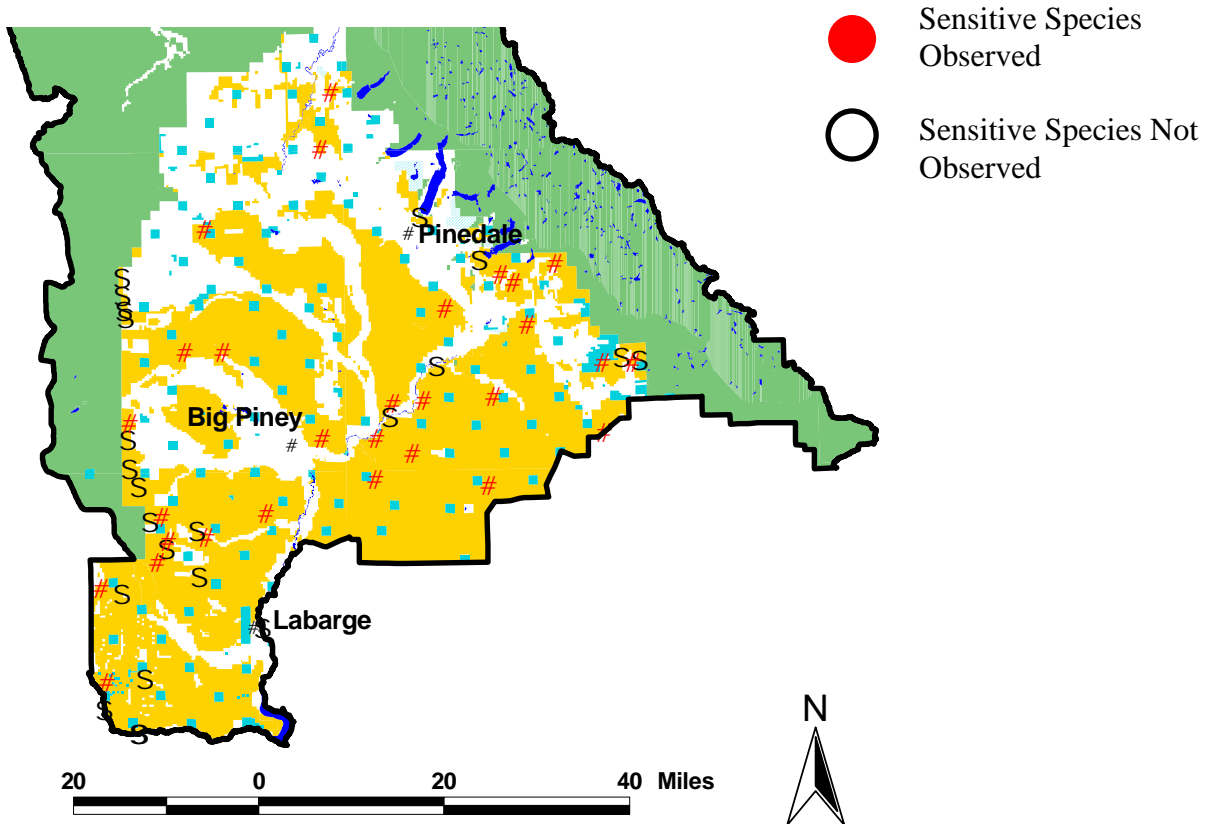


**Conifer Forest**

**Figure 6:** Map of survey sites in Pinedale BLM field office, Wyoming.



**Figure 7:** Map of positive occurrence observations for sensitive species on the Pinedale Field Office, Wyoming.



**BLM WYOMING STATE DIRECTOR'S SENSITIVE SPECIES LIST**

**(ANIMALS AND PLANTS)**

September 2002

Species Common Name	Scientific Name	Habitat	Designation and Ranking of others: WY Natural Heritage Program; Forest Service (FS) Regions 2 and 4; Wyoming Game and Fish	Occurrence by BLM Field Office <sup>2</sup>										
				WFO	CYFO	RFO	RSFO	LFO	CFO	BFO	NFO	KFO	PFO	
<b>MAMMELS</b>														
Myotis, Long-eared	<i>Myotis evotis</i>	Conifer and deciduous forests, caves and mines	G5/S1B, S1?N, NSS2, CA, NV, ID, OR/WA, AZ	X	X	X	X	X	X	X	X	X	X	X
Myotis, Fringed	<i>Myotis thysanodes</i>	Conifer forests, woodland-chaparral, caves and mine	G5/S1B, S1N, FSR2, TBNG, NSS2, CO, NV, ID, UT, MT, WA, AZ			X	X		X	X	X			
Bat, Spotted	<i>Euderma maculatum</i>	Cliffs over perennial water, basin-prairie shrub	G4/S1B, SZ?N FSR2, FSR4, NSS2, ID, CO, UT, MT, OR/WA, AZ, CA	X	X		X	X	X	X				
Bat, Townsend's Big-eared	<i>Corynorhinus townsendii</i>	Forests, basin-prairie shrub, caves and mines	G4/S1B, S2N, FSR2, TBNG, FSR4, NSS2, ID, CO, UT, MT, OR/WA	X	X	X	X	X	X	X				
Rabbit, Pygmy	<i>Brachylagus idahoensis</i>	Basin-prairie and riparian shrub	G4/S2, NSS3, ID, MT, OR/WA, IUCN LR(nt)				X						X	X
Prairie Dog, White-tailed	<i>Cynomys leucurus</i>	Basin-prairie shrub, grasslands	G4/S2S3, NSS3, MT (Petitioned 7/11/02)	X	X	X	X	X	X				X	X
Pocket Gopher, Wyoming	<i>Thomomys clusius</i>	Meadows with loose soil	G2/S1S2, NSS4, FSR2			X	X							
Pocket Gopher, Idaho	<i>Thomomys idahoensis</i>	Shallow stony soils	G4/S2?, NSS3, IUCN- LR(nt)				X						X	X
Fox, Swift	<i>Vulpes velox</i>	Grasslands	G3/S2A3, FSR2, MT (Removed from Federal Candidate list 01/08/01)	X	X	X	X	X	X	X	X	X		
<b>BIRDS</b>														
Ibis, White-faced	<i>Plegadis chihi</i>	Marshes, wet meadows	G5/S1B, SZN, FSR2, TBNG, NSS3, UT, MT, CO, AZ	X	X	X	X	X	X	X	X	X	X	X
Swan, Trumpeter	<i>Cygnus buccinator</i>	Lakes, ponds, rivers	G4/S1B, S2N, FSR2, TBNG, FSR4, NSS2, ID, MT	X	X	X	X	X	X	X	X	X	X	X
Goshawk, Northern	<i>Accipter gentilis</i>	Conifer and deciduous forests	G5/S23B, S4N, FSR2, TBNG, FSR4, NSS4, ID, CO, UT, MT, OR	X	X	X	X	X	X	X	X	X	X	X
Hawk, Ferruginous	<i>Buteo regalis</i>	Basin-prairie shrub, grassland, rock outcrops	G4/S3B, S3N, FSR2, TBNG, NSS3, ID, CO, MT, CA, OR	X	X	X	X	X	X	X	X	X	X	X

Species Common Name	Scientific Name	Habitat	Designation and Ranking of others: WY Natural Heritage Program; Forest Service (FS) Regions 2 and 4; Wyoming Game and Fish	Occurrence by BLM Field Office <sup>2</sup>									
				WFO	CYFO	RFO	RSFO	LFO	CFO	BFO	NFO	KFO	PFO
BIRDS (Continued)													
Falcon, Peregrine	<i>Falco peregrinus</i>	Tall cliffs	G4/T3/S1B, S2N, FSR2, TBNG, NSS3, UT, ID (Removed from Federal Endangered list 8/25/1999)	X	X	X	X	X	X	X		X	X
Sage-grouse, Greater	<i>Centrocercus urophasianus</i>	Basin-prairie shrub, mountain- foothill shrub	G5/S3, TBNG, ID, CO, UT, CA, NV, MT (Petitioned 6/8/2002)	X	X	X	X	X	X	X	X	X	X
Grouse, Columbian Sharp-tailed	<i>Tympanuchus phasianellus columbianus</i>	Grasslands	G4/T3/S1, FSR2, FSR4, ID, CO, UT, MT (Removed from federal petitioned list 10/11/2000)			X							
Curlew, Long- billed	<i>Numenius americanus</i>	Grasslands, plains, foothills, wet meadows	G5/S3B, SZN FSR2, TBNG, NSS3, ID, CO, UT, MT	X	X	X	X	X	X	X	X	X	X
Cuckoo, Yellow- billed	<i>Coccyzus americanus</i>	Open woodlands, streamside willow and alder groves	G5/S2B, SZN, FSR2, TBNG, NNS2, UT, ID, (Petitioned 7/25/2001)	X	X	X	X	X	X	X	X	X	X
Owl, Burrowing	<i>Athene cunicularia</i>	Grasslands, basin-prairie shrub	G4/S3B, SZN, FSR2, TBNG, NSS4, ID, MT, AZ, CA, OR	X	X	X	X	X	X	X	X	X	X
Thrasher, Sage	<i>Oreoscoptes montanus</i>	Basin-prairie shrub, mountain- foothill shrub	G5/S3B,SZN, PIF Priority	X	X	X	X	X	X	X	X	X	X
Shrike, Loggerhead	<i>Lanius ludovicianus</i>	Basin-prairie shrub, mountain- foothill shrub	G5/S4B,SZN, FSR2, TBNG, ID, MT, AZ (Removed from candidate list 2/28/1996)	X	X	X	X	X	X	X	X	X	X
Sparrow, Brewer's	<i>Spizella breweri</i>	Basin-prairie shrub	G5/S3B,SZN, TBNG, PIF Priority, ID	X	X	X	X	X	X	X	X	X	X
Sparrow, Sage	<i>Amphispiza belli</i>	Basin-prairie shrub, mountain- foothill shrub	G5/S3B,SZN, PIF Priority, ID, MT, OR	X	X	X	X	X	X	X	X	X	X
Sparrow, Baird's	<i>Ammodramus bairdii</i>	Grasslands, weedy fields	G4/S1B, SZN, FSR2, TBNG, MT	X	X	X		X	X	X	X		
FISH													
Chub, Roundtail	<i>Gila robusta</i>	CO River drainage, mostly large rivers, also streams and lakes	G2G3/S2?, NSS1, CO, UT			X	X					X	X
Chub, Leatherside	<i>Gila copei</i>	Bear, Snake and Green drainages, clear, cool streams and pools	G3G4/S2, NSS1, ID, UT				X					X	X
Sucker, Bluehead	<i>Catostomus discobolus</i>	Bear, Snake and Green drainages, all waters	G4/S2S3, NSS1, CO, UT			X	X					X	X

Species Common Name	Scientific Name	Habitat	Designation and Ranking of others: WY Natural Heritage Program; Forest Service (FS) Regions 2 and 4; Wyoming Game and Fish	Occurrence by BLM Field Office <sup>2</sup>									
				WFO	CYFO	RFO	RSFO	LFO	CFO	BFO	NFO	KFO	PFO
FISH (Continued)													
Sucker, Flannelmouth	<i>Catostomus latipinnis</i>	CO River drainage, large rivers, streams and lakes	G3G4/S3, NSS1, CO, UT			X	X					X	X
Trout, Yellowstone Cutthroat	<i>Oncorhynchus clarki bowieri</i>	Yellowstone drainage, small mountain streams and large rivers	G4T2/S2, FSR2, NSS3, ID, MT (Removed from petitioned list 2/23/2001)	X	X			X			X		X
Trout, Colorado River Cutthroat	<i>Oncorhynchus clarki pleuriticus</i>	CO River drainage, clear mountain streams	G4T2T3/S2, FSR2, FSR4, NSS2, CO, UT, (Petitioned 12/19/1999)			X	X					X	X
Trout, Bonneville Cutthroat	<i>Oncorhynchus clarki utah</i>	Bear R. drainage, clear mountain streams	G4T2/S1S2, NSS2, FSR4, ID, UT, (Removed from petitioned list 10/9/2001)									X	
Trout, Fine-spotted Snake River Cutthroat	<i>Oncorhynchus clarki spp</i>	Snake R. drainage, clear, fast water	G4T1T2Q/S1, NSS4, FSR4, Petitioned									X	X
REPTILES													
Rattlesnake, Midget Faded	<i>Crotalus viridis concolor</i>	Mountain foothills shrub, rock outcrop	G5T3/S1S2, CO				X						
AMPHIBIANS													
Frog, Northern Leopard	<i>Rana pipiens</i>	Beaver ponds, permanent water in plains and foothills	G5/S3, FSR2, TBNG, NSS4, CO, ID, MT	X	X	X	X	X	X	X	X	X	X
Spadefoot, Great Basin	<i>Spea intermontana</i>	Spring seeps, permanent and temporary waters	G5/S4, NSS4, CO			X	X	X				X	
Toad, Boreal (Northern Rocky Mountain population)	<i>Bufo boreas boreas</i>	Pond margins, wet meadows, riparian areas	G4T4/S2,NSS2, FSR2, FSR4, UT, ID		X	X	X	X				X	X
Frog, Spotted	<i>Ranus pretiosa (lutiventris)</i>	Ponds, sloughs, small streams	G4/S2S3, FSR2, FSR4, NSS4, ID, UT, MT		X		X	X		X		X	X
PLANTS													
Meadow Pussytoes	<i>Antennaria arcuata</i>	Moist, hummocky meadows, seeps or springs surrounded by sage/grasslands 4,950-7,900'	G2/S2, FSR4				X	X					X
Laramie Columbine	<i>Aquilegia laramiense</i>	Crevices of granite boulders & cliffs 6,400-8,000'	G2/S2, FSR2			X				?			

Species Common Name	Scientific Name	Habitat	Designation and Ranking of others: WY Natural Heritage Program; Forest Service (FS) Regions 2 and 4; Wyoming Game and Fish	Occurrence by BLM Field Office <sup>2</sup>									
				WFO	CYFO	RFO	RSFO	LFO	CFO	BFO	NFO	KFO	PFO
PLANTS (Continued)													
Small Rock Cress	<i>Arabis pusilla</i>	Cracks/Crevices in sparsely vegetated granite/pegmatite outcrops w/in sage/grasslands 8,000-8,100'	G1/S1 (Removed from Federal Candidate list 10/25/99)				X						
Mystery Wormwood	<i>Artemisia biennis</i> var. <i>diffusa</i>	Clay flats & playas 6,500'	G5T1/S1				P						
Porter's Sagebrush	<i>Artemisia porteri</i>	Sparsely vegetated badlands of ashy or tufaceous mudstone & clay slopes 5,300-6,500'	G2/S2					X	X	X			
Dubois Milkvetch	<i>Astragalus gilviflorus</i> var. <i>purpureus</i>	Barren shale, badlands, limestone, & redbed slopes & ridges 6,900-8,800'	G5T2/S2					X					
Hyattville Milkvetch	<i>Astragalus jejunus</i> var. <i>articulatus</i>	Sparsely vegetated stony ridges & barren red clay slopes 4,900-5,900'	G3T1/S1	X									
Nelson's Milkvetch	<i>Astragalus nelsonianus</i> – or – <i>Astragalus pectinatus</i> var. <i>platyphyllus</i>	Alkaline clay flats, shale bluffs and gullies, pebbly slopes, and volcanic cinders in sparsely vegetated sagebrush, juniper, & cushion plant communities at 5200-7600'	G2/S2, CO			X	X	X	X				
Precocious Milkvetch	<i>Astragalus proimanthus</i>	Cushion plant communities on rocky, clay soils mixed with shale on summits & slopes of white shale hills 6,800-7,200'	G1/S1				X						
Trelease's Milkvetch	<i>Astragalus racemosus</i> var. <i>treleasei</i>	Sparsely vegetated sagebrush communities on shale or limestone outcrops & barren clay slopes at 6500-8200'	G5T2/S1									X	X
Cedar Rim Thistle	<i>Cirsium aridum</i>	Barren, chalky hills, gravelly slopes, & fine textured, sandy-shaley draws 6,700-7,200'	G2Q/S2			X	X	X					X
Ownbey's Thistle	<i>Cirsium ownbeyi</i>	Sparsely vegetated shaley slopes in sage & juniper communities 6,440-8,400'	G3/S2, CO				X						

Species Common Name	Scientific Name	Habitat	Designation and Ranking of others: WY Natural Heritage Program; Forest Service (FS) Regions 2 and 4; Wyoming Game and Fish	Occurrence by BLM Field Office <sup>2</sup>									
				WFO	CYFO	RFO	RSFO	LFO	CFO	BFO	NFO	KFO	PFO
PLANTS (Continued)													
Many-stemmed Spider-flower	<i>Cleome multicaulis</i>	Semi-moist, open saline banks of shallow ponds & lakes with baltic rush & bulrush 5,900'	G2G3/S1, CO							X			
Owl Creek Miner's Candle	<i>Cryptantha subcapitata</i>	Sandy-gravelly slopes & desert ridges on sandstones of the Winds River Formation 4,700-6,000'	G1/S1					X					
Evert's Wafer- Parsnip	<i>Cymopterus evertii</i>	Coarse volcanic soils or sandstone outcrops dominated by cushion plants or sparse shrublands in openings within Rcky Mtn juniper or Limber pine woodlands at 5,900- 10,900'	G2G3/S2S3	?	X								
Williams' Wafer- Parsnip	<i>Cymopterus williamsii</i>	Open ridgetops & upper slopes with exposed limestone outcrops or rockslides 6,000-8,300'	G3/S3	X					X	X			
Wyoming Tansymustard	<i>Descurainia torulosa</i>	Sparsely vegetated sandy slopes at base of cliffs of volcanic breccia or sandstone 8,300-10,000'	FSR4, G1/S1				X						
Weber's Scarlet- Gilia	<i>Ipomopsis aggregata ssp. weberi</i>	Openings in coniferous forests & scrub oak woodlands 8,500-9,600'	G5T1T2Q/S1, FSR2			X							
Entire-Leaved Peppergrass	<i>Lepidium integrifolium var. integrifolium</i>	WY populations occur in sparsely vegetated and seasonally wet clay flats, greasewood communities on clay hummocks, and moist alkaline meadows at 6,200-6,770'	G2T1?/S1									X	
Sidesaddle Bladderpod	<i>Lesquerella arenosa var. agrilliosa</i>	Dry, open rock outcrops of gravel, shale, or limestone & barren, often seleniferous, roadsides 4,200-4,300'	G5T3/S1									X	
Fremont Bladderpod	<i>Lesquerella fremontii</i>	Rocky limestone slopes & ridges 7,000-9,000'	G2/S2					X					
Large-fruited Bladderpod	<i>Lesquerella macrocarpa</i>	Gypsum-clay hills & benches, clay flats, & barren hills 7,200-7,700'	G2/S2				X					X	X

Species Common Name	Scientific Name	Habitat	Designation and Ranking of others: WY Natural Heritage Program; Forest Service (FS) Regions 2 and 4; Wyoming Game and Fish	Occurrence by BLM Field Office <sup>2</sup>										
				WFO	CYFO	RFO	RSFO	LFO	CFO	BFO	NFO	KFO	PFO	
PLANTS (Continued)														
Western Bladderpod	<i>Lesquerella multiceps</i>	Dry, gravelly limestone ridges & slopes in sparse grasslands or cushion plant communities at 8,300- 8,600'	G3/S1										?	
Prostrate Bladderpod	<i>Lesquerella prostrata</i>	Cushion plant or sparse sage grassland communities on slopes and rims of whitish to reddish or gray limey clays & soft sandstones with a surface layer of fine gravel at elevations of 7,200-7,700'	G3/S1										X	
Absaroka Beardtongue	<i>Penstemon absarokensis</i>	Sparsely vegetated openings on steep slopes of loose volcanic rubble or outcrops of dry andesitic volcanic rock at 5,920-10,000'	G2/S2		X									
Stemless Beardtongue	<i>Penstemon acaulis</i> var. <i>acaulis</i>	Cushion plant or Black sage grassland communities on semi- barren rocky ridges, knolls, & slopes at 5,900-8,200'	G3T2/S1				X							
Gibbens' Beardtongue	<i>Penstemon gibbensii</i>	Sparsely vegetated shale or sandy- clay slopes 5,500-7,700'	G1/S1, CO			X								
Beaver Rim Phlox	<i>Phlox pungens</i>	Sparsely vegetated slopes on sandstone, siltstone, or limestone substrates 6,000-7,400'	G2/S2				X	X					X	X
Tufted Twinpod	<i>Physaria condensata</i>	Sparsely vegetated shale slopes & ridges 6,500-7,000'	G2/S2				X						X	X
Dorn's Twinpod	<i>Physaria dornii</i>	Dry, calcareous-shaley soils on slopes & ridges w/mountain mahogany & rabbitbrush 6,500- 7,200'	G1/S1										X	
Rocky Mountain Twinpod	<i>Physaria saximontana</i> var. <i>saximontana</i>	Sparsely vegetated rocky slopes of limestone, sandstone or clay 5,600- 8,300'	G3T2/S2	X				X						
Persistent Sepal Yellowcress	<i>Rorippa calycina</i>	Riverbanks & shorelines, usu on sandy soils near high-H <sup>2</sup> O line	G3/S2S3	X	X	X		X						



Species Common Name	Scientific Name	Habitat	Designation and Ranking of others: WY Natural Heritage Program; Forest Service (FS) Regions 2 and 4; Wyoming Game and Fish	Occurrence by BLM Field Office <sup>2</sup>										
				WFO	CYFO	RFO	RSFO	LFO	CFO	BFO	NFO	KFO	PFO	
PLANTS (Continued)														
Shoshonea	<i>Shoshonea pulvinata</i>	Shallow, stony calcareous soils of exposed limestone outcrops, ridgetops, & talus slopes 5,900-9,200'	G2G3/S2, MT		X				?					
Laramie False Sagebrush	<i>Sphaeromeria simplex</i>	Cushion plant communities on rocky limestone ridges & gentle slopes 7,500-8,600'	G2/S2			X				X				
Green River Greenthread	<i>Thelesperma caespitosum</i>	White shale slopes & ridges of Green River Formation 6,300'	G1/S1				X							
Uinta Greenthread	<i>Thelesperma pubescens</i>	Sparsely vegetated benches & ridges on coarse, cobbly soils of Bishop Conglomerate 8,200-8,900'	G1/S1, FSR4				X							
Cedar Mtn. Easter Daisy	<i>Townsendia microcephala</i>	Rocky slopes of Bishop Conglomerate 8,500'	G1/S1				X							
Barneby's Clover	<i>Trifolium barnebyi</i>	Ledges, crevices, & seams on reddish -cream Nugget Sandstone outcrops 5,600-6,700'	G1/S1					X						
<b>TOTALS</b>			<b>75 species statewide</b>	<b>26</b>	<b>27</b>	<b>35</b>	<b>47</b>	<b>35</b>	<b>27</b>	<b>24</b>	<b>18</b>	<b>36</b>	<b>33</b>	

## 1 Rankings

### Heritage Program

WYNDD uses a standardized ranking system developed by The Nature Conservancy's Natural Heritage Network to assess the global and statewide conservation status of each plant and animal species, subspecies, and variety. Each taxon is ranked on a scale of 1-5, from highest conservation concern to lowest. Codes are as follows:

G	Global rank: Rank refers to the rangewide status of a species.
T	Trinomial rank: Rank refers to the rangewide status of a subspecies or variety.
S	State rank: Rank refers to the status of the taxon (species or subspecies) in Wyoming. State ranks differ from state to state.
1	Critically imperiled because of extreme rarity (often known from 5 or fewer extant occurrences or very few remaining individuals) or because some factor of a species' life history makes it vulnerable to extinction.
2	Imperiled because of rarity (often known from 6-20 occurrences) or because of factors demonstrably making a species vulnerable to extinction.
3	Rare or local throughout its range or found locally in a restricted range (usually known from 21-100 occurrences).
4	Apparently secure, although the species may be quite rare in parts of its range, especially at the periphery.
5	Demonstrably secure, although the species may be rare in parts of its range, especially at the periphery.
H	Known only from historical records. 1950 is the cutoff for plants; 1970 is the cutoff date for animals.
X	Believed to be extinct.
A	Accidental or vagrant: A taxon that is not known to regularly breed in the state or which appears very infrequently (typically refers to birds and bats).
B	Breeding rank: A state rank modifier indicating the status of a migratory species during the breeding season (used mostly for migratory birds and bats)
N	Nonbreeding rank: A state rank modifier indicating the status of a migratory species during the non-breeding season (used mostly for migratory birds and bats)
ZN or ZB	Taxa that are not of significant concern in Wyoming during breeding (ZB) or non-breeding (ZN) seasons. Such taxa often are not encountered in the same locations from year to year.
U	Possibly in peril, but status uncertain; more information is needed.
Q	Questions exist regarding the taxonomic validity of a species, subspecies, or variety.
?	Questions exist regarding the assigned G, T, or S rank of a taxon.

### State Status

The Wyoming Game and Fish Department has developed a matrix of habitat and population variables to determine the conservation priority of all native, breeding bird and mammal species in the state. Six classes of Native Status Species (NSS) are recognized, of which classes 1, 2, and 3 are considered to be high priorities for conservation attention.

These classes can be defined as follows:

NSS1 Includes species with on-going significant loss of habitat and with populations that are greatly restricted or declining (extirpation appears possible).

NSS2 Species in which (1) habitat is restricted or vulnerable (but no recent or significant loss has occurred) and populations are greatly restricted or declining; or (2) species with on-going significant loss of habitat and populations that are declining or restricted in numbers and distribution (but extirpation is not imminent).

NSS3 Species in which (1) habitat is not restricted, but populations are greatly restricted or declining (extirpation appears possible); or (2) habitat is restricted or vulnerable (but no recent or significant loss has occurred) and populations are declining or restricted in numbers or distribution (but extirpation is not imminent); or (3) significant habitat loss is on-going but the species is widely distributed and population trends are thought to be stable.

### Forest Service

Region 2	Rocky Mountain Region
Region 4	Intermountain Region
TBNG	Thunder Basin National Grassland

### Other BLM states

AZ	Arizona
CO	Colorado
ID	Idaho
MT	Montana
OR/WA	Oregon/Washington
UT	Utah

**IUCN** - International Union for Conservation of Nature, Rodent Specialist Group. North American Red List. **LOWER RISK (LR)** - A taxon is Lower Risk when it has been evaluated, does not satisfy the criteria for any of the categories Critically Endangered, Endangered or Vulnerable. Taxa included in the Lower Risk category can be separated into three subcategories:

1. Conservation Dependent (cd). Taxa which are the focus of a continuing taxon-specific or habitat-specific conservation programme targeted towards the taxon in question, the cessation of which would result in the taxon qualifying for one of the threatened categories above within a period of five years.

2. Near Threatened (nt). Taxa which do not qualify for Conservation Dependent, but which are close to qualifying for Vulnerable.

3. Least Concern (lc). Taxa which do not qualify for Conservation Dependent or Near Threatened.

**PIF** - Partners in Flight, a coalition of federal, state and provincial agencies, private groups, corporations and individuals dedicated to neotropical migratory bird conservation

**Petitioned**- Species which has been petitioned for listing under the Endangered Species Act

## 2 Occurrence by BLM Field Office

WFO	World
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CFYO	Cody
RFO	Rawlins
RSFO	Rock Springs
LFO	Lander
CFO	Casper
BFO	Buffalo
NFO	Newcastle
KFO	Kemmerer
PFO	Pinedale

**For Plants:**

- P** - Indicates occurrence within BLM Field Office area on **Private Land Ownership**
- S** - Indicates occurrence within BLM Field Office area on **State Land Ownership**
- F** - Indicates occurrence within BLM Field Office area on other **Federal Land Ownership**
- ?** - Indicates likely occurrence within BLM Field Office area

**Appendix B:** List of species of management concern in Wyoming that are not addressed by this project because they are currently the focus of other research or are unlikely to occur in the study area.

- Mountain Plover
- Bald Eagle
- Whopping Crane
- Northern (Greater) Sage Grouse
- Black-footed Ferret
- Gray Wolf
- Grizzly Bear
- Canada Lynx
- White-tailed Prairie Dog
- Midget-faded Rattlesnake
- Columbian Sharp-tailed Grouse

**Appendix C:** List of all vertebrate species observed during summer 2002 field surveys in the Pinedale Field Office on Bureau of Land Management lands.

**Mammals**

Badger  
Beaver  
Bushy-tailed Wood Rat  
Coyote  
Deer Mouse  
Desert Cottontail  
Elk  
Ermine  
Golden-mantled Ground Squirrel  
Least Chipmunk  
Long-tailed Weasel  
Meadow Vole  
Moose  
Mountain Lion  
Mule Deer  
Muskrat  
Northern Grasshopper Mouse  
Northern Pocket Gopher  
Porcupine  
Pronghorn Antelope  
Pygmy Rabbit  
Raccoon  
Red Fox  
Red Squirrel  
Sagebrush Vole  
Striped Skunk  
Thirteen-lined Ground Squirrel  
Uinta Ground Squirrel  
Western Harvest Mouse  
White-tailed Deer  
White-tailed Jackrabbit  
White-tailed Prairie Dog  
Wyoming Ground Squirrel

**Birds**

American Goldfinch  
American Kestrel  
American Robin  
American Wigeon  
Audubon's Warbler  
Bald Eagle  
Bank Swallow  
Barrow's Goldeneye  
Belted Kingfisher  
Black-billed Magpie  
Black-capped Chickadee  
Blue Grosbeak

Blue-gray Gnatcatcher  
Blue Grouse  
Blue-winged Teal  
Brewer's Blackbird  
Brewer's Sparrow  
Brown-headed Cowbird  
Bufflehead  
Canada Goose  
Cassin's Finch  
Chipping Sparrow  
Cinnamon Teal  
Clarks Nutcracker  
Cliff Swallow  
Common Goldeneye  
Common Merganser  
Common Nighthawk  
Common Raven  
Common Snipe  
Common Yellowthroat  
Cordilleran Flycatcher  
Dark-eyed Junco  
Downy Woodpecker  
Dusky Flycatcher  
Eastern Kingbird  
European Starling  
Ferruginous Hawk  
Golden Eagle  
Grasshopper Sparrow  
Gray Jay  
Great Blue Heron  
Great-horned Owl  
Green-tailed Towhee  
Hairy Woodpecker  
Hermit Thrush  
Horned Lark  
House Wren  
Killdeer  
Lark Bunting  
Lazuli Bunting  
Least Flycatcher  
Least Sandpiper  
Loggerhead Shrike  
Long-billed Curlew  
Magnolia Warbler  
Mallard  
Merlin  
Mountain Bluebird

**Birds (con.)**

Mountain Chickadee  
Mourning Dove  
Northern Flicker  
Northern Goshawk  
Northern Harrier  
Northern Mockingbird  
Northern Rough-winged Swallow  
Olive-sided Flycatcher  
Orange-crowned Warbler  
Osprey  
Pine Siskin  
Pink-sided Junco  
Prairie Falcon  
Red-breasted Nuthatch  
Red-napped Sapsucker  
Red-tailed Hawk  
Red-winged Blackbird  
Rock Wren  
Ruby-crowned kinglet  
Ruffed Grouse  
Sage Grouse  
Sage Sparrow  
Sage Thrasher  
Sandhill Crane  
Savannah Sparrow  
Sharp-shinned Hawk  
Song Sparrow  
Spotted Sandpiper  
Stellar's Jay  
Swainson's Hawk  
Townsend's Solitaire  
Tree Swallow  
Turkey Vulture  
Upland Sandpiper  
Vesper Sparrow  
Violet-green Swallow

Mourning Dove  
Northern Flicker  
Northern Goshawk  
Northern Harrier  
Northern Mockingbird  
Northern Rough-winged Swallow  
Olive-sided Flycatcher  
Orange-crowned Warbler  
Osprey  
Pine Siskin  
Pink-sided Junco  
Prairie Falcon

**Amphibians**

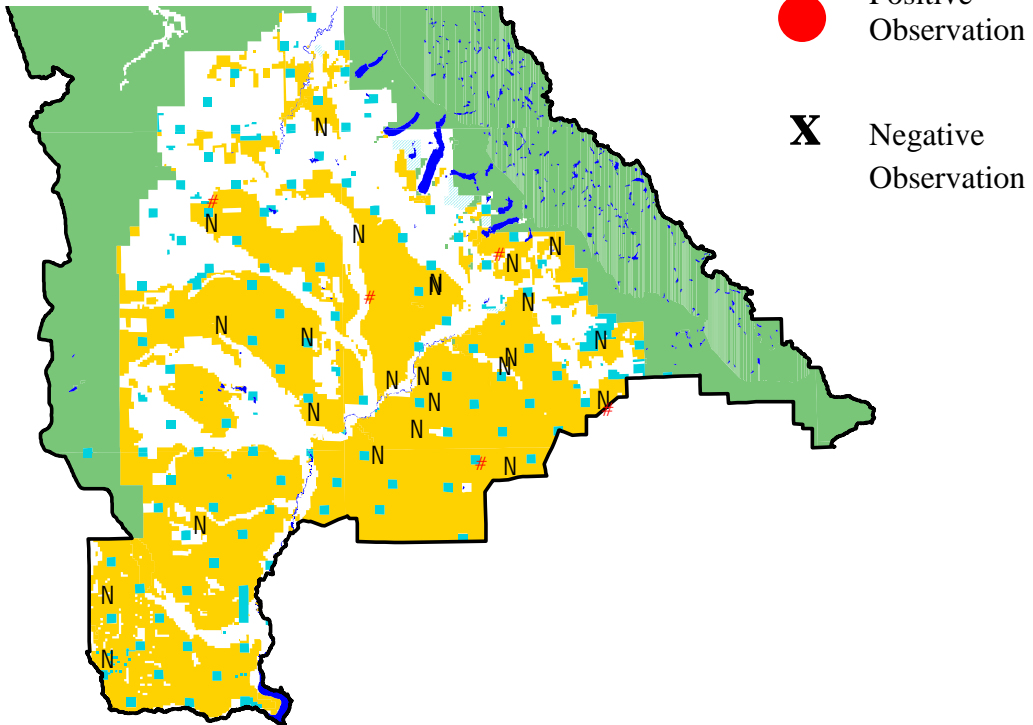
Chorus Frog  
Tiger Salamander  
Boreal Toad  
Spotted Frog

**Reptiles**

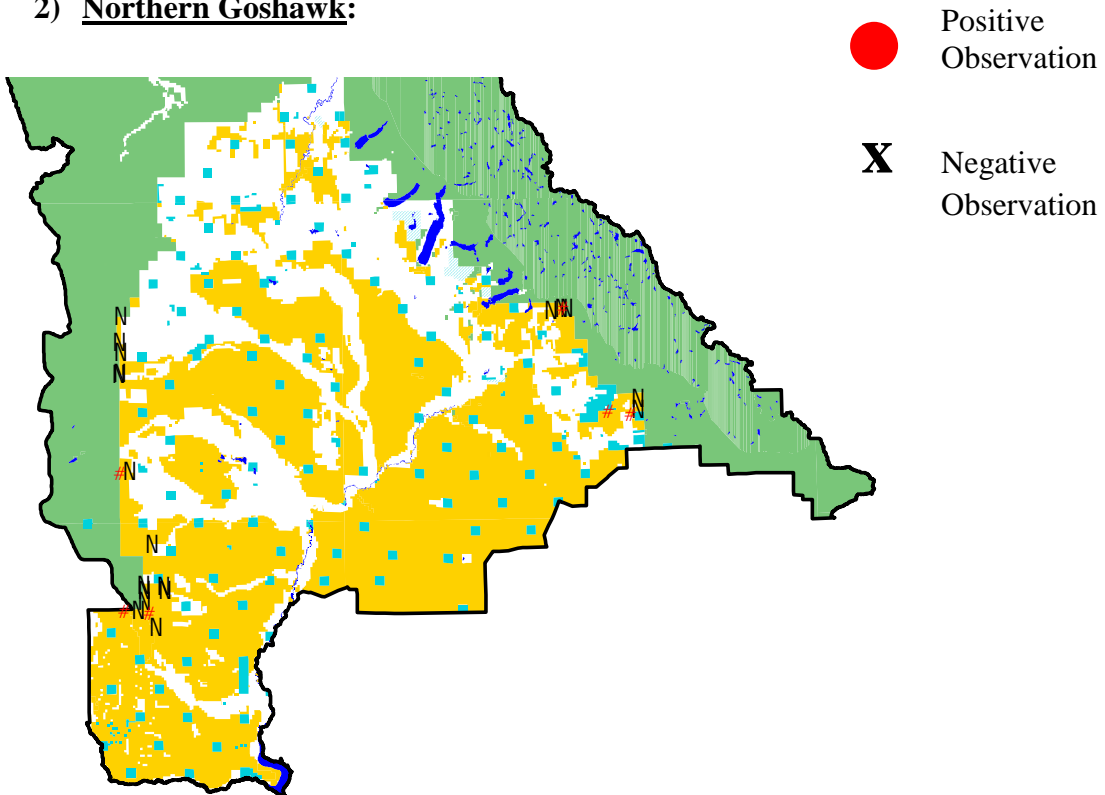
Northern Sagebrush Lizard  
Horned Lizard  
Wandering Garter Snake

**Appendix D:** Maps of sensitive species occurrence data from the Pinedale Field Office.

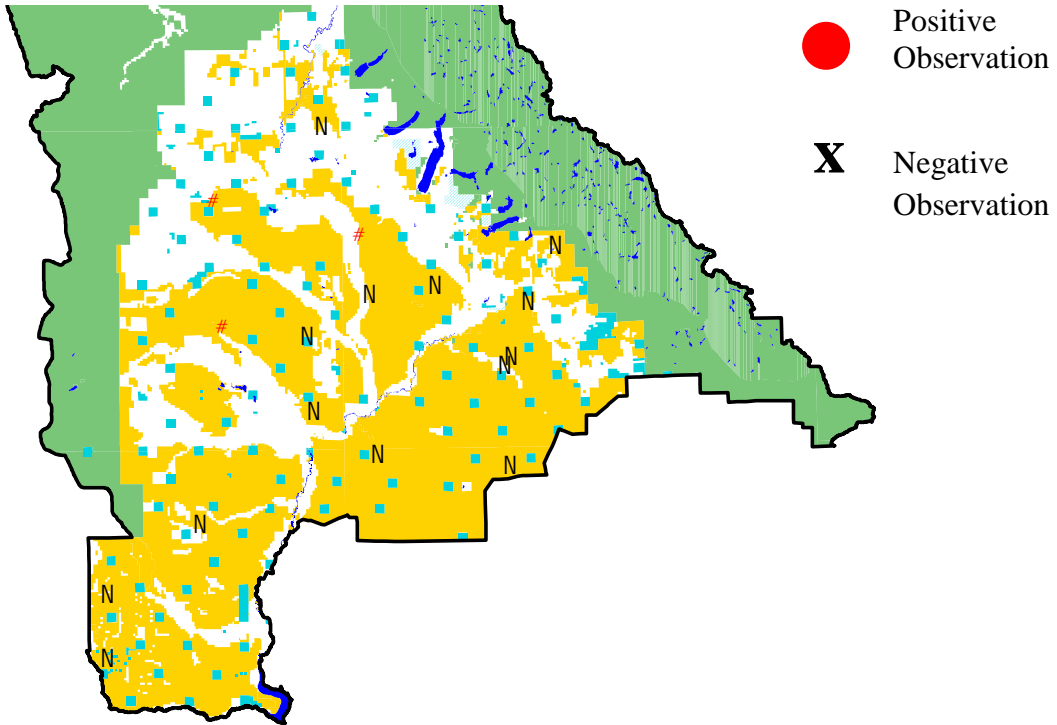
1) **Ferruginous Hawk:**



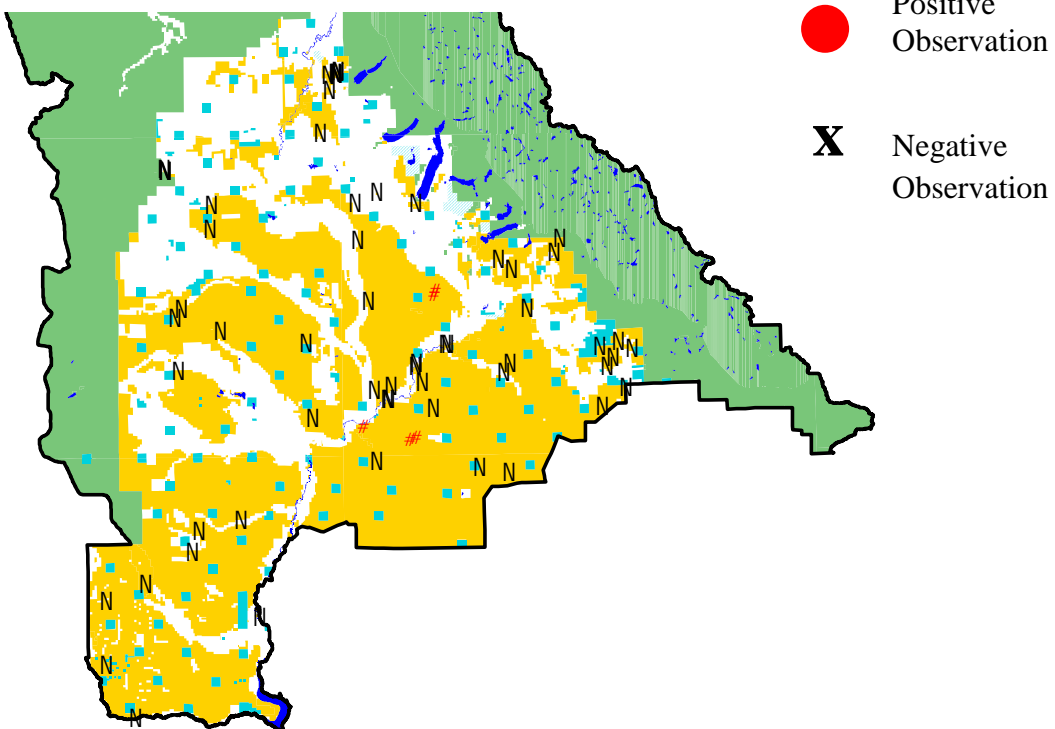
2) **Northern Goshawk:**



3) Long-billed Curlew:

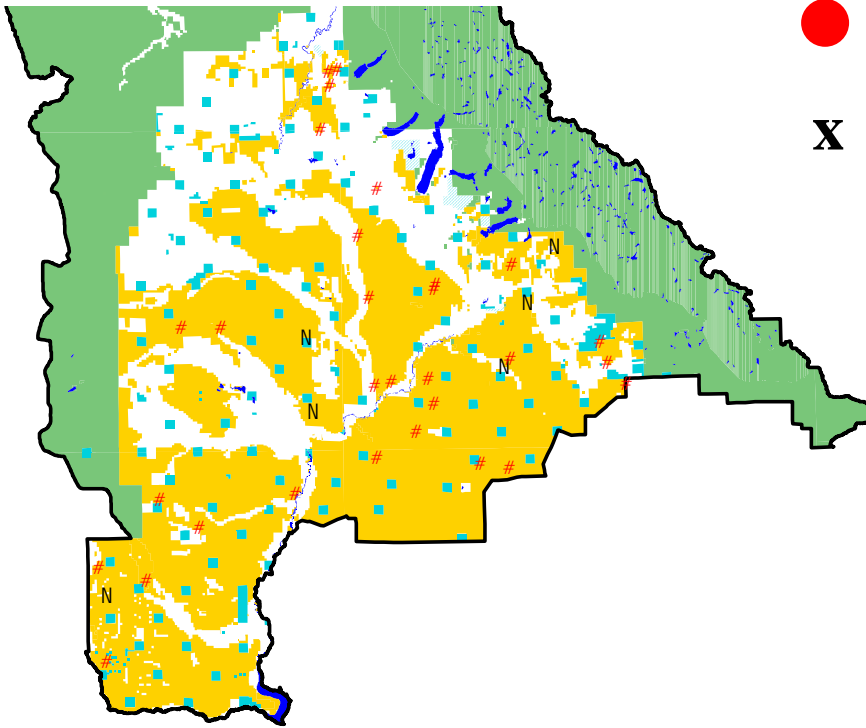


4) Loggerhead Shrike:





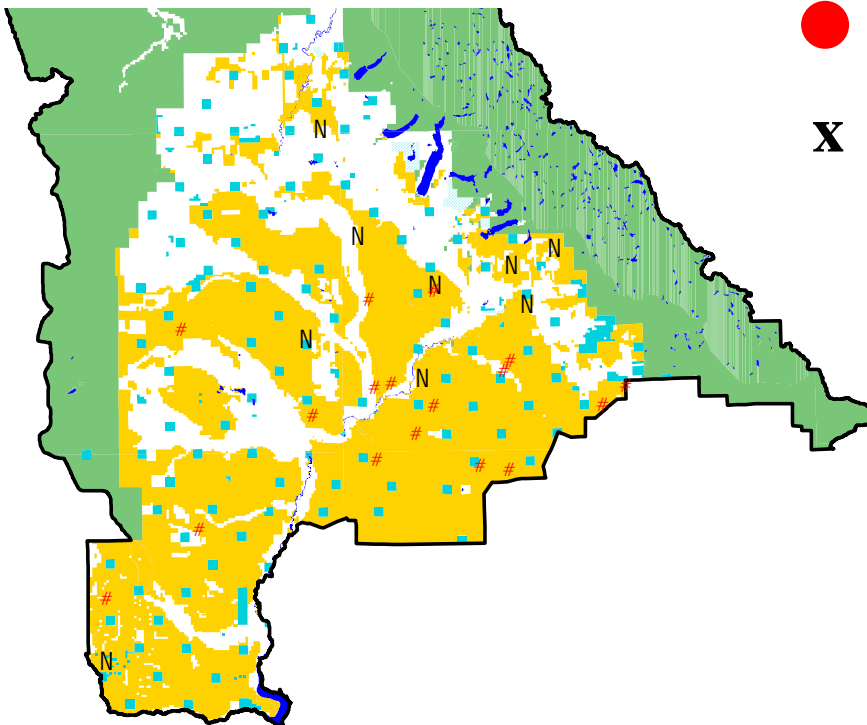
5) Brewer's Sparrow:



● Positive Observation

✕ Negative Observation

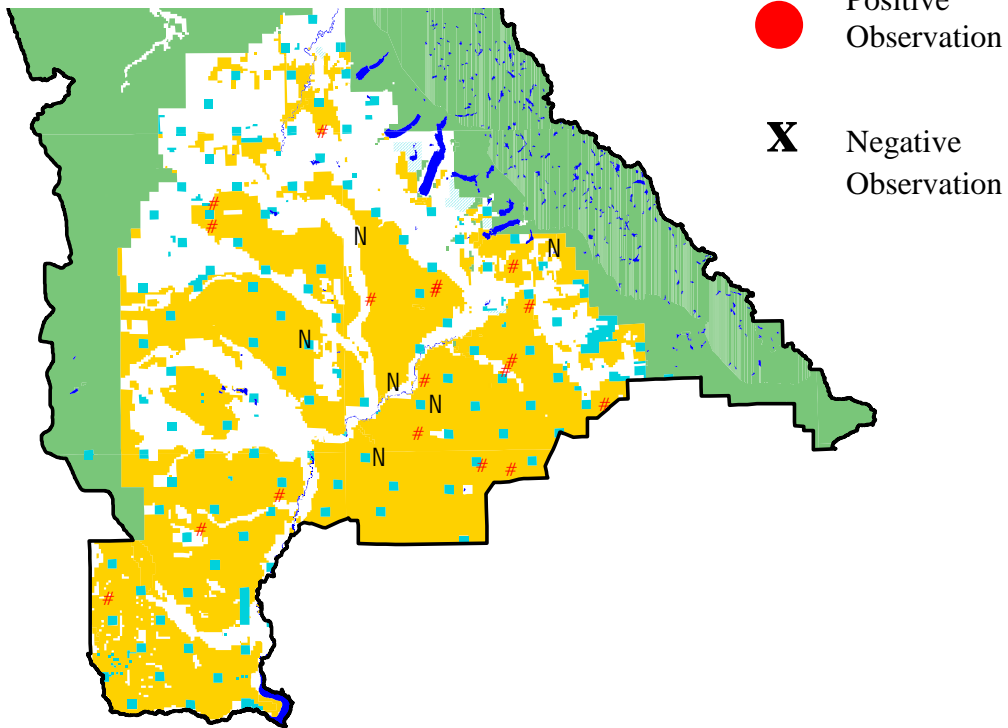
6) Sage Sparrow:



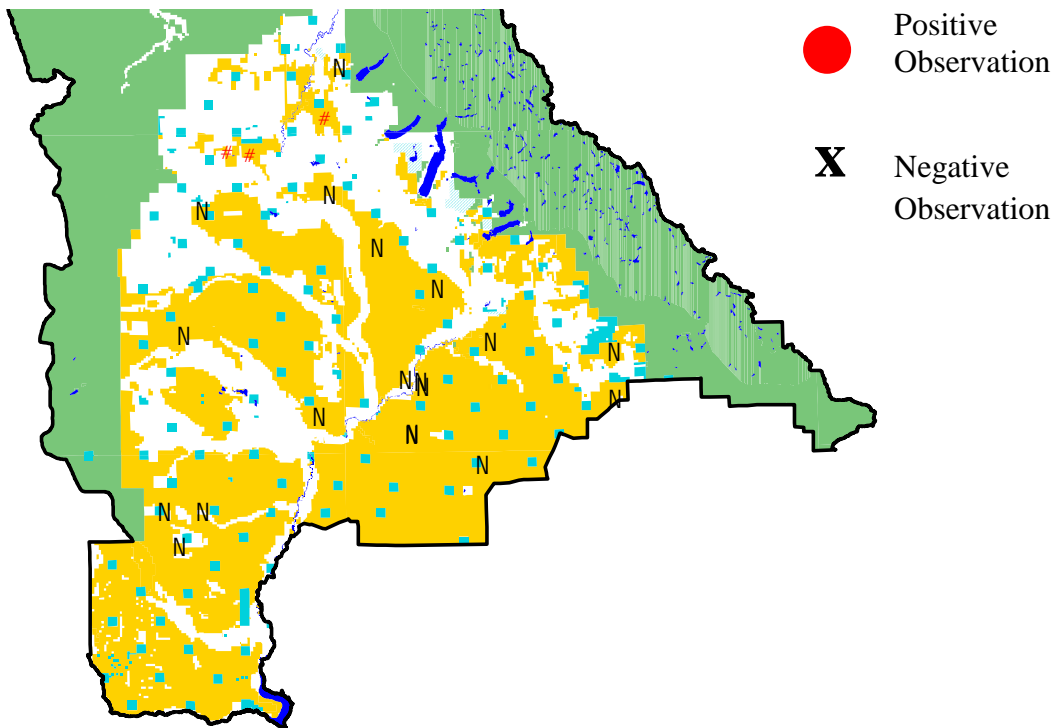
● Positive Observation

✕ Negative Observation

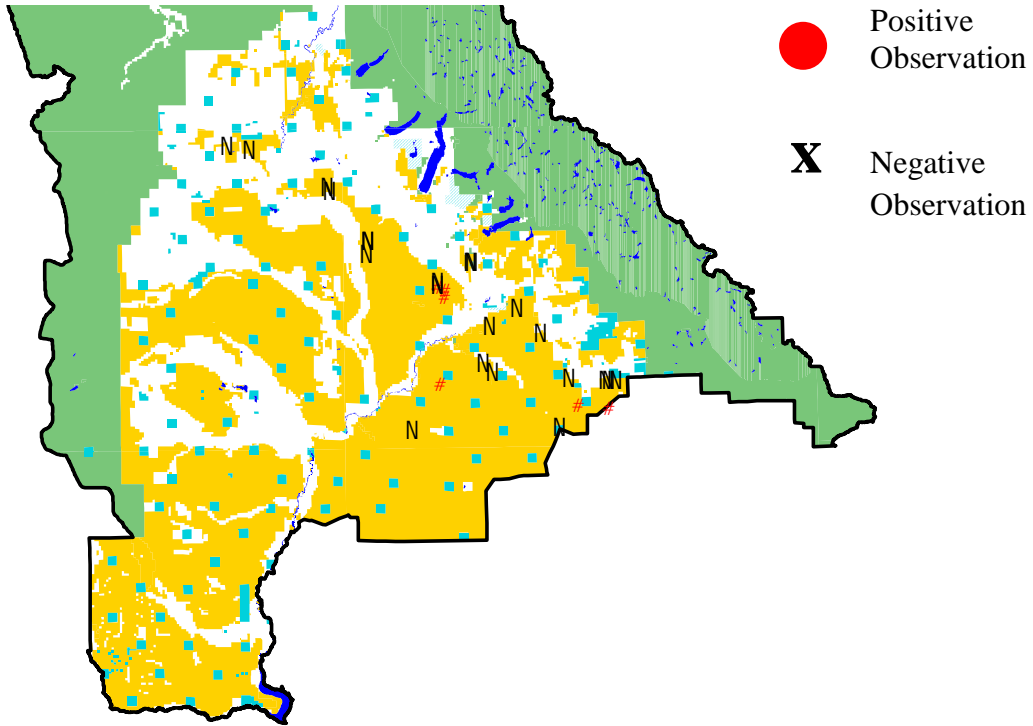
7) Sage Thrasher:



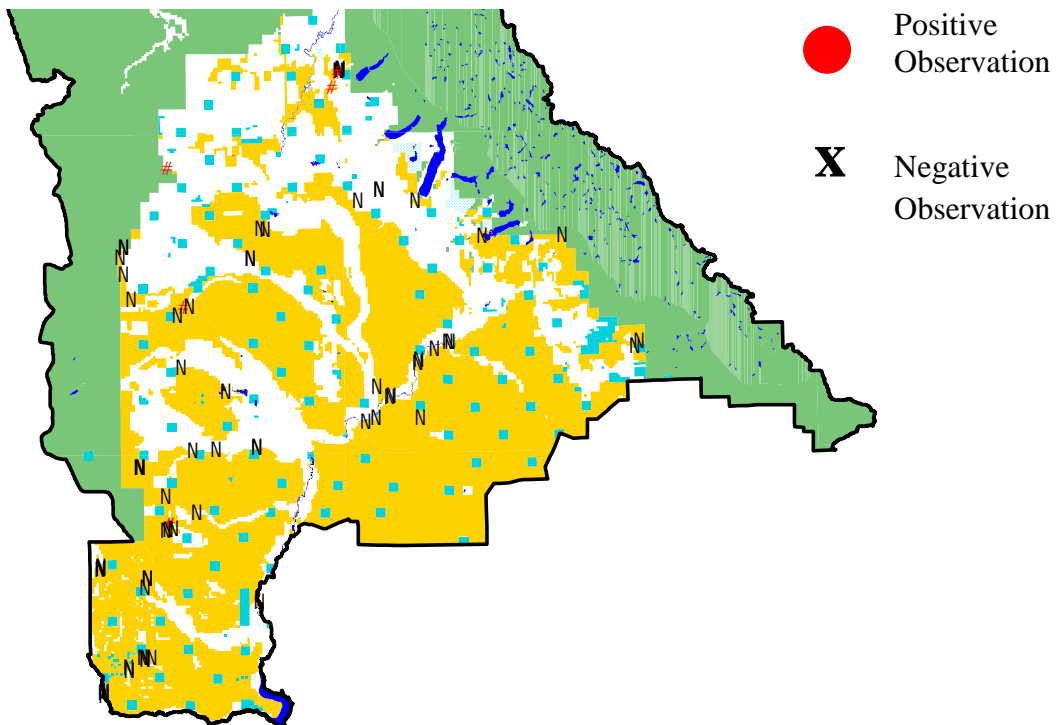
8) Uinta Ground Squirrel:



9) Pygmy Rabbit:



10) Boreal Toad:



11) Spotted Frog:

