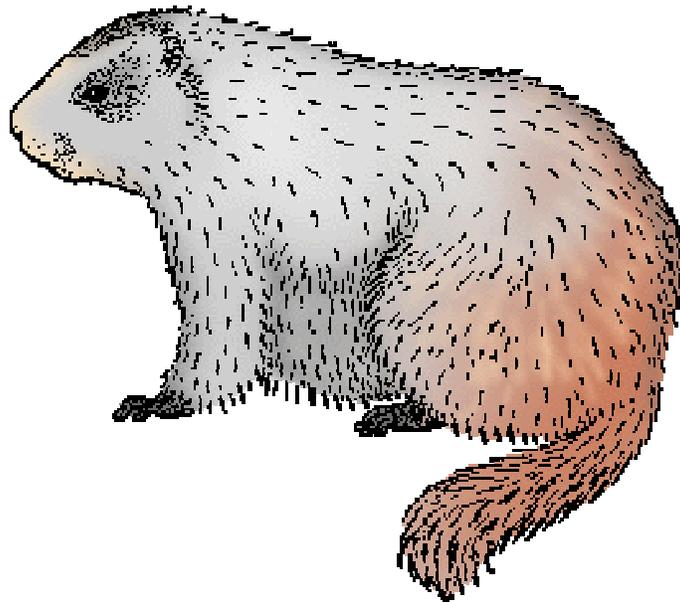


Great Basin National Park

Listing Sensitive and Extirpated Species



Update as of 06/2006

As mandated by NPS 77, Natural Resources Management Guidelines:

The National Park Service will identify and promote the conservation of all Federally listed threatened, endangered, or candidate species within park boundaries and their critical habitats... The National Park Service also will identify all state and locally listed threatened, endangered, rare, declining, sensitive, or candidate species that are native to and present in the parks, and their critical habitats.... All management actions for protection and perpetuation of special status species will be determined through the park's resource management plan.

Management of these species should be determined at the park level in consultation with concerned and knowledgeable parties. Although specific recovery actions may not be indicated, their identification as rare or sensitive species should warrant heightened management concern.

In addition, the Park's primary objective as stated in the General Management Plan is:

1. Manage the park to maintain the greatest degree of biological diversity and ecosystem integrity within the provisions of the authorizing legislation.

Based upon these statements, the park is mandated to identify all sensitive species and their habitats within the park and to manage for their continuity. Table 1, page 23 listed 15 species as Endangered, Threatened, Sensitive, Protected, and Candidate species known to or suspected to use habitat in GRBA. Based upon literature reviews, fieldwork, and historical citations, Resource Management staff has identified ___ number of species as sensitive based on their current status in the park meets one or more factors listed below as defined by NPS 77 Natural Resources Management Guidelines. Any species or infraspecies not otherwise designated whose population characteristics warrant special management or more intensive monitoring. Considerations include:

- 1) Local rarity of native species.
- 2) Whether or not the species is endemic to the park or local vicinity.
- 3) The importance of the species to the park (as identified in park management objectives).
- 4) Whether the species is the subject of political concern or unusual public interest.
- 5) The usefulness of the species as an indicator species.
- 6) The vulnerability of the species to local population declines.

7) Whether the species or its habitat is subject to human disturbance during critical portions of its life cycle.

Extensive inventory efforts have been directed at mammals, reptiles, amphibians, fish, mollusks, and cave invertebrates. Despite these efforts truly rare species often remain undetected by traditional taxon based inventory methods. Future inventories are funded for cave invertebrates, sagebrush voles, Utah mountain kingsnakes, pygmy rabbits, Merriams shrews, and yellow bellied marmots.

The following list contains species currently listed under federal, state or other organizations. Several species are not listed but their unique status or declining population trends warrant their listing as a NPS sensitive species under the criteria listed above.

Great Basin National Park sensitive species generally fall into three categories. 1) Species perceived as rare due to a fossorial, nocturnal, or secretive nature. Inventory efforts may reveal these species as common when appropriate detection methods are used. 2) Species imperiled due to habitat conversion, such as riparian, alpine, and sagebrush obligate species. 3) Truly rare species that are patchily distributed and or present in low densities.

Mammals

Merriam's shrew (*Sorex merriami*)

Presence unconfirmed in park but suitable habitat exists. Listed on the watch list by the Nevada Natural Heritage Program. Prefers sage steppe habitat. Threatened due to conversion of sage steppe habitat by piñon and juniper. Inventories planned for FY07 & FY08. Relevant references: Rickart and Robson (2005)

Water Shrew (*Sorex palustris*)

Confirmed from park. Dependent upon riparian habitat. Subject to extirpation by non-native trout. Only 3 records from park. Predicted to go extinct from the Snake Range under an assumed global climate change model. Relevant references: Hall (1946); McDonald and Brown (1992); Rickart and Robson (2005)

Inyo Shrew (*Sorex tennellus*)

Confirmed from park in park in 2000 at 9900 feet in elevation along the south fork of Lehman Creek. Listed on the watch list by the Nevada Natural Heritage Program. Only one record of this species from the park. Relevant references: Rickart et al. (2004); Rickart and Robson (2005).

Pallid bat (*Antrozous pallidus*)

Presence confirmed from park. Listed on the watch list by the Nevada Natural Heritage Program. Primary habitats in Nevada include piñon/juniper, sagebrush, and salt desert

scrub. Roosts in caves and mines. Year-round resident. Behaviorally sensitive to roost disturbance. Primary threats include recreational caving, mine reclamation, and encroachment of sage steppe habitat by piñon juniper. Relevant References: Ports and Bradley (1996), Baldino (1998b), Bradley et al. (2005), Rickart and Robson (2005).

Spotted Bat (*Euderma maculatum*)

Anecdotal report from park. Suitable habitat is present in park. State listed as at-risk of extinction or serious decline by Nevada Natural Heritage Program and listed in Table 1 of the GMP as a sensitive species. Utilizes a variety of habitats but limestone cliffs, canyon walls, and caves are potentially critical roosting habitats. Potentially a year-round resident. Recreational caving may be detrimental. Extensive mist netting at cave entrances and mines has failed to document this species in park. Spotted bats are truly rare with only 12 records from Nevada. Anecdotal report by recreational cavers in Model Cave in 1966. Relevant References: Soulages (1966), Bradley et al. (2005), Rickart and Robson (2005).

Fringed Myotis (*Myotis thysanodes*)

Unconfirmed from park. Suitable habitat is present in park. State listed as at-risk of extinction or serious decline by Nevada Natural Heritage Program. Occurs in a wide range of habitats across a wide elevational range. Roosts in mines, caves, trees, and buildings. Year-round resident. Very sensitive to roost disturbance. Recreational caving and mine reclamation are major threats. Inventories and life history information is needed. Relevant References: Bradley et al. (2005), Rickart and Robson (2005).

Long-Eared Myotis (*Myotis evotis*)

Presence confirmed in park. Listed on the watch list by the Nevada Natural Heritage Program. Habits are primary higher elevation coniferous forests. Roosts in trees, rock out crops, and occasionally in mines, caves, and buildings. Recreational caving and mine reclamation are threats. Relevant References: Hall (1946), Baldino (1998b), Bradley et al. (2005), Rickart and Robson (2005).

Long-Legged Myotis (*Myotis volans*)

Presence confirmed in park. Listed on the watch list by the Nevada Natural Heritage Program. Habitats include piñon juniper and coniferous forests. Day roosts are primarily in hollow trees, rock crevices, caves, mines, and buildings. Potentially a year round residents. Hibernates in mines and caves. Recreational caving and mine reclamation are threats. Relevant References: Hall (1946), Baldino (1998b), Bradley et al. (2005), Rickart and Robson (2005).

Silver-Haired Bat (*Lasionycteris noctivagans*)

Confirmed from park. Suitable habitat exists in park. Listed on the watch list by the Nevada Natural Heritage Program. Inventories needed. Primarily restricted to woodland, forest, and riparian habitats. Roosts almost exclusively in trees in the summer. Migratory. Recreational caving and mine reclamation are threats. Relevant References:

Soulages (1966), Baldino (1998a, 1998b), Bradley et al. (2005), Rickart and Robson (2005).

Townsend's Big-Eared Bat (*Corynorhinus townsendii*)

Presence confirmed in park. State listed as at-risk of extinction or serious decline by Nevada Natural Heritage Program. Townsend's big-eared bats are extremely sensitive to human caused disturbance and will abandon roost sites if disturbed. Utilize a variety of habitats, primarily piñon juniper and sage steppe. Distribution strongly correlated with cave and mine roosts. Year-round resident. Recreational caving is major threat.

Relevant References: Hall (1946), Soulages (1966), Baldino (1998a, 1998b), Bradley et al. (2005), Rickart and Robson (2005).

Hoary bat (*Lasiurus cinereus*)

Undocumented in park, but suitable habitat exists. Documented at Shoshone Ponds, Spring Valley. A forest dependent species, its habitat includes forested uplands and riparian areas. Migratory, roosts primarily in trees, but occasionally in caves, mines, and under rocks. Relevant References: Baldino (1998b), Bradley et al. (2005), Rickart and Robson (2005).

Ringtail (*Bassaricus astutus*)

Presence confirmed in park. Documented from sightings, sign, and remote camera photographs from Strawberry, Lehman, and Snake Creek. Within park, species is approaching the northern limits of range within Great Basin physiographic region. Remote camera inventories on-going. Relevant references: Rickart and Robson (2005).

Ermine (*Mustela erminea*)

Presence confirmed in park. Restricted to mid to high elevation forests. Several historic park records. Remote camera inventories on going. Predicted to go extinct from the Snake Range under an assumed global climate change model. Relevant references: Hall (1946); McDonald and Brown (1992); Rickart and Robson (2005).

Long-tailed weasel (*Mustela frenata*)

Presence confirmed in park. Broader habitat and elevation range than *M. erminea*. Several historic park records. Remote camera inventories on going. Relevant references: Hall (1946); Rickart and Robson (2005).

Striped skunk (*Mephitis mephitis*)

Presence confirmed in park. Wide habitat and elevation range. No historic records but several recent sightings. Remote camera inventories on going. Relevant references: Hall (1946); Rickart and Robson (2005).

Spotted skunk (*Spilogale putorius*)

Presence confirmed in park. Several historic and recent sightings. Remote camera inventories on going. Relevant references: Hall (1946); Rickart and Robson (2005).

Rocky Mountain Bighorn Sheep (*Ovis canadensis*)

Presence confirmed in park. Extirpated from GRBA in the early 1900's and reintroduced by NDOW prior to park establishment. Inventories, habitat assessments and life history information completed. Debate over genetics and domestic sheep grazing limiting reintroduction potential. Relevant references: Hall (1946); Rickart and Robson (2005), Darby and Williams 2001, Peeks et al. 2003.

Beaver (*Castor canadensis*)

Presence confirmed in park. A riparian obligate plays an important role in wetland and riparian hydrology. Local ranchers extirpated most populations in the 1950's. Abundant historic sign (gnawed stumps and terraces) in most perennial park streams. Few sightings. New population attempted establishment in Strawberry Creek in 2004 but disappeared over winter of 2004/2005. Relevant references: Hall (1946); Rickart and Robson (2005).

Yellow-bellied Marmot (*Marmota flaviventris*)

Presence confirmed in park. Sage steppe obligate imperiled due to encroachment of habitat by white fir, piñon, juniper, and mountain mahogany. Floyd (2004) documented several potential extirpations of this species from four isolated Great Basin mountain ranges. Inventories planned for FY07 and FY08. Relevant references: Hall (1946); Rickart and Robson (2005), Floyd (2004); Floyd et al. (2005).

Sagebrush Vole (*Lemmiscus curtatus*)

Undocumented in park but suitable habitat exists. Shrub steppe obligate imperiled due to loss of sage steppe habitat due to encroachment by piñon, juniper, mountain mahogany and white fir. Occurs over a wide elevational gradient. Four historic local records. Population eruptions are well documented in this species. Inventories planned for FY07 and FY08. Relevant references: Hall (1946); Rickart and Robson (2005).

Porcupine (*Erethizon dorsatum*)

Presence confirmed in park. Formerly widely distributed in park with several historic records but very few recent sightings. Riparian habitat forms an important part of porcupine habitats in the Great Basin. Widely declining across the Great Basin. Relevant references: Hall (1946); Sweitzer (2003); Rickart and Robson (2005).

Pygmy Rabbit (*Brachylagus idahoensis*)

Presence historically confirmed in park. Locally rare native species; protected under Nevada state law; and state listed as at-risk of extinction or serious decline by Nevada Natural Heritage Program. Primary habitat is old growth basin big sagebrush. Loss of habitat from piñon juniper encroachment limits habitat in park. Inventories planned for FY07 and FY08. The pygmy rabbit is a true native of the Great Basin with very limited distribution outside of the physiographic region. Historic record from Baker Creek, no longer suitable habitat due to piñon juniper encroachment. Inventories planned for FY07 and FY08. Relevant references: Hall (1946); Rickart and Robson (2005); Himes (2003), Eveline Sequine (pers. comm.)

Birds

Sage Grouse (*Centrocercus urophasianus*)

Historic presence confirmed in park, including breeding. No recent observations of breeding activity in GRBA despite extensive inventories. State listed as at-risk of extinction or serious decline by Nevada Natural Heritage Program. White Pine County Sensitive Species. Sage steppe obligate. Historic records suggest shift in distribution due to encroachment of piñon juniper. Inventories on-going. Relevant references: Hartley and Gubanich (2004), Nevada Natural Heritage Program Database (2004).

California Quail (*Callipepla californica*)

Presence possible in park. Recommended for study by Hartley and Gubanich (2004).

Long-billed Curlew (*Numenius americanus*)

Presence confirmed in park. White Pine County's Watch List. Audubon Watchlist. Breeds in grasslands, considered highly imperiled. Relevant references: Hartley and Gubanich (2004), Nevada Natural Heritage Program Database (2004).

Northern Goshawk (*Accipiter gentilis*)

Presence confirmed in park. White Pine County Sensitive Species. Listed as species of concern by FWS, BLM, and USFS. Preferred nesting habitat is aspen. Inventories on-going. Relevant references: Hartley and Gubanich (2004), Nevada Natural Heritage Program Database (2004).

Swainson's Hawk (*Buteo swainsoni*)

Presence confirmed in park. State listed as at-risk of extinction or serious decline by Nevada Natural Heritage Program. White Pine County Sensitive species. Audubon Watchlist. Second longest migration of birds; feeds on insects and affected by pesticides. Habitat decline due to urbanization. Inventories needed. Relevant references: Hartley and Gubanich (2004), Nevada Natural Heritage Program Database (2004).

Ferruginous Hawk (*Buteo regalis*)

Probably present in park. State listed as at-risk of extinction or serious decline by Nevada Natural Heritage Program. White Pine County Sensitive species. Audubon Watchlist. Petitioned for listing under ESA in 1991, but declined. Shrub and grass habitat and prey species may be in decline. Inventories needed. Relevant references: Hartley and Gubanich (2004), Nevada Natural Heritage Program Database (2004).

Peregrine Falcon (*Falco peregrinus*)

Presence confirmed in park due to reintroduction efforts. State listed as at-risk of extinction or serious decline by Nevada Natural Heritage Program. Inventories and monitoring needed. Occasional sightings reported around Mt. Washington area. Relevant references: Hartley and Gubanich (2004).

Short-eared Owl (*Asio flammeus*)

Probably present in park. White Pine County Watch List, BLM special status species. Audubon Watchlist. In serious decline due to grassland and marsh habitat loss and possibly pesticide use. Inventories needed. Relevant references: Hartley and Gubanich (2004), Nevada Natural Heritage Program Database (2004).

Western Burrowing Owl (*Athene cunicularia hypugaea*)

Confirmed in park. State listed as at-risk of extinction or serious decline by Nevada Natural Heritage Program. White Pine County Sensitive species. Shrub/grassland habitat loss. Inventories needed. Relevant references: Hartley and Gubanich (2004), Nevada Natural Heritage Program Database (2004).

Flammulated Owl (*Otus flammeolus*)

Probably present in park. State listed as at-risk of extinction or serious decline by Nevada Natural Heritage Program. White Pine County Sensitive species. Audubon Watchlist. White-fir encroachment into Ponderosa pine woodlands limiting or degrading suitable habitat. Slow reproductive rate. Inventories needed. Relevant references: Hartley and Gubanich (2004), Nevada Natural Heritage Program Database (2004).

Three-Toed Woodpecker (*Picoides tridactylus*)

Presence confirmed in park. State listed on watch list by Nevada Natural Heritage Program. GRBA is considered the westernmost extension of the three-toed woodpeckers' described range. Inventories needed. Relevant references: Hartley and Gubanich (2004), Nevada Natural Heritage Program Database (2004).

Lewis's Woodpecker (*Melanerpes lewis*)

Presence confirmed in park. White Pine County Watch list, BLM special status species. Audubon's Watchlist. Declining due to loss of ponderosa pine trees, riparian cottonwoods, and invasion of European Starlings. Relevant references: Hartley and Gubanich (2004), Nevada Natural Heritage Program Database (2004).

Piñon Jay (*Gymnorhinus cyanocephalus*)

Presence confirmed in park. White Pine County Watch list, BLM special status species. Audubon Watchlist. Decline of 4.3% per year from 1966-2001 due to habitat loss and fire suppression. Relevant references: Hartley and Gubanich (2004), Nevada Natural Heritage Program Database (2004).

Brewer's Sparrow (*Spizella breweri*)

Presence confirmed in park Audubon Watchlist. Population declining since the 1960's, with larger declines since the 1980's due to loss of sagebrush habitat. Relevant references: Hartley and Gubanich (2004)

Fox Sparrow (*Passerella iliaca*)

Presence confirmed in park, but in smaller numbers than expected. Recommended for further study by Hartley and Gubanich (2004).

Loggerhead Shrike (*Lanius ludovicianus*)

Presence confirmed in park. White Pine County Watch list; FWS former category 2, now species of concern; BLM special status species. Populations severely declining in the eastern and central U.S. need to be inventoried and monitored in western U.S. Relevant references: Hartley and Gubanich (2004), Nevada Natural Heritage Program Database (2004).

Yellow Warbler (*Dendroica petechia*)

Presence confirmed in park. White Pine County Watch list, proposed BLM special status species. Good indicator species for riparian thicket health. Relevant references: Hartley and Gubanich (2004), Nevada Natural Heritage Program Database (2004).

MacGillivray's Warbler (*Oporornis tolmiei*)

Presence confirmed in park. White Pine County Watch list, proposed BLM special status species. Good indicator species for riparian thicket health. Relevant references: Hartley and Gubanich (2004), Nevada Natural Heritage Program Database (2004).

Black Rosy-finch (*Leucosticte atrata*)

Present in park. Only breeds in high elevations in the northern Great Basin. Population declining since 1970's. White Pine County Watch list, BLM special status species. Audubon Watchlist. Relevant references: Hartley and Gubanich (2004), Nevada Natural Heritage Program Database (2004).

Reptiles and Amphibians

Ringneck snake (*Diadophis punctatus*)

Undocumented from park but suitable habitat exists. Historic records from outside park. Highly secretive and patchily distributed in the Great Basin. Relevant references: Lindsdale (1940), Setser et al. (2002), Hamilton (2003b), Stebbins (2003); Bosworth et al. (2004).

Sonoran Mountain kingsnake (*Lampropeltis pyromelana*)

Anecdotal reports from park. Imperiled due to encroachment of preferred sage steppe and ponderosa pine habitat by piñon, juniper, and white fir. Historic records from Swallow Canyon and Osceola. Highly secretive. Inventories planned for FY07 and FY08. Relevant references: Lindsdale (1940), Setser et al. (2002), Hamilton (2003b), Stebbins (2003), Hubbs (2004).

Great Basin Whiptail (*Aspidoscelis tigris*)

Presence confirmed in park only from Baker Administrative site. Relevant references: Lindsdale (1940), Setser et al. (2002), Hamilton (2003b), Stebbins (2003).

Northern Side-blotched lizard (*Uta stansburiana*)

Presence confirmed in park, but restricted to lowest elevations. Historic records suggest a shift in distribution due to encroachment of sage steppe habitat by piñon and juniper

(BYU specimen – BYU 614). Relevant references: Lindsdale (1940), Setser et al. (2002), Hamilton (2003b), Stebbins (2003).

Great Basin Spadefoot (*Spea intermontana*)

Presence confirmed in park, only from Baker Administrative site. Only documented amphibian species from park. Relevant references: Lindsdale (1940), Setser et al. (2002), Hamilton (2003a), Stebbins (2003).

Fish

Bonneville Cutthroat Trout (*Oncorhynchus clarki utah*)

Presence confirmed in park. Locally rare native species; species is endemic to the park or local vicinity, listed in Table 1 of GMP as a sensitive species; Region 4 USDA Forest Service Sensitive species; US Fish and Wildlife Service Sensitive species; protected under Nevada State Law; and listed as critically imperiled by the Nature Conservancy Nevada Natural Heritage Program. Extirpated from most of park. Reintroduced to park starting in 2000. Currently GRBA has 5 populations in 18 miles of streams. Baker et al. (2006), Other reports??

Mottled Sculpin (*Cottus bairdi*)

Presence confirmed in park. Locally rare native species; Snake Valley population could be genetically distinct from other populations. Inventories and life history information is needed. Bottom-dwelling fish that prefer clear, fast water. Historically present in park and was rediscovered in 1998 incidental to macroinvertebrate surveys. Reintroduced to park starting in 2005, further reintroduction and monitoring needed. Relevant references: Haskins (1991); Andersen & Deacon (1996), Sigler and Sigler (1987), Baker (2005).

Speckled Dace (*Rhinichthys osculus*)

Presence confirmed in park. Locally rare native species; species is endemic to the park or local vicinity due to different genetics from other populations. Prefers shallow water and is benthic dweller. Extirpated from park, reintroductions began in 2005. Further reintroduction and monitoring needed. Relevant references: Oakey et al. (2004), Sigler and Sigler (1987), Baker (2005).

Redside Shiner (*Richardsonius balteatus*)

Presence confirmed in park. Locally rare native species. An important small forage fish, with a slow growth rate. Extirpated from park, reintroductions began in 2005. Further reintroduction and monitoring needed. Relevant references: Sigler and Sigler (1987), Baker (2005).

Mollusks

Toquerville Springsnail (*Pyrgulopsis kolobensis*)

Presence confirmed in park, at only two springs along Snake Creek. Although this species is fairly widespread throughout the eastern Great Basin, it only occurs in one drainage in the park. Identified by Dr. Robert Herschler in 2005.

Cave Biota

(Chelicerata)

Cave obligate pseudoscorpion (*Microcreagris grandis*)

Presence confirmed in park in four caves. Endemic to park or local vicinity. Monitoring needed. Relevant References: Krejca and Taylor (2003).

(Mandibulata)

Cave obligate millipede (*Speodesmus* sp.)

Presence confirmed in park. Possibly endemic to park or local vicinity. Additional sampling for identification and monitoring needed. Relevant References: Krejca and Taylor (2003).

Snake Creek Cave springtail (*Arrhophilates* sp.)

Presence confirmed in park. Endemic to park. Additional sampling needed for conclusive diagnosis of new species. Relevant References: Zeppelini (2004).

Model Cave springtail (*Arrhophilates* sp.)

Presence confirmed in park. Endemic to park. Additional sampling needed for conclusive diagnosis of new species. Relevant References: Zeppelini (2004).

Plants

Ten species of rare and/or sensitive species occur within Great Basin National Park. An additional five species occur in the vicinity but have never been confirmed within the park. Six species are former Category 2 candidates for listing under the Endangered Species Act but are now designated by the USFWS as species of concern. Information on the location, distribution and abundance of these plants is severely lacking. In 2004 and 2005 a survey was completed to assess the location, distribution and relative abundance of five species including Holmgren's buckwheat (*Eriogonum holmgrenii*), Pennell's beardtongue (*Penstemon leiophyllus* var. *francisci-pennellii*), Nevada Primrose (*Primula cusickiana* var. *nevadensis*), and Nachlinger's catchfly (*Silene nachlingerae*) and Snow wavewing (*Cymopterus nivalis*). Based upon federal agency listings, NNHP information and current knowledge of abundances and locations in GRBA, the 15 sensitive species can be divided into three groups of plants; 1) those that are currently threatened or especially sensitive and warrant careful inventory, monitoring, and protection and are denoted as **GRBA Sensitive plants**, 2) those whose status is less threatened, but still merit inclusion on a watch-list, denoted as **GRBA Watch List Species** and 3) threatened plants that are not known to occur in GRBA, but whose presence is possible denoted as **Plants not known in GRBA**

GRBA Sensitive Plants

Holmgren's buckwheat (*Eriogonum holmgrenii*) - Polygonaceae

Presence in the park confirmed. Endemic to the south Snake Range. US Fish and Wildlife Service (USFWS) species of concern; region 4 USDA Forest Service sensitive species; listed as a sensitive species and ranked G1 S1 by Nevada Natural Heritage Program (NNHP); on the watch list of the Nevada Native Plant Society (NNPS); Listed in Table 1 of the GMP as a sensitive species. Found on quartzite and limestone talus in alpine and subalpine areas. Some location data exist for GRBA, but demography and ecology are largely unknown. Threats include domestic sheep grazing, illegal OHV use and recreational use of alpine and subalpine areas. Relevant references: Morefield (2001), Clifton (2004), USDA (2006).

Nachlinger's catchfly (*Silene nachlingerae*) - Caryophyllaceae

Presence in the park confirmed. Endemic to central Great Basin ranges (e.g. Snake, Quinn, Ruby). Rare and local native plant. USFWS species of concern; region 4 USDA Forest Service sensitive species; designated a Nevada Special Status Species by the Bureau of Land Management (BLM); listed as a sensitive species and ranked G2 S2 by the NNHP; on the NNPS watch-list; Listed in Table 1 of the GMP as a sensitive species. Like many Great Basin endemics, it is found primarily in isolated alpine areas on limestone substrates. Location, distribution, and relative abundance surveys initiated in 2004. Significant populations exist in the Lincoln Peak and Mount Washington areas. Threats include domestic sheep grazing particularly associated with the Murphy Wash sheep allotment, illegal OHV use and recreational use of alpine and subalpine areas. Relevant references: Morefield (2001), Clifton (2004), USDA (2006).

Waxflower (*Jamesia tetrapetala*) - Hydrangeaceae

Presence in the park confirmed. Central Great Basin limestone endemic. Rare and local native species. USFWS species of concern; region 4 USDA Forest Service sensitive species; designated a Nevada Special Status Species by the BLM; listed as a sensitive species and ranked G2 S2 by the NNHP; on the NNPS watch-list; Listed in Table 1 of the GMP as a sensitive species. Limestone cliffs, talus, canyons in alpine and subalpine environments. Several locations and collections have been documented in GRBA, mostly in the Mount Washington and Lincoln Canyon areas. Threats include domestic sheep grazing particularly associated with the Murphy Wash sheep allotment, illegal OHV use and recreational use of alpine and subalpine areas. Relevant references: Morefield (2001), Clifton (2004), USDA (2006).

Snake Range whitlowgrass (*Draba oreibata* var. *serpentina*) - Brassicaceae

Presence in the park confirmed. Subspecies *serpentina* is central Nevada endemic, though species is globally secure. USFWS species of concern; region 4 USDA Forest Service sensitive species; listed as a sensitive species and ranked G4 T1 S1 by the NNHP; listed as threatened by the NNPS. Rocky alpine and subalpine areas often associated with limestone. Threats include domestic sheep grazing, illegal OHV use and recreational use of alpine and subalpine areas. Relevant references: Morefield (2001), Clifton (2004), USDA (2006).

Nevada primrose (*Primula cusickiana* var. *nevadensis*) - Primulaceae

Presence in the park confirmed. East-central Nevada endemic. USFWS species of concern; region 4 USDA Forest Service sensitive species; listed as a sensitive species and ranked G4 T2 S2 by the NNHP; on the NNPS watch-list; listed in Table 1 of the GMP as a sensitive species. Fairly common in suitable habitat, but limited to alpine and subalpine limestones, which makes it susceptible to disturbance in these areas. Location, distribution and relative abundance data collected in 2004 and 2005. Threats include domestic sheep grazing, illegal OHV use and recreational use of alpine and subalpine areas. Relevant references: Morefield (2001), Clifton (2004), USDA (2006).

Tunnel Springs beardtongue (*Penstemon concinnus*) - Scrophulariaceae

Presence in park confirmed. Central Great Basin endemic. Rare and local native species. USFWS species of concern; region 4 USDA Forest Service sensitive species; designated a Nevada Special Status Species by the BLM; listed as a sensitive species and ranked G3 S2 by the NNHP; on the NNPS watch-list; listed in Table 1 of the GMP as a sensitive species. Gravelly, mid-elevation alluvial slopes with sagebrush and pinyon-juniper. Threats include domestic sheep grazing, transportation and facility development, pinyon-juniper encroachment, and competition from exotic plants (e.g., cheat grass, spotted knapweed, etc.). Relevant references: Morefield (2001), Clifton (2004), USDA (2006).

Pennell's beardtongue (*Penstemon leiophyllus* var. *francisci-pennellii*) - Scrophulariaceae

Presence in the park confirmed. Rare native plant, subspecies *francisci-pennellii* being an east-central Nevada endemic. Listed as a sensitive species and ranked G3 T2 S2 by the NNHP; on the NNPS watch-list; Listed in Table 1 of the GMP as a sensitive species. Occurs in dry, rocky alpine and subalpine slopes, alpine meadows, and associated with middle and upper elevation aspen stands. Extensive location, distribution and relative abundance data obtained in 2004 and 2005. Threatened by domestic sheep grazing, recreation and the decline of aspen communities throughout the park. Synonymous with *P. francisci-pennellii*. Relevant references: Morefield (2001), Clifton (2004), USDA (2006).

Mt. Wheeler sandwort (*Arenaria congesta* var. *wheelerensis*) - Caryophyllaceae

Presence in park confirmed, although GRBA herbarium collections contain no subspecific taxonomy and only a few locations in GRBA have been documented.

Endemic subspecies *wheelerensis* is critically rare in Nevada, occurring only in the Snake and Ruby Ranges. Globally secure intermountain species. Listed as a sensitive species and ranked G5 T2 S2 by the NNHP; on the NNPS watch-list. Alpine and subalpine environments. Threats include domestic sheep grazing, illegal OHV use and recreational use of alpine and subalpine areas. Relevant references: Morefield (2001), Clifton (2004), USDA (2006).

GRBA Watch List Species

Snow wavewing (*Cymopterus nivalis*) - Apiaceae

Presence confirmed in park. Globally secure native species, but local and critically rare in Nevada. Region 4 USDA Forest Service sensitive species; on the watch-list and ranked G5 S3 by NNHP; has been de-listed by the NNPS; Listed in Table 1 of the GMP as a sensitive species. Dry alpine and subalpine slopes, frequently on limestone, though not a true limestone endemic. Extensive location, distribution and relative abundance data obtained in 2004 and 2005. Threats include domestic sheep grazing, illegal OHV use and recreational use of alpine and subalpine areas. Relevant references: Clifton (2004), USDA (2006).

Watson's goldenbush (*Ericameria watsonii*) - Asteraceae

Presence in the park confirmed. Globally secure native species occurring in region, but relatively rare in east-central Nevada. On the NNHP watch-list and ranked G3 G4 S3; De-listed by the NNPS. Cliffs, rock outcrops, generally dry sites across a wide elevational range. Some location data exist for GRBA. Threats include domestic sheep grazing, illegal OHV use and recreational use of alpine and subalpine areas. Relevant references: Morefield (2001), Clifton (2004), USDA (2006). Synonymous with *Haplopappus watsonii*.

Plants not known in GRBA but presence possible

Mt. Moriah beardtongue (*Penstemon moriahensis*) - Scrophulariaceae

Presence in the park unconfirmed, but occurs very near the park in the North Snake Range. Rare, local, native species. Endemic to a very few ranges in the Central Great Basin (North Snake, Kern). Listed as a region 4 USDA Forest Service sensitive species; listed as a sensitive species and ranks G1 G2, S1 S2 by the NNHP; on the NNNPS watch-list. Scrubby woodlands, 7000-9000 feet. Relevant references: Morefield (2001), Clifton (2004), USDA (2006).

Intermountain wavewing (*Cymopterus basalticus*) - Apiaceae

Presence in the park unconfirmed, but possible. Rare and local native species. Endemic to western Utah and White Pine County areas. Listed as a sensitive species and ranked G2 S1 by the NNHP; on the NNPS watch-list; listed in Table 1 of the GMP as a sensitive species. The plant occurs very near the park in the North Snake Range. Found in low and mid-elevation sagebrush and pinyon-juniper communities. Relevant references: Morefield (2001), Clifton (2004), USDA (2006).

Pennell's whitlowgrass (*Draba pennellii*) - Brassicaceae

Presence in the park unconfirmed, but possible. Rare, local native species. Endemic to White Pine County, Nevada, specifically the Schell Creek Range. Listed as a region 4 USDA Forest Service sensitive species; listed as a sensitive species and ranked G2 S2 by the NNHP; de-listed by the NNPS. Cracks, crevices, rocky slopes and ledges, possibly associated with limestone, over a wide elevational range. Relevant references: Morefield (2001), Clifton (2004), USDA (2006).

Rayless Tansy-Aster (*Machaeranthera grindelioides* var. *depressa*) - Asteraceae

Presence in the South Snake Range confirmed but not within GRBA. Globally secure native intermountain species, variety *depressa* relatively rare in Nevada. Listed on the watch-list and ranked G5 T3T4 S3 by the NNHP; de-listed by the NNPS. Occurs on dry alkaline soils and with pinyon-juniper at middle elevations. Synonymous with *Haplopappus nutallii* var. *depressus*. Relevant references: Morefield (2001), Clifton (2004), USDA (2006).

Great Basin Fishhook Cactus (*Sclerocactus pubispinus*) - Cactaceae

Presence in park unconfirmed, but occurs in lower elevations below park boundary. Globally secure native species. In Nevada, limited to Baker area in White Pine County. Protected as a cactus in Nevada. Rocky flats and hillsides with *Atriplex*, *Artemisia*, and pinyon-juniper, generally below 7000 feet. Relevant references: Clifton (2004), USDA (2006).

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