## USDA FOREST SERVICE SOUTHWESTERN REGION SENSITIVE ANIMALS - September 21, 2007 version

| Common Name | *Scientific Name* | FWS Fed Status (NM FWS only) | Heritage Global Rank | Heritage State Rank AZ/NM | State | Forest of Occurrence | Limiting Factors/Threats | Justification | Management Recommendations |
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| **AMPHIBIANS (11)** | | | | | | | | | |
| SACRAMENTO MOUNTAINS SALAMANDER | *Aneides hardii* | | G3 | S3 | NM | LIN | Logging, reduction in ground and canopy cover, catastrophic wildfire. | Very limited distribution, occurs in only 3 mountain ranges in NM. Susceptible to fires. NMDGF threatened species. | Create defensible space by restoring fire to forests bordering potential Sacramento Mountains salamander habitat. Minimize soil disturbance during timber management operations; when possible, harvest when soils are frozen. Lop and scatter after thinning rather than pile burning to conserve soil moisture. Monitor to ascertain whether BMPs and mitigations can maintain populations. Any surveys should be conducted during summer rains between late June and August which is when this species usually emerges and is most active. |
| JEMEZ MOUNTAINS SALAMANDER | *Plethodon neomexicanus* | SOC | G2 | S2 | NM | SFE | Logging, reduction in ground and canopy cover, catastrophic wildfire. | Very limited distribution. Susceptible to fires. Considered imperiled both globally and within the state of NM. NMDGF threatened species which is currently proposed for endangered status. | Follow recommendations of 2000 Conservation Agreement. |
| BOREAL TOAD | *Bufo boreas boreas* | | G4 | SH | NM | CAR | Habitat loss, environmental contaminants, disease (chytrid fungus). | Recently, this species has experienced large declines within it's range in many areas of the Rocky Mountain region. These declines may be related to one or a combination of factors. Populations have not been detected in NM since 1986. Reintroduction efforts could take place on the CAR NF sometime after 2005. NMDGF endangered species. | In NM, the chief threat may be destruction of beaver ponds. Beneficial management actions include: managing for beavers within boreal toad habitat; protection and restoration of springs, streams and meadows at higher elevations; and reduction of fire threat and avoiding prescribed burns in spring. |
| ARIZONA TOAD | *Bufo microscaphus* | | G3/G4 | S3S4/S2 | AZ/NM | A-S, COC, PRE, TON, GIL | Habitat alteration due to change in riparian corridor, non-native predators, improper livestock grazing in riparian areas. Hybridization with Woodhouse toad has been thought to be a threat in dammed aquatic systems. | Local declines- decreasing population numbers and distribution. The status of the species in NM is mostly unknown, although studies (1995) indicated the species was declining in AZ. The species is vulnerable in AZ and imperiled in NM. As mentioned, few studies have occurred; however, there appear to be local declines, with decreasing population numbers and distribution. | The species should benefit from protection and restoration of riparian areas. Newly metamorphosed individuals can be surveyed during daylight hours. Adults are primarily nocturnal except during the breeding season. |
| WESTERN BARKING FROG | *Eleutherodactylus augusti cactorum* | | G4T3 | S1 | AZ | COR, TON | Habitat loss, climatic fluctuations. | Small, isolated populations are vulnerable to human activities and also to natural extinction due to climatic fluctuation, disease, chance, or other factors. Because populations are estimated to be so small, stochastic events threaten their persistence. Considered critically imperiled in AZ and is an AZ Species of Special Concern. | Management needs include: determining the extent of habitat; monitoring known populations; gathering information on ecology and life history; and monitoring collection potential at known occurrences. Habitat needs should be considered when deciding on access management in occupied and potential habitat. |
| LOWLAND LEOPARD FROG | *Rana yavapaiensis* | | G4 | S4/S1 | AZ/NM | A-S, COC, COR, GIL, PRE, TON | Habitat alteration/fragmentation, non-native predators. AZ - R. yavapaiensis are negatively impacted by introduced bullfrogs, crayfish, and predatory fish (Rosen et al. 1995, Fernandez and Rosen 1996). A chytrid fungus has infected populations of R. yavapaiensis as well as six other ranid frogs and two other amphibians causing mass die-offs and local extirpations (Sredl et al. 2000). Habitat fragmentation and water manipulation can lead to local extirpation by disrupting the metapopulation dynamics of lowland leopard frogs in arid landscapes (Jennings and Scott 1991). Other prominent factors are water pollution and improper livestock grazing. | Rapid population declines in Southeast AZ, possibly extirpated from NM and Southwest AZ, need additional information for NM. AZ - Adequate data is needed to determine status of Rana yavapaiensis in central AZ, but populations are thought to be stable (Sredl et al. 1997a). The species is declining in southeast AZ and is extirpated from southwestern AZ (USDI, FWS 1991; Sredl et al. 1997b). In NM it is considered critically imperiled and is a NMDGF endangered species. | The greatest relate to addressing habitat alteration and fragmentation and the introduction of non-native predatory and competitive fishes, crayfishes, and frogs (see Jennings and Hayes 1994, Sredl et al. 1997). Habitat alteration is the result of agricultural practices, livestock grazing, development, and reservoir construction (see Jennings and Hayes 1994). Damming, draining, and diverting of water have eliminated habitat and fragmented formerly contiguous aquatic habitats. In many areas, fragmentation has been accentuated by introduced predatory fishes, crayfish, and bullfrogs. R. yavapaiensis has been replaced by introduced *R. berlandieri* along the Colorado and Gila rivers, Arizona (Clarkson and Rorabaugh 1989). These factors result in the blockage of potential dispersal corridors for recolonization. Habitat restoration/preservation, with priorities on improving habitat connectivity, water quality, and control of introduced species is important. Captive rearing and translocations programs could be implemented. |

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| TARAHUMARA FROG | *Rana tarahumarae* | | G3 | SX | AZ | COR | This species has been extirpated from AZ since 1983. Recent translocations have taken place and need to be monitored to determine population status/stability. | No Tarahumara frogs, larvae, or eggs have been seen in AZ since May 1983 (Hale and May 1983, Hale and Jarchow 1988, Hale 1992, Sredl et. al, 1997, AZGFD unpublished data). Tarahumara frogs were translocated into AZ in June 2004 into Big Casa Blanca Canyon, Santa Rita EMA on the COR. Survival, reproduction, and movements should be studied. | Restoration plans calls for reestablishing the frog in at least two of its historical localities in AZ (Big Casa Blanca Canyon in the Santa Rita Mountains, Sycamore Canyon in the Pajarito Mtns.) (Rorabaugh and Humphrey 2002). As of late 2002, several hundred captive-reared frogs and larvae were available for eventual release (Rorabaugh and Humphrey 2002). There is a lack of information explaining cause(s) of extirpation, but possible actions could include water quality surveys to monitor acidification and presence of heavy metals, elimination/reduction of introduced species, including predaceous fish (green sunfish and bluegill) and bullfrogs. Efforts should coordinate with existing protection program (AZGFD). |
| NORTHERN LEOPARD FROG | *Rana pipiens* | | G5 | S2/S1/S1 | AZ/NM/TX | A-S, CAR, COC, KAI, SFE, TON | Habitat loss, non-native predators, disease. AZ - Two of the main threats to this species are habitat destruction and pollution. Also they are collected for biological supply houses and fishermen use them for bait. | Rapid population declines in AZ and NM throughout large range. Many local populations have been lost and it is an AZ Species of Special Concern. The species is considered imperiled in AZ and critically imperiled in both NM and TX. | Preserve/restore/develop aquatic habitats that can be occupied by this species. Restrict/control presence of introduced fish and bullfrogs in localities occupied by leopard frogs. FWS Contaminant Hazard Review (CHR) series mentions this species. Pesticide use may be deleterious if substances enter frog habitat. |
| PLAINS LEOPARD FROG | *Rana blairi* | | G5 | S1/S4/S5/S5 | AZ/NM/OK/TX | LIN, CIB | Habitat alteration and loss, non-native predators. | Small number of isolated breeding populations, population trends unknown for AZ and NM. The status of R. blairi had not been assessed in NM, but declines had been reported in other parts of its range (Jennings, 1995) with only a few breeding populations known. AZ Species of Special Concern and critically imperiled in the state. | Where present, exotic species (e.g., fishes, bullfrogs) should be removed or controlled if possible and further introductions prohibited. Frequent monitoring is recommended in areas where exotic species may invade and detrimentally impact frogs. Long-term monitoring is needed to determine whether reported declines are only temporary. Re-establish breeding populations through translocation of eggs, tadpoles, or young frogs from thriving populations. |
| RAMSEY CANYON LEOPARD FROG | *Rana subaquavocalis* | | G1 | S1 | AZ | COR | Threats include natural flooding (which could destroy or degrade breeding sites), and exotic competitors (e.g., bullfrog), predators, or pathogens. | The Ramsey Canyon leopard frog is limited in distribution to a few drainages on the eastern slope of the Huachuca Mountains, where it occurs primarily in impoundments in oak woodland and grasslands. It is apparently extirpated from the type locality (Ramsey Canyon). Populations appear to be declining and recruitment is low at all known localities, except for Miller Canyon. The animals released there in 1999 produced at least 28 egg masses in 2000, and the population appears to be doing well. At two sites, Tinker Pond and Ramsey Canyon, chytrid fungus has been found in dead frogs. This fungus has been implicated in the declines of amphibians around the world, (Berger et al. 1998) and may play a role in the decline of *R. subaquavocalis* . | Suitable habitat should be surveyed for reintroductions. Eradication of bullfrogs in potential habitat. Restoration/protection of riparian, riverine, lacustrine, and lowland riparian (i.e., sycamore and cottonwood trees) habitats. An attempt to eradicate bullfrogs from Lower Garden Canyon Pond was unsuccessful. Alteration of riparian vegetation by livestock grazing to be an important factor in the decline of ranid frogs in California. Elimination of beavers, which create favorable habitat, and diversion of water for irrigation, likely contributed to the decline of populations that may have existed in the San Pedro River (about 8 km east of Ramsey Canyon). |
| GREAT PLAINS NARROW-MOUTHED TOAD | *Gastrophryne olivacea* | | G5 | S3/S1/S5/S5 | AZ/NM/OK/TX | COR | Stream/river modification, water table drawdown, improper livestock grazing, road development. | In NM the species is very localized and apparently of very low population density. It is considered critically imperiled in NM and is a state endangered species. This species is considered vulnerable in AZ and recent studies indicate that the species is declining in the state. | Tobosa grass still occurs in patches, such as along roadsides, or in a few large areas protected from erosion, but is no longer a significant vegetation community due to farming and cattle ranching. Roadside sloughs with dense grass are often suitable breeding sites; preventing grazing within these habitats may retain habitat availability. Meeting management needs while protecting natural drainage channels and swales may sustain habitat (these habitats have been filled in or modified in the past for agriculture and to protect roads from flooding). Surveys of artificial water sources such as irrigation and stock ponds may identify suitable breeding sites. |
| **BIRDS (41)** | | | | | | | | | |
| CLARK'S GREBE | *Aechmophorus clarkii* | | G5 | S2/S4 | AZ/NM | COC, TON | Gregarious behavior makes it highly susceptible to oiling mortality in wintering areas. Vulnerable to disturbance of nesting colonies. | This species is threatened by habitat degradation from seasonal recreational use of backwaters and coves used for breeding. Nests are relatively fragile. The species is considered imperiled in AZ and is an AZ Species of Special Concern. At this time it appears that this species is a transient to all AZ and NM Forests, except the COC where breeding is known to occur. | Minimize disturbance and protect breeding locations that include areas of historical breeding and current and likely recurring breeding. Reliable observations of one or more breeding pairs in appropriate habitat should minimally be used to identify important areas for this species. Be cautious about designating breeding areas based on observations that may represent single breeding events outside the normal breeding distribution. |
| BALD EAGLE | *Haliaeetus leucocephalus* | SOC | G5 | S2/S1/S3/NR | AZ/NM/OK/TX | ALL | The Bald Eagle was delisted on August 8, 2007. | Utilize the Bald Eagle Management Guidelines and comply with the Bald Eagle and Golden Eagle Act. | |
| NEOTROPIC CORMORANT | *Phalacrocorax brasilianus* | | G5 | S1N/S4 | NM | COR, GIL | Loss or degradation of limited breeding sites, disturbance of breeding colonies, fluctuations in food supply, and persecution. | Limited distribution with small numbers in NM. Only 50 pairs or fewer have been found in any season in the State. Species is considered critically imperiled in Arizona and, although thought to be secure in NM, it is a NMDGF threatened species. Likely a passage migrant to the COR NF in AZ and GIL NF in NM. | Habitat protection and enhancement are needed to perpetuate breeding populations, in particular is retention/development of stands of trees and shrubs in or near water. Managing for nesting substrate includes providing for large terrestrial snags through time or developing artificial structures in areas used by nesting colonies where natural habitat is decreasing. Avoid disturbing the species and habitat. Limiting factors include loss of habitat, pesticides, pollution, and probably food and weather. |

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| WHITE-FACE-IBIS | *Plegadis chihi* | | G5 | SNRB,S2S3/S1B,S4N/S4B | AZ/NM/TX | CIB (BK, KRB) | Destruction to wetland habitats, logging-clearcuts, pesticides in riparian zones, limited number of breeding locations, vulnerable to fluctuating water levels. | This species is considered imperiled in NM and is state listed as threatened in TX. It is likely a rare passage migrant on all Forests but the KRB and BK Grasslands of the CIB. It has been recommended for inclusion by Dr. Hart Swartz and warrants inclusion based on the criteria used. There are a relatively small number of breeding areas and the species is vulnerable to habitat alteration, disturbance during nesting, and pesticide contamination. | Vulnerable to habitat alteration: retain/restore woody deciduous species in appropriate habitats; avoid fluctuating water levels during nesting season; also avoid human disturbance during nesting season. Adults will desert nests if disturbed early in incubation; nestlings can suffer from exposure, predation and accidents if colonies are disturbed. Populations of white-faced ibis may be affected by trophic concentration of pesticide residues. Eggs harmed by pesticides; colonies susceptible to breeding failure in areas of pesticide contamination. |
| ZONE-TAILED HAWK | *Buteo albonotatus* | | G4 | S4/S3/S3 | AZ/NM/TX | A-S, CIB (KRB), LIN, TON | Loss of riparian nesting habitat and pesticide contamination issues, especially DDT. | This species is listed as threatened by the state of TX and is considered vulnerable (S3) in NM. It has been recommended for inclusion by Dr. Hart Swartz and does warrant inclusion based on the criteria used. | |
| NORTHERN GOSHAWK | *Accipiter gentilis* | | G5 | S3/S2 | AZ/NM | A-S, CAR, CIB, COC, COR, GIL, KAI, LIN, PRE, SFE, TON | Wildfire, logging - even age cutting, loss of prey habitat. | Trends are difficult to determine due to various methodologies used to track bird populations. Little historical information on goshawk densities exist. FWS Birds of Conservation Concern National Priority list. | Large, landscape-level ecological units need to be identified and managed in such a way that all necessary habitat attributes, from nesting sites to foraging areas, are available to support the species at the population level (NatureServe). NatureServe describes implementation of the USFS RM-217 *Goshawk Guidelines* under "Management Requirements." Fire can be beneficial to northern goshawks by perpetuating forest seres, which provide habitat for prey. Prescribed fire in ponderosa pine and mixed-species forests can perpetuate northern goshawk habitat and reduce fuel loading. Adult birds are rarely killed by fire. Fires in the early spring, before fledging, could result in mortality of juveniles. |
| NORTHERN GRAY HAWK | *Asturina nitida maximus* | | G4T4Q | S3/SAB,S1N | AZ/NM | COR, GIL, TON | Preservation of mesquite bosques to prevent extirpation. Threats include loss of nesting habitat to urbanization and conversion for agriculture (AZGFD, 1988); (AZGFD, 1996) | In AZ, there were about 55 nesting pairs in the mid 1980's. This species is considered vulnerable in AZ and critically imperiled in NM. It is also state listed as threatened in Texas. Population is apparently stable in AZ where the species is considered vulnerable. species is an AZ Species of Special Concern. Occasional occurrences in NM, although breeding population may have been extirpated. FWS Birds of Conservation Concern National Priority list. | Preserve mesquite bosques to prevent extirpation. Recent scrub invasion in AZ since the early 1900s along San Pedro has afforded increased habitat. Removal of livestock from riparian areas and adjacent mesquite habitat has allowed vegetation recovery and a hawk population increase. See Glinski (1988) and Lefranc and Glinski (1988) for management recommendations. |
| COMMON BLACK-HAWK | *Buteogallus anthracinus* | | G4G5 | S3/S2 | AZ/NM | A-S, COC, COR, GIL, PRE, TON | Vulnerable to disturbance, reduction/contamination of aquatic prey species. Threatened in the U.S. by the alteration or elimination of riparian habitat through clearing, water diversion, diking and damming, and lowering of the water table by underground pumping (Schnell et al. 1988, Schnell 1994). At least 95% of the riparian habitat in the southwestern U.S. has been lost, altered, or degraded (Ohmart 1994). | According to NatureServe, the U.S. population is thought to be stable but precarious. The species is listed as threatened in NM and TX and is an AZ Species of Special Concern. It is also on the FWS Birds of Conservation Concern National Priority list. | Management recommendations include: protecting and enhancing frog and fish populations near nest sites and favoring regeneration of gallery forest trees by limiting or eliminating livestock grazing. See Lefranc and Glinski (1988) for information on research needs and management recommendations specific to the Southwest. |
| SWAINSON'S HAWK | *Buteo swainsoni* | | G5 | S3/S4/SEB,SNRN/S4B | AZ/NM/TX/OK | CIB (KRB, BK), LIN | Improper livestock grazing, pesticides in South America, habitat loss in breeding and non breeding areas. | Population numbers have declined over western U.S. This species is likely a rare transient on all of the Forests, except the LIN where it occurs as a rare summer resident. The species also occurs on the KRB and BK Grasslands on the CIB. | Prescribed fire can enhance habitat and increase prey base. Burning in grasslands where scattered trees are retained benefits Swainson's hawks, particularly in areas where nesting sites are limited. Prescribed burning plans should strive for creation of maximum interspersion of opening and edge, with high vegetation diversity. Reseeding of perennial grasses and rest from livestock grazing may improve results. Burning should be deferred until nesting is completed in areas where impact to breeding Swainson's hawk may occur. Fires that kill or otherwise alter unoccupied nest trees may disrupt reproduction if acceptable nest trees are scarce. Low-severity fires probably have little direct effect on Swainson's hawks. Management that benefits prairie dogs should also benefit Swainson's hawks. |
| FERRUGINOUS HAWK | *Buteo regalis* | | G4 | S2B,S4N/S2B,S4N/S1B,S4N/S2B,S4N | AZ/NM/OK/TX | CIB (KRB), COC | Habitat loss due to agricultural development, poisoning of prey species, habitat fragmentation. | Reports of local declines, continued loss of habitat, sensitivity to disturbance, and relatively low numbers show this species should be carefully watched and regularly re-evaluated. FWS Birds of Conservation Concern National Priority list. This species occurs on the CIB (KRB) and is a winter resident on the COC. For other Forests, it appears to be a transient or does not occur. | Protect large tracts of native prairie. Where possible, avoid seeding of exotic grasses and cultivating habitat. Leave scattered islands of shrubby vegetation in crested wheatgrass fields so that the islands make up a minimum of 20 percent of the total area. Improve prey habitat by providing native shrub vegetation and increasing edge. If brush is chained, windrow it to provide cover for prey. When converting land from sagebrush steppe to herbaceous grassland, create a mosaic of treated (chained or disked) and untreated areas. To attract small rodents, maintain or restore sagebrush-grass rangeland by removing/reducing invading pinyon pine /Utah juniper stands. Retention of some pinyon pine will benefit rodents. |

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| AMERICAN PEREGRINE FALCON | *Falco peregrinus anatum* | | G4T3 | S4/S2 | AZ/NM | A-S, CAR, CIB (except BK), COC, COR, GIL, KAI, LIN, PRE, SFE, TON | Pesticides/chemicals, wind turbines. | Widespread distribution; large number of occurrences, many in remote wilderness. Had been extirpated in E. U.S. and SE Canada due to pesticide poisoning; greatly reduced numbers over many other portions of its range; numbers currently increasing and recovery objectives have been met in most areas. NMDGF threatened species. Recently delisted by FWS; trends and status are still under post listing review. The species is also on the FWS Birds of Conservation Concern National Priority list. | Incubating birds are generally silent, unobtrusive, and easily overlooked. When the nestlings are older or fledge, adults may boldly react to intruders. Humans should immediately vacate area under such conditions. Because peregrine falcons require open areas for hunting, fires could be beneficial provided burning led to an increase of prey species; early season fires near eyries could disturb young or nesting pairs. Burning objectives should include creating a mosaic of habitats and maintenance of abundant prey species. There are no known range-wide threats to the peregrine falcon in AZ. However, individual eyries are subject to disturbance by recreationists. |
| WHITE-TAILED PTARMIGAN | *Lagopus leucurus* | | G5 | S1B,S1N | NM | CAR, SFE | Sensitive to human disturbance, improper livestock grazing. | Northern NM is southern most portion of range. Species was locally common over many parts of their range, but in NM the species has become quite rare since the turn of the century. The species was reported only twice during the five year period 1989-93. NMDGF endangered species. | Protection of the limited alpine and tundra habitats within the state is essential to preservation of white-tailed ptarmigan in NM. In addition, trapping and releasing of birds into favorable habitat should help safeguard against stochastic events. |
| LESSER PRAIRIE-CHICKEN | *Tympanuchus pallidicinctus* | C | G3 | S2B, S2N/S1/S2B | NM/OK/TX | CIB (KRB, BK) | The primary threat is habitat loss, fragmentation and degradation, principally due to the conversion of native sand sagebrush and shinnery oak rangeland to cropland and "improved" pastures, improper livestock grazing, and brush control. | FWS candidate species and on the Birds of Conservation Concern National Priority list. Overall trend is stable, following huge declines in the 90's; however there have been precipitous declines within range in NM and it is considered imperiled in NM and OK, and critically imperiled in TX. | Mixed-grass communities with a high percentage of forbs and scattered low shrubs can be promoted and maintained with proper grazing management (utilization levels should be < 25-35% of annual growth) and careful use of herbicides or prescribed fire. High-quality nesting habitat has an abundance of ≥ 50 cm grasses. Careful use of herbicides can reduce shrub density and increase grass and forb density on overgrazed ranges. However, herbicides should not be applied unless perennial grasses are present, to avoid establishing grasses of little value to prairie chickens. Because of their importance as food and cover, retain 30-50% shrub cover distributed in a mosaic of treated and untreated areas. Herbicide treatment to control shinnery oak might adversely impact nesting lesser prairie-chickens. Prescribed burns should increase green forage, native annual forbs, and insect abundance. Burns should be limited to 20-33% of the management unit to preserve residual nesting cover. Buffer zones and other restrictions on activities should be set-up within 3 km of a lek (the usual distance to nests). Artificial leks can be created in extensive blocks of homogeneous habitat where natural leks are absent. Artificial leks should be at least 1.2 km apart and on slightly elevated ground with short, scattered vegetation. Food plots are not recommended because they are seldom used and do not increase population size. |
| GOULD'S WILD TURKEY | *Meleagris gallopavo mexicana* | | G5T3 | S1/S1 | AZ/NM | COR | Habitat loss. | Population was extirpated in AZ, although many reintroduction efforts have helped to establish small populations. Small, relatively stable populations occur in NM and AZ where it is considered critically imperiled. NMDGF threatened species. | Grazing by livestock should allow for adequate herbaceous biomass to support invertebrate foods and cover for young. Thinning and an interspersion of forest structure benefits turkeys in unnaturally dense forests. Protection of habitat, enforement to prevent poaching, avoiding excessive disturbance in nesting and roosting habitat, undue competition with livestock, and hybridization with non-native turkeys are essential to preserving this subspecies in the Southwest. Although populations continue to be small, they may be adapted to local conditions, hence augmentation with stock from elsewhere is not recommended. Prescribed fire can be used to stimulate the growth of food plants and promote early-spring green-up of grasses. Fire can also reduce litter, exposing seeds and insects, and reduce brush so that turkeys can spot predators. Fire can be used to create edges to increase nesting habitat and may reduce parasites such as ticks and lice. However, spring fires can destroy nests. Fast-moving fires may kill poults, but once wild turkeys can fly, fires are probably not much of a threat. |
| MOUNTAIN PLOVER | *Charadrius montanus* | | G2 | S1B, S2N/S2B,S4N/S2B/S2 | NM/OK/TX | CIB (KRB) | Plowing during nesting season, revegetating disturbed areas, conversion of grasslands to agriculture. | Large population declines in 50-90% of range. Critically imperiled in NM and imperiled in TX and OK. This species is also globally imperiled and on the FWS Birds of Conservation Concern National Priority list. | Management should maintain short, sparse vegetation through protection of prairie dog towns, grazing by livestock/buffalo, and/or prescribed burning. Off-road vehicle access should be restricted between 1 April and 1 August in plover habitat. Areas of potential plover habitat should not be converted to agriculture nor have "range improvements" that increase forage for livestock (particularly planting exotic grasses). Efforts should be made to |
| COMMON GROUND DOVE | *Columbina passerina* | | G5 | S4/S1 | AZ/NM | CIB, GIL | Loss of native shrubland and riparian areas. | Rare, no current documentation of nesting within NM. Survey-wide BBS trends show a significant decline of -1.8% per year from 1966-1999. More recent increases occurred in Texas (4.8%). Non-significant declines during the same period occurred in AZ. Critically imperiled in NM and a NMDGF endangered species. NM Forests only. | Conservation of existing habitat and restoration of degraded habitat are a priority for this species, including riparian zones where development, water management activities, grazing, and agricultural practices have had significant impacts. Developing alternatives to minimize disturbance and improve habitat in citrus orchards and other agricultural operations may be a management option. It has been suggested that expansion of this species in southern CA may |
| WESTERN YELLOW BILLED CUCKOO | *Coccyzus americanus occidentalis* | C, west of Rio Grande corridor | G5T3 | S3/S3/S5/S4 | AZ/NM/TX/OK | A-S, CAR, CIB (except BK), COC, COR, GIL, PRE, SFE, TON | Decrease in distribution and population can be attributed primarily to habitat loss, modification, and fragmentation; decreases in water tables; and possibly the use of pesticides. Primary cause for decline is extensive loss of riparian forest habitat throughout the west due to urban and agricultural development, livestock grazing, and water impoundments. | BBB trends indicate population declines of 1.6% per year in N. America. Riparian habitat has declined up to 90% in AZ and NM thus negatively effecting this species. Overall declining in western U.S. FWS candidate species for federal listing and on the Birds of Conservation Concern National Priority list. | Protection/restoration of riparian gallery forests and deciduous woody shrubs is important for providing habitat for recovery of populations. Protection/restoration of riparian habitat, especially where past vegetation clearing, stream diversion, water management, agriculture, urbanization, overgrazing, and recreation has reduce habitat and habitat effectiveness. Controlling invasive plant species and re-establishing native species would improve habitat and potentially provide better invertebrate forage (primarily caterpillars). |

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| CACTUS FERRUGINOUS PYGMY OWL | *Glaucidium brasilianum cactorum* | Recently removed from federal list. | G3 | S1 | AZ/TX | COR | Loss of habitat, human encroachment. | Recently taken off the federal list of species by the FWS due to a Distinct Population Segment issue. Species is state listed as threatened in TX and is a species of special concern in AZ. | |
| WHISKERED SCREECH OWL | *Otus trichopsis* | | G5 | S5/S1 | AZ/NM | COR | Habitat loss or alteration. | Populations secure in Mexico and Central America where human activities are limited. Detected in NM in early 90's. Small populations occur in Peloncillo and Animas Mountains. NM and AZ are northern most part of range. NMDGF threatened species and considered critically imperiled in NM. FWS Birds of Conservation Concern National Priority list. | In New Mexico, the protection of habitat is the prime consideration in conserving the whiskered screech-owl -- particularly areas of pine-oak and oak woodlands in the Peloncillo and probably the Animas Mtns.. in Hidalgo County. Such protection should focus especially on preventing activities that might reduce the habitat suitability for this owl, such as the removal of trees and associated vegetation. In addition, the owl should be spared excessive |
| BURROWING OWL (Western) | *Athene cunicularia hypugaea* | | G4T4 | S3/S3/S2 | AZ/NM/ TX | A-S, CAR, CIB (KRB, BK), COC, GIL, KAI, LIN, SFE | Habitat alteration/fragmentation, loss of edge habitat. | Widespread distribution in N. America; relatively common in appropriate habitat in some areas, but habitat alteration and other factors are causing population declines in many areas. Considered vulnerable in AZ and NM, and imperiled in TX. FWS Birds of Conservation Concern National Priority list. | A negative response is expected where shrubsteppe habitats, used for breeding in the Intermountain West, are grazed. Poisoning and nest site loss results from human efforts to control squirrels and prairie dogs. When caught outside their burrows during fire, adult burrowing owls probably escape fire easily; some young that cannot yet fly may be injured or killed. |
| BOREAL OWL | *Aegolius funereus* | | G5 | S1 | NM | CAR, SFE | Logging, habitat alteration. | Widespread range, apparently large numbers and occurrences seem to make this species secure locally; however, information may be lacking about the species in NM. Southwestern most distribution is in NM. NMDGF threatened species and critically imperiled in NM. | In New Mexico, the protection of habitat is the prime consideration in conserving the boreal owl in the state -- especially areas of spruce-fir forest and associated habitats in the San Juan, Sangre de Cristo, and possibly the Jemez Mtns. Such protection should include setting aside areas wherever these owls have been found, with a particular emphasis on retaining forest habitat in its natural state. |
| BUFF-COLLARED NIGHTJAR | *Caprimulgus ridgwayi* | | G5 | S2S3/S1 | AZ/NM | COR | Improper livestock grazing, human disturbance. | In general, it appeared that the buff-collared nightjar was expanding as a summer resident in the U.S., centering on SE AZ. However, its progress has been slow, and the northern area of occupancy may prove to be temporary or one of irregular occurrence at best. The species was last reported in NM in 1985 at two locations; they were not found on regular surveys in Guadalupe Canyon during the period 1987-95. Considered critically imperiled in NM and is a NMDGF endangered species. | Continue to search for this species in the state, and to work with public and private land managers to protect and enhance Guadalupe Canyon and similar habitats for this species. |
| BROAD BILLED HUMMINGBIRD | *Cynanthus latirostris* | | G4 | S3/S1 | AZ/NM | COR | Loss of riparian woodlands, predation upon nests. | Common in southern NM, small localized populations in AZ and NM. NMDGF threatened species and considered critically imperiled in the state. Considered vulnerable in the state of AZ. FWS Birds of Conservation Concern National Priority list. | Monitor the status of the breeding population in Guadalupe Canyon, to search for additional populations elsewhere, and to encourage public and private land managers to protect riparian woodlands favored by this species |
| WHITE EARED HUMMINGBIRD | *Hylocharis leucotis* | | G5 | S1S2/S1 | AZ/NM | CIB, GIL, COR | Improper livestock grazing, logging, road construction. | No declines have been reported in the larger portion of their range; however, the species is considered critically imperiled in both AZ and NM and there are only small populations in both states. It is likely that habitat destruction has reduced overall numbers. AZ Species of Special Concern and state listed as threatened in NM. Likely a very rare migrant on any FS lands. | |
| VIOLET-CROWNED HUMMINGBIRD | *Amazilia violiceps* | | G5 | S3/S1 | AZ/NM | COR | Urban development, loss of riparian habitat, improper livestock grazing. | Limited distribution in AZ and NM. Critically imperiled in NM and is state listed as threatened. Considered vulnerable in AZ and is a Species of Special Concern. Listed as threatened in Mexico. | |
| LUCIFER HUMMINGBIRD | *Calothorax lucifer* | | G4G5 | S2/S1 | AZ/NM | COR | Habitat loss. | Limited distribution in AZ and NM. Critically imperiled in NM and is listed as a NMDGF threatened species. Considered imperiled (S2) in AZ. FWS Birds of Conservation Concern National Priority list. | |
| COSTA'S HUMMINGBIRD | *Calypte costae* | | G5 | S5/S1 | AZ/NM | GIL | Loss of native xeric hillside vegetation and adjacent riparian habitat in Southwest NM. | Limited distribution in NM. In 1993, up to seven individuals occupied Guadalupe Canyon from late March to mid-June, and breeding was suspected and the species staged an impressive invasion in 1995, with reports from four locales, including two males east to the San Andres Mountains (BISON-M, 2005). Critically imperiled in NM and state listed as threatened. For this list, the species is being included for the GIL only, as it is considered secure in AZ and globally. | |
| EARED QUETZAL | *Euptilotis neoxenus* | | G3 | S1N/S4 | AZ | COR | Loss of nesting trees from increased logging pressure, destruction of habitat from agricultural encroachment, and increased human disturbance. | Relatively small geographic range, low and local abundance within range, combination of threats which may increase in the future, and lack of many protected occurrences. | |
| GILA WOODPECKER | *Melanerpes uropygialis* | | G5 | S5/S2 | AZ/NM | GIL | Habitat loss and degradation/fragmentation. | Results from BBS indicate a non-significant decline in AZ. Not enough monitoring in NM to determine populations trends. Is considered imperiled (S2) in NM and is listed as a NMDGF threatened species. For this list, the species is being included for the GIL only, as it is considered secure in AZ and globally. | |
| NORTHERN BEARDLESS-TYRANNULET | *Camptostoma imberbe* | | G5 | S3/S1 | AZ/NM | COR | Species is most vulnerable to the loss of habitat, including the clearing or other destruction of dense mesquite and associated growth (Vegetation clearing, burning and improper livestock grazing). | Very small and localized populations in the Southwest. Considered critically imperiled in NM and listed as a state endangered species. Included on the FWS Birds of Conservation Concern National Priority list. | |

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| NORTHERN BUFF-BREASTED FLYCATCHER | *Empidonax fulvifrons pygmaeus* | | G5T5 | S1/SHB | AZ/NM | COR | Causes of the declines are not known, but probably are related to changes in forest stand densities and control of forest fires. Loss of habitat. | The species declined sharply after about 1920 and is now limited primarily to the Huachuca Mountains. Range and numbers area thought to be declining in AZ. Species is considered critically imperiled in AZ and is a Species of Special Concern. Species is on the FWS Birds of Conservation Concern National Priority list. | |
| THICK-BILLED KINGBIRD | *Tyrannus crassirostris* | | G5 | S2/S1 | AZ/NM | COR | Logging, improper livestock grazing, water diversion. | Limited occurrence in NM. AZ and NM are northern most part of range. Population trends of this species are unknown. A rare bird that was first discovered in the U.S. in 1958, the range of this Mexican species has expanded northward since the middle of the 20th century. Critically imperiled in NM and a NMDGF endangered species. In AZ it is considered imperiled and is a Species of Special Concern. | |
| LOGGERHEAD SHRIKE | *Lanius ludovicianus* | | G4 | S4/S3/S4 | AZ/NM/OK | CIB ( BK, KRB) | Fire exclusion, pesticides, loss of wintering habitat/quality. Dependency on edge habitat which increases predation pressure. | This species has been declining in N. America since the 60's. Decline has been recorded in all regions of the country, even those areas with great amounts of habitat. Is considered moderately threatened throughout its range. FWS Birds of Conservation Concern National Priority List. It is a Special Concern Species in OK. In NM it is considered vulnerable and is known to occur on the CIB, including the BK and KBR. NM Forests only, considered secure (S4) in AZ. | |
| ARIZONA BELL'S VIREO | *Vireo bellii arizonae* | | G5T4 | S4/S2 | AZ/NM | CIB (BK only), GIL, LIN | Improper livestock grazing, pesticides, habitat fragmentation, loss of riparian habitat. | BBS data indicate significant survey wide declines averaging 3.2% per year. The species is very limited in its distribution and is declining across its range. It is negatively impacted by riparian habitat loss from agricultural, water, road and urban development. Considered imperiled in NM and is a NMDGF threatened species. FWS Birds of Conservation Concern National Priority list. Sensitive for NM Forests only as it is considered secure globally and apparently secure (S4) in AZ. | |
| GRAY VIREO | *Vireo vicinior* | | G4 | S4/S3 | AZ/NM | CAR, SFE, CIB, GIL, LIN | Even aged forest mgmt, habitat fragmentation, improper livestock grazing, cowbird parasitism. Changes in fire regime that bring about an increase in fire extent or frequency may be detrimental. | Population declines in northern AZ and northwestern NM. Apparently secure (S4) in NM; however it is a NMDGF threatened species. It is also on the FWS Birds of Conservation Concern National Priority list. This species is likely a rare transient to the Forests within NM. In AZ, the KAI is within breeding range; however the species is considered apparently secure in the state (S4); therefore no AZ Forests are included. | |
| GRAY CATBIRD | *Dumetella carolinensis* | | G5 | S1/S4/S4B/S4B | AZ/NM/OK/TX | A-S | Elk and improper livestock grazing in riparian habitats. | Population trends are unknown for AZ. For their entire range BBS data from 1991-1996 indicate that populations are declining in the SE and over the NE portion of the periphery of their range. Populations are relatively stable over remainder of breeding range. AZ is southern most portion of range. Considered critically imperiled in AZ and a Species of Special Concern. Apparently secure in NM, OK, and TX (S4), only included for AZ Forests where the species is likely to occur. | |
| ROSE-THROATED BECARD | *Pachyramphus aglaiae* | | G4G5 | S1,SR | AZ | COR | Improper livestock grazing, de-watering wetland habitats, habitat fragmentation, disturbance by birdwatchers, urban development. | Extirpated in the lower Rio Grande valley coincident with plant community changing. Decline of large trees attributed to long term lack of flooding. Breeding populations have fluctuated in the past in AZ. Very local breeding species on northern periphery of range in U.S. There are no trend info. or pop. estimates for AZ; however, total observed nesting pairs currently range from 2-7 annually in two locales; occurrences have been extirpated from other local areas. | |
| ABERT'S TOWHEE | *Pipilo aberti* | | G3G4 | S3/S1 | AZ/NM | A-S, COC, COR, PRE, TON, GIL, CIB | Improper livestock grazing, loss of riparian habitat, parasitism by cowbirds. | Small geographic range and extensive loss and modification of native riparian habitat indicate high rank. In the Gila Valley, recent counts amounted to about 20% of counts from 15 to 25 years ago, furthermore, incidental observations in recent years also suggested that numbers were reduced from 15-25 years ago. The species is critically imperiled in NM and is a NMDGF threatened species. The species is a rare permanent resident that breeds in the GIL NF, and is a common transient (spring and fall) on the CIB (BISON-M). | |
| ARIZONA GRASSHOPPER SPARROW | *Ammodramus savannarum ammolegus* | | G5TU | S2/S1 | AZ/NM | COR | Loss and degradation of native grassland habitat. | BBS data indicate a significant pop. decline (4.4% per year) in N. Amer. between 1966 and 1989 and 4.5% in western U.S. It is considered imperiled in AZ and is an AZ Species of Special Concern. In NM it is considered critically imperiled and is a NMDGF threatened species. | |

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| BAIRD'S SPARROW | *Ammodramus bairdii* | | G4 | S2N/S2N/S2B | AZ/NM/TX | A-S, CIB (KRB, BK), COR, LIN | Improper livestock grazing, conversion of grasslands to agriculture, parasitism by cowbirds. | Restricted range, spotty distribution, recent rapid and long-term pop. and range declines, few protected occurrences, and habitat selectivity are cause for concern. Species is considered imperiled in NM and is a NMDGF threatened species. It is also considered imperiled in AZ and is a AZ Species of Special Concern. Furthermore, the species occurs on the FWS Birds of Conservation Concern National Priority list. | They respond to management: 2-3 years after fire Baird's sparrows are usually more abundant. Baird's sparrows do not like thick accumulations of litter. Occasional burning is suggested to maintain dense graminoid vegetation and reduce the number of shrubs, but not so often that the litter never accumulates. Moderate mowing is beneficial in wetter areas, but in arid habitat, mowing may be detrimental. Baird's sparrows have responded negatively to improper grazing practices in grasslands of the southwest and Mexico. Even moderate or lightly grazed pastures have fewer birds than undisturbed habitats and grazing could be detrimental in the more arid areas. Conserving and restoring larger patches of southwest grasslands should improve fitness and survival of migrant Baird's sparrows. Quantitative data on habitat requirements is needed, including the relationship between patch size and numbers of Baird's sparrows. |
| VARIED BUNTING | *Passerina versicolor* | | G5 | S3/S1/S4 | AZ/NM/TX | COR, LIN | Reduction in dense shrubby habitat. | Small population occurs in NM (2-5 territories). Perhaps locally common in AZ; however is considered vulnerable in the state (S3). The species is considered critically imperiled (S1) in NM and is a NMDGF threatened species. | |
| **CLAMS (3)** | | | | | | | | | |
| CALIFORNIA FLOATER | *Anodonta californiensis* | | | | AZ | A-S, COC | Deterioration of stream habitat quality through improper livestock grazing, irrigation diversions, urbanization, and sedimentation. Loss of native fishes that were hosts for glochidia. Non-native species predation. | Declining populations and distribution range-wide. This is a freshwater clam that lives in shallow areas of unpolluted perennial waters which is dependent on host fish during its larval stage. AZ has noted that possible declines may be linked with reduced populations of native fish that serve as larval hosts. | Inventory is needed, particularly in drainages in the Great Basin, as is continued monitoring of known populations. Also identification of potential for restoration of original habitat. As the species is closely associated with species of fish, once the host or hosts are known, a total fish-molluscan management plan should be developed to avoid developing a habitat to improve one native species at the expense of another. |
| LILLJEBORG'S PEA-CLAM | *Disidium lilljeborg* | | G5 | S1 | NM | SFE | The restricted population of this unique pea-clam is vulnerable to contaminants, sedimentation, and stochastic natural events (fire, drought). Potential biological threats are posed by introduction and establishment of the zebra mussel in Nambe Lake from fish stocking practices and/or accidental bait bucket introduction. | The population of these clams is low at known locations; therefore, alteration (e.g., by pollution) could reduce habitat suitability and threaten the species. The species has a very localized distribution and is found on the SF. Critically imperiled in NM, and a NMDGF threatened species. | Maintain watershed health. Prevent water contamination. |
| SANGRE DE CRISTO PEA-CLAM | *Disidium sanguinichristi* | | G1Q | S1 | NM | CAR | Mining, fire mgmt, dewatering. | Some questions currently on taxonomy; however, only known to occur on CAR. Critically imperiled globally as well as within NM and a NMDGF threatened species. | Maintain watershed health. Prevent water contamination. Taxonomic status uncertain, needs further study. |
| **CRUSTACEANS (2)** | | | | | | | | | |
| CLAM SHRIMP | *Eulimnadia follisimillis* | | G2 | S1 | NM | CIB | Ephemeral wetland loss from agricultural practices, improper grazing, point and nonpoint discharge, highway improvement, mosquito abatement. | Only known occurrence of this species is in the Zuni Mountains on the CIB NF. The species is imperiled globally and is considered critically imperiled in NM. | Protect ephemeral wetlands from agricultural development, overgrazing, contaminants, highway development, mosquito abatement projects, and other disturbances that will affect the structural integrity of the wetland or its water quality. |
| FAIRY SHRIMP (new species) | *Streptocephalus n. sp.1* | | G1 | S1/S1 | AZ/NM | CIB, LIN | Ephemeral wetland loss from agricultural practices, improper grazing, point and nonpoint discharge, highway improvement, mosquito abatement. | Narrow endemic found in Blue Lake, CIB NF in Zuni Mtns and on the Smokey Bear Ranger District, LIN NF. The species is considered critically imperiled both globally and within NM. | Protect ephemeral wetlands from agricultural development, overgrazing, contaminants, highway development, mosquito abatement projects, and other disturbances that will affect the structural integrity of the wetland or its water quality. |
| **FISH (16)** | | | | | | | | | |
| BLUEHEAD SUCKER | *Catostomus discobolus discobolus* | | | S3/S2 | AZ/NM | CAR, A/S, COC | Streamflow and thermal alteration. Non-native competition and predation. Contaminants, sedimentation, habitat alteration. | Status of vulnerable (S3) in AZ and imperiled (S2) in NM. Although often common in the northern part of its range, the species has experienced a decline in abundance and distribution throughout the lower Colorado River basin. | |
| DESERT SUCKER | *Catostomus clarki* | | G3 | S3/S2 | AZ/NM | A/S, COC, COR, GIL, PRE, TON | Flow and thermal alteration. Non-native competition and predation. Dewatering, habitat alteration. | The desert sucker is listed as "species of concern" throughout its range as well as by the State of NM. NatureServe and The Nature Conservancy describe the status of the species as declining throughout its range. Additionally, the species conservation status is considered imperiled in NM and vulnerable in AZ. | |
| FLANNELMOUTH SUCKER | *Catostomus latipinnis* | | G3 | S2/S1 | AZ/NM | CAR could have indirect effects. Likely not on Forest. | Flow and thermal alteration, non-native competition and predation, contaminants, sedimentation, habitat alteration. | Federal species of concern for FWS in NM. Its global conservation status is considered vulnerable to local extirpation and extinction (G3). The species is in decline rangewide. It is listed by NatureServe as imperiled (S2) in AZ and critically imperiled (S1) in NM. | |

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| GREENTHROAT DARTER | *Etheostoma lepidum* | | G3 | S2 | NM | LIN could have indirect effects. Likely not on Forest. | Depleted surface flows, altered stream morphology, pollution. | NM listed as threatened and considered imperiled in NM. | |
| HEADWATER CATFISH | *Ictalarus lupus* | C | G3 | S1 | NM | LIN | Competition and/or hybridization with channel catfish in the greatly disturbed streams of NM has eliminated headwater catfish from most of original range (Sublette et al. 1990). | Critically imperiled (S1) in NM. Also has a status designation by the American Fisheries Society of "species of concern". There is a lack of status information on this species. | |
| HEADWATER CHUB | *Gila nigra* | C | UNK | UNK | AZ/NM | COC, GIL, TON | non-native predation and competition. Habitat destruction and degradation, dewatering and diversions. Improper livestock grazing, channelization, sedimentation caused by roads and concentrated recreation. Disease, population fragmentation, isolation. | Information on this newly described species is lacking. Status is similar to that of the Gila chub and the roundtail chub from which the species was separated and described. Species has declined significantly in abundance in many areas, due to habitat alteration and exotic species. NMDGF Endangered species. | |
| LITTLE COLORADO SUCKER | *Catostomus sp.3* | | G2 | S2 | AZ | COC, A-S (indirect effects as likely not on Forest Service lands {A-S only}). | Habitat degradation, predation. | Listed as a "wildlife of concern" in AZ. The global status of the species is imperiled, while also considered imperiled in AZ, the only state in which it occurs. | |
| LONGFIN DACE | *Agosia chrysogaster* | | G4 | S3/SNA | AZ/NM | A/S, COC, COR, GIL, PRE, TON | Non-native predation and competition. Habitat destruction and degradation. Dewatering and diversions. Improper livestock grazing, channelization, sedimentation, disease, population fragmentation and isolation. | Status of species in AZ considered vulnerable. Populations appear to be fluctuating up or down in some areas while stable in others. Species listed as threatened in NM. Threats are widespread and ongoing. | |
| MEXICAN STONEROLLER | *Campostoma ornatum* | | G3 | S1 | AZ | COR | Habitat loss, non-native predation, dewatering, sedimentation. | Global conservation status of vulnerable. Considered critically imperiled in AZ. American Fisheries Society species of "special concern". Endangered in Mexico. | |
| RIO GRANDE CHUB | *Gila pandora* | | G3 | S3 | NM | CAR, CIB, LIN, SFE | Threats are stream dewatering and habitat modification due to channelization. | Vulnerable throughout its range. Range has been reduced in the Rio Grande and Pecos River basins and now restricted to headwaters and small rivers where cover, undercut banks, and aquatic vegetation is susceptible to change. Species is listed as a sensitive species in R2 FS and by NMDGF. Has been recommended for inclusion by species experts. | |
| RIO GRANDE CUTTHROAT TROUT | *Oncorhynchus clarki virginalis* | | G4T3 | S2 | NM | CAR, GIL, LIN, SFE | Habitat degraded by improper livestock grazing and timber harvest; hybridization and competition with various introduced salmonids; dewatering caused by irrigation diversion; poor winter habitat, stream intermittency, and deteriorating water quality resulting from drought; susceptible to habitat loss/degradation resulting from wildfires; highly vulnerable to replacement by non-native trout; more vulnerable to angling than are coexisting trout; habitat is fragmented, and most populations are isolated in headwater habitats, and gene flow among populations is virtually nonexistent. | Imperiled in NM (S2). American Fisheries Society considers the subspecies of special concern. Range of the subspecies if very restricted and believed to be as little as 5-7 % of the historical range. According to BISON M, the species is located on the Lincoln NF. | |
| RIO GRANDE SUCKER | *Catostomus plebeius* | | G3 | SNA,S2 | NM | CIB, CAR, GIL, SFE | Hybridization with the introduced white sucker is the primary reason for decline in northern NM and southern CO; elsewhere, habitat modifications (elevated sediments and stream dewatering) have contributed to declines; some populations may have been extirpated by the introduction of predaceous northern pike. | Rangewide, the species is considered vulnerable (G3). In NM the species is considered imperiled (S2), and in CO critically imperiled (S1). Although populations are thought to be stable in the southern portion of their range, they appear to be decreasing in the north. Current distribution information is lacking. | |
| ROUNDTAIL CHUB | *Gila robusta* | | G3 | S2/S2 | AZ/NM | A/S, COC, CAR, GIL, TON, PRE | Aquifer pumping; stream diversion; reduction in stream flows; predation by and competition with non-native fishes. | Declining significantly in abundance in many areas. Considered imperiled (S2) in both NM and AZ. Has likely been extirpated from the Zuni and San Francisco River drainages in NM. NMDGF endangered species. | |

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| SONORA SUCKER | *Catostomus insignis* | | G3 | S3/S2 | AZ/NM | A/S, COC, COR, GIL, TON, PRE | Threatened by water diversion, altered hydrology, and competition/predation from non-native fishes. | Vulnerable in AZ and imperiled in NM. A decline in abundance is apparent for the southern part of its range with increasing threats from water diversion, altered hydrology, and competition/hybridization from/with non-native species. | |
| SUCKERMOUTH MINNOW | *Phenacobius mirabilis* | | G5 | S2 | NM | CIB (KRB) | Altered flow regimes, dewatering of riverine habitats. | Although this species is widespread and secure throughout much of its range (G5), it is imperiled (S2) in NM through the western and southeastern portions. NMDGF threatened species. | |
| ZUNI BLUEHEAD SUCKER | *Catostomus discobolus yarrowi* | C | G4T1 | S1/S1 | AZ/NM | CIB | Habitat loss, non-native predation, dewatering, sedimentation. | Species of special concern in AZ, and the American Fisheries Society considers them a species of concern. The historical range of the species is very limited to the Zuni River drainage. NMDGF endangered species. | |
| **INSECTS (21)** | | | | | | | | | |
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| SABINO CANYON DAMSELFLY | *Argia sabomp* | | G1 | S1 | AZ | COR | Use of fish toxicants to remove non-native fish, mosquito abatement, exotic crayfish, non-native fish, stream drying, flash floods, channelization. | Narrow endemic, know only in US from Santa Catalina Mtns. Populations size appears to be decreasing as the range has constricted in the last 35 years. Considered critically imperiled globally and within AZ. | Remove non-natives, survey before applying fish toxicants, limit water withdrawals, maintain habitat. |
| BLEACHED SKIMMER DRAGONFLY | *Libellula composita* | | G3 | SNR/SNR/SNR | AZ/NM/TX | CIB | Improper livestock grazing, possibly predation from fish or competition with other dragonflies. | Limited distribution, known only from 14 counties. Exemplary site protected; most sites probably on private land; however may occur on the CIB. This species is one of the rarest dragonflies in the west and is considered vulnerable globally. | Protect habitat from overgrazing, remove exotic species, protect water quality and quantity. |
| DASHED RINGTAIL | *Erpetogomphus heterodon* | | G3 | SNR | NM | GIL | Timber harvest, improper livestock grazing, and fires that destabilize streamflow. | Limited distribution to streams in Catron and Grant Counties on GIL. | Provide buffers for timber harvest, protect streams from overgrazing, maintain water quality and quantity. |
| ARIZONA SNAKETAIL | *Ophiogomphus arizonicus* | | G3 | S1 | AZ | COR | Timber harvest, improper livestock grazing, and fires that destabilize streamflow. | Limited distribution. Currently population trends are unknown; however the species is considered critically imperiled in AZ and is vulnerable globally. | Provide buffers for timber harvest, protect streams from overgrazing, maintain water quality and quantity. |
| A MAY FLY | *Lachiania dencyannae* | | G1 | S1 | NM | GIL | Stream degradation, sedimentation, increased water temperature. | Narrow endemic - has been found near East fork and mainstem Gila. The species is considered critically imperiled globally and within NM. | Provide buffers for timber harvest, protect streams from overgrazing, maintain water quality and quantity. |
| A MAYFLY | *Homoleptohyphes quercus* | | G2 | SNR | AZ | COC | Stream degradation, sedimentation, increased water temperature. | Narrow endemic. Only known from two counties in AZ. Originally located Oak Creek, Pine Flat Campground. | Maintain healthy riparian corridors. |
| PINALENO MONKEY GRASSHOPPER | *Eumorsea pinaleno* | | G1G3 | S1S3 | AZ | COR | Logging, improper livestock grazing, fire. | Endemic, very little know about the species. It is the most geographically restricted and rarest of all eumastacid genera in North America (HDMS). Wingless nature of species greatly impedes its dispersal from current known locations. Considered critically imperiled globally and in AZ. | Prevent overgrazing, uncontrolled wildfires. |
| BONITA DIVING BEETLE | *Deroneotes neomexicanus* | | G2 | SNR/S1 | NM/TX | LIN | Degradation of habitat - water quality and quantity. | Narrow endemic. Population trends unknown, but species is considered critically imperiled globally. Former FWS Category 2 Candidate Species. | Maintain water quality and quantity. |
| CHIRICAHUA WATER SCAVENGER BEETLE | *Cymbiodyta arizonica* | | G2 | S2 | AZ | COR | Aquatic habitat degradation, loss of water. | Limited distribution, considered imperiled globally and within the state of AZ. | Maintain water quality and quantity. |
| PARKER'S CYLLOEPUS RIFFLE BEETLE | *Cylloepus parkeri* | | G1 | S1 | AZ | TON | Requires water with high oxygen content, high sensitivity to pollution. Improper livestock grazing, mining, stream bed alteration. | Narrow endemic found only in Bloody Basin area. Considered critically imperiled both globally and within the state of AZ. | Maintain healthy riparian habitat, water quality and water quantity. |
| STEPHAN'S HETERELMIS RIFFLE BEETLE | *Heterelmis stephani* | C | G2 | S2 | AZ | COR | Requires water with high oxygen content, high sensitivity to pollution. Spring alteration from boxing, capping, piping, recreational impacts, improper livestock grazing, mining, or stream bed alterations. | Narrow endemic. FWS candidate species for federal listing. Considered imperiled globally as well as in AZ. | Maintain water quality and quantity. Protect water from pollution and nutrient inputs. |
| FERRIS' COPPER | *Lycaena ferrisi* | | G1 | S1S2 | AZ | A-S | Climate change, fire suppression, larval host plant is Rumex hymenosepalus. | Limited distribution, found in White Mountains of AZ. Critically imperiled globally and within AZ. Possibly only one metapopulation, very probable there are less than 20. | Consider prescribed fire or thinning to maintain open montane meadows. Avoid overgrazing of montane meadows. |
| HUACHUCA GIANT SKIPPER | *Agathymus evansi* | | G2 | SNR | AZ | COR | Habitat alteration, small population. Species is associated with agave plants, typically found between 5,600 and 5,800 feet. Larval host is Agave parryi. | Limited distribution, in AZ only known the Huachuca Mountains and vicinity. There are probably fewer than 20 metapopulations of this species and almost certainly fewer than 100. Some populations do occur in Mexico. Species is considered imperiled globally. | Preserve stands of its food plant, Agave parryi var. huachucensis. |
| CESTUS SKIPPER | *Atrytonopsis cestus* | | G3G4 | SNR | AZ | COR | All populations and their habitat should be protected. | Very rare species with a few locations in the Boboquivari mountains and adjacent foothills. Also the Atascosa, Tumacacori, Santa Catalina, and Galiuro Mountains. Very limited range in southern AZ and species should not be assumed to be secure. | Protect habitat. Conduct surveys before engaging in project that would alter thorn scrub grasslands. |
| FOUR SPOTTED SKIPPERLING | *Piruna polingii* | | G3 | SNR/SNR | AZ/NM | COC, COR, KAI | Possible current absences from some seemly suitable areas may reflect past disturbances; however, more research is needed. | Limited distribution in Huachuca and Chiricahua Mountains and Mogollon Rim areas of AZ. Probably more colonies in southeast AZ than elsewhere (Opler, 1999). | Long term: the population needs to be located, monitored and their habitat, food plant and conservation needs assessed. Short term: it would be advisable to conduct surveys in riparian areas or moist woodlands that are going to be disturbed. |
| POLING'S HAIRSTREAK | *Fixsenia polingi* | | G2T1 | SNR/S? | NM/TX | LIN | Improper livestock grazing, possibly exotic weeds and fire. Maintenance of oaks is important. | Very restricted range in NM. Rounded global status (T1) indicates critical imperilment. | Maintain oak woodlands. |

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| NOKOMIS FRITILLARY | *Speyeria nokomis nokomis* | | G3T1 | SNR/S1 | AZ/NM | COC, CAR | Herbicide, improper livestock grazing, hydrologic changes. Potentially overcollecting. | Narrow endemic. Limited range with few remaining sites and significant threats to habitat. Rounded global status (T1) is critically imperiled. Also considered critically imperiled in NM. | Protect marshes, wet meadows, and areas where host plant is present. |
| NITOCRIS FRITILLARY | *Speyeria nokomis nitocris* | | G3T3 | SNR/SNR | AZ/NM | COC, CIB, GIL | Herbicide, improper livestock grazing, hydrologic changes. Potentially overcollecting. | Narrow endemic that is considered vulnerable globally. Limited range with few remaining sites and significant threats to habitat. Found only in alpine meadows. | Protect marshes, wet meadows, and areas where host plant is present. |
| SACRAMENTO MOUNTAINS CHECKERSPOT BUTTERFLY | *Euphydryas anicia cloudcrofti* | | G5T1NX | SNR | NM | LIN | Improper livestock grazing, feral horses, recreation activities associated with Off Road Vehicles, camping, and wildfire. | Narrow endemic found only on and near the LIN. Previously proposed for federal listing as endangered by the FWS. | Protect meadows and host plants for larvae and adults. Restore meadows that have been lost to conifer encroachment. Restore natural fire cycle. |
| MOTH (Notodontid moth) | *Euhyparpax rosea* | | G1 | SNR | NM | GIL | Fire, invasive plants | Narrow endemic, known only from location near Silver City in NM. Species has been found from only one or two locations. Considered critically imperiled globally. | |
| NETWING MIDGE | *Agathon arizonicus* | | G1 | SNR | AZ | TON | Events that effect water flow or water quality. | Very limited distribution. Considered critically imperiled globally. | Protect water quantity and quality. |
| **MAMMALS (70)** | | | | | | | | | |
| ARIZONA SHREW | *Sorex arizonae* | | G3N2N3 | S2/S1 | AZ/NM | COR | Requires considerable log & dense vegetation cover; generally found near springs/water sources. | NMDGF listed species. AZGFD Wildlife of Special Concern. Population acutely restricted and declining; experiencing riparian habitat degradation; grazing and recreation altering necessary dense cover. | |
| CINEREUS (MASKED) SHREW | *Sorex cinereus cinereus* | | GN5 | S2 | NM | CAR, SFE | Highly restricted distribution in Southwest. | Highly associated with wet meadow/marsh habitats experiencing negative impacts; high forest zone species subject to habitat loss via climate change & other human-mediated causes; potential for competitive replacement by other shrew species, data deficient. Considered imperiled in NM. | |
| MERRIAM'S SHREW | *Sorex merriami leucogenys* | | G5 | S3,S2 | AZ/NM | A-S, CIB, COC, GIL, KAI | Resident of montane coniferous forests; primarily an arid-adapted shrew. | Restricted distribution; subject to habitat loss via climate change & other human-mediated causes. Nowhere abundant; at known sites, several hundred trap-nights are needed to capture one animal (Verts and Carraway 1998). The species is considered imperiled in NM and vulnerable in AZ and is threatened at the localized population level. | |
| DWARF SHREW | *Sorex nanus* | | G4 | S1S2/S2 | AZ/NM | A-S, CAR, CIB, COC, GIL, KAI, LIN, SFE | Highly restricted, relict distribution in Southwest. | Extremely restricted, relict distribution; alpine/subalpine zone species subject to habitat loss via climate change & other human-mediated causes; reproductively isolated. The species is experiencing declining abundance and distribution in NM (S2), and in AZ it is considered critically imperiled (S1). | |
| NEW MEXICO SHREW | *Sorex neomexicanus* | | G2N2N3 | S2 | NM | CIB, LIN | Endemic, highly restricted, relict distribution. | Endemic with small range in the Capitan and Sacramento mountains, NM. Considered imperiled in NM. Associated with mesic forest & meadow habitats; high forest zone species subject to habitat loss via climate change. | |
| WATER SHREW | *Sorex palustris navigator* | | G5 | S1/S3 | AZ/NM | A-S, CAR, SFE | Southwest populations isolated on sky islands; limited to riparian/marshy areas. | AZGFD Wildlife of Special Concern; extremely restricted, relict distribution; riparian habitats degraded; high forest zone species subject to habitat loss via climate change and other human mediated causes; mesic forest and meadow habitats. | |
| PREBLE'S SHREW | *Sorex preblei* | | G4 | S1 | NM | SFE | Extremely restricted distribution. Found more often in dry habitats than other shrews. | Restricted distribution; found in dry shrub-grasslands, sagebrush steppe, and also mesic sites. Presence of Gambel oak thought to be important. Need more pitfall trapping across west to determine status and range. Since habitat needs are poorly known, this is critical to protecting the species. Although globally secure, the species is considered critically imperiled in NM. | |
| COCKRUM'S DESERT SHREW | *Notiosorex cockrumi* | | GNR | SNR | AZ | COR | Limited distribution, resident of semi-desert. | Rare endemic of SE AZ Madrean. | |
| MEXICAN LONG-TONGUED BAT | *Choeronycteris mexicana* | | G4N2 | S2/S1 | AZ/NM | COR | Habitat & roost loss/degradation; food resource loss; highly vulnerable to human disturbance. | AZGFD Wildlife of Special Concern. Reduced abundance; loss of roosting habitat via abandoned mine closures & cave recreation; loss of agave & columnar cacti food resources through collecting & harvest. Considered imperiled in AZ and critically imperiled in NM. | |
| CALIFORNIA LEAF-NOSED BAT | *Macrotus californicus* | | G4N3N4 | S3 | AZ | COR, TON | Roosting habitat very limited & subject to loss; foraging habitat loss & degradation; human disturbance of roosts. | AZGFD Wildlife of Special Concern. Predicted population reduction of at least 20% in next 10 years due to human disturbance and limited roost habitat; habitat destruction via mine closures & renewed mining. | |
| WESTERN YELLOW BAT | *Lasiurus xanthinus* | | G5N2 | S2/S1 | AZ/NM | COR | Loss, alteration, and/or degradation of southwestern riparian areas and associated habitats; improper livestock grazing, and forest and woodland clearing. | Human disturbance & destruction of palm tree roosts; loss & degradation of riparian & deciduous woodlands across Southwest; data deficient. Considered imperiled in AZ and critically imperiled in NM. NMDGF threatened species. | |

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| WESTERN RED BAT | *Lasiurus blossevillii* | | G5N4 | S2/S2 | AZ/NM | A-S, COC, COR, GIL, KAI, PRE, TON | Deciduous riparian habitat loss/degradation; roosting & foraging habitat reduced due to agricultural conversion; pesticides; winter roosts impacted by prescribed fire. | Loss & degradation of riparian & other broad-leaf deciduous forests & woodlands across Southwest; indicator of healthy southwestern riparian woodlands. AZGFD Wildlife of Special Concern. Considered imperiled in both AZ and NM. | |
| SPOTTED BAT | *Euderma maculatum* | | G4N3N4 | S2/S3 | AZ/NM | A-S, CAR, CIB, COC, GIL, KAI, LIN, SFE, TON | Populations considered vulnerable; threats include recreational climbing, pesticides, improper livestock grazing & pest control operations. | Urban & suburban expansion; activities that disturb cliff roosting habitat; woody encroachment of high elevation meadows. NMDGF threatened species. AZGFD Wildlife of Special Concern. | |
| ALLEN'S LAPPET-BROWED BAT | *Idionycteris phyllotis* | | G3G4N3 | S2/S2 | AZ/NM | A-S, CIB, COC, COR, GIL, KAI, TON | Vulnerable to habitat loss via vandalism, closure of abandoned mines, and timber management practices (snags), data deficient. | Habitat destruction and/or modification by partial blocking or improper gating; mine closures for hazard abatement and renewal of mining activity at previously abandoned mine sites. Human disturbance in existing roosts can cause abandonment of roost and/or negatively affect reproductive success. Use of tree roosts is common, therefore susceptible to thinning, fire, and fuels management practices. Considered imperiled in AZ and NM. | |
| PALE TOWNSEND'S BIG-EARED BAT | *Corynorhinus townsendii pallescens* | | GTN4 | S3/S3 | AZ/NM | A-S, CAR, CIB, COC, COR, GIL, KAI, LIN, PRE, SFE, TON | Disturbance/destruction of roost sites via recreational caving, mine reclamation, renewed mining, etc. Inadequate surveys of abandoned mines prior to closure. | Documented losses and/or reductions in maternity colonies. Human disturbance has caused roost abandonment and/or negatively affected reproductive success. Habitat destruction and/or modification by partial blocking or improper gating of cave/mine roosts. | |
| POCKETED FREE-TAILED BAT | *Nyctinomops femorosaccus* | | G4 | S2S3/S1/S3 | AZ/NM/TX | COR, PRE, TON | Distribution is limited, range restricted; requires large surfaces of open water for drinking. | Considered rare, extreme northern end of range. Considered imperiled in AZ, critically imperiled in NM, and vulnerable in TX. | |
| GREATER WESTERN MASTIFF BAT | *Eumops perotis californicus* | | G5T4N3 | S1S2 | AZ | A-S, COC, COR, TON | Highly disjunct populations (U.S., South America, Cuba); limited by suitable roost and water site availability. Threats include recreational climbing, pesticides, improper livestock grazing, and pest control operations. | Decreasing numbers and distribution. Certain historical roost sites are no longer occupied, possibly due to habitat loss and/or degradation. Severely limited by availability of drinking water, therefore no longer found in historic sites and populations may be in decline. Threatened by urban/suburban expansion and by activities that destroy or disturb cliff habitat. Populations eradicated due to pest control operations. Considered critically imperiled in AZ. | |
| PIKA | *Ochotona princeps* | | GN5 | S2 | NM | CAR, SFE | Narrowly restricted habitat, confined to talus slopes and boulder fields in alpine and sub-alpine habitats. | Restricted, relict distribution with NM population disjunct from northern population. It is a high forest zone indicator species subject to habitat loss due to climate change. Forest activities such as grazing and recreation are occurring in species habitat. Considered imperiled in NM (S2) indicating factors of declining abundance and distribution. In addition, this species was recommended for inclusion by the panel of mammalian experts consulted. | |
| GOAT PEAK PIKA | *Ochotona princeps nigrescens* | | G5TN1 | S1? | NM | SFE | Narrowly restricted habitat, disjunct populations, confined to talus slopes and boulder fields in alpine and sub-alpine habitats. | Endemic subspecies to NM; restricted, relict distribution, high forest zone species subject to habitat loss due to climate change. Considered critically imperiled in NM. | |
| SNOWSHOE HARE | *Lepus americanus* | | G5 | S3 | NM | CAR, SFE | Highly restricted habitat requirements, very sensitive to certain forest management practices. | Requires high-elevation, closed canopy, spruce fir forests with high horizontal foliage cover. Forest management activities (fire, logging, road construction) that reduce dense, closed canopy spruce fir forests may negatively impact hares, as may climate change. Potential for competitive replacement by mountain cottontail. Inclusion highly suggested by Dr. Jennifer Frey as a result of research she has and is conducting with her students at NMSU. | |
| WHITE-SIDED JACK RABBIT | *Lepus callotis* | | G3 | S1 | NM | COR | Highly restricted distribution, habitat loss and degradation, documented population declines in U.S. and Mexico. | Declining in many areas due to loss and degradation of open grassland habitat resulting from overgrazing, agricultural expansion, shrub invasion. Generally rare, even within range; prospects for population persistence over time is poor. Data deficient. Considered critically imperiled in NM and vulnerable globally. | |
| WHITE-TAILED JACK RABBIT | *Lepus townsendii campanius* | | GN5 | SP/S2 | AZ/NM | CAR | Limited distribution, restricted range; habitat degradation and elimination; competition with black-tailed jack rabbit. | Highly restricted distribution; apparent declines in distribution and abundance; potential for habitat changes that result in negative competitive interactions with black-tailed jackrabbit. Considered critically imperiled in NM and vulnerable globally. | |
| GRAY-FOOTED CHIPMUNK | *Neotamias canipes* | | GN3 | S3/S2S3 | NM/TX | CIB, LIN | Limited distribution, restricted range; data deficient. | Endemic; highly restricted distribution. Documented loss of populations; high forest zone species subject to habitat loss due to climate change. Considered vulnerable both globally and in NM. In TX, it is considered imperiled. | |
| WHITE MOUNTAINS CHIPMUNK | *Tamias minimus arizonensis* | | G5T2NR | SNR | AZ | A-S | Highly restricted distribution; (Sullivan & Peterson (1988) revised sub-specific taxonomy. | Highly restricted distribution, high forest zone species subject to habitat loss due to climate change; potential for habitat changes that promote competitive replacement by other lower elevation chipmunks. Supported for inclusion by professors at both NMSU and the University of AZ. | |

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| PEÑASCO LEAST CHIPMUNK | *Neotamias minimus atristriatus* | | G5T1NX | S1 | NM | LIN | Endemic to NM; extremely limited distributed, restricted range; habitat loss/degraded or fragmented. | NMDGF listed species and considered critically imperiled in NM. Highly restricted distribution; high forest zone species subject to habitat loss due to climate change; potential for habitat changes that promote competitive replacement by other lower elevation chipmunks; Populations declined markedly. | |
| KAIBAB LEAST CHIPMUNK | *Neotamias minimus consobrinus* | | G5TNR | NR | AZ | KAI | Highly restricted distribution. | Highly restricted distribution; high forest zone species subject to habitat loss due to climate change; potential for habitat changes that promote competitive replacement by other lower elevation chipmunks. Recommended for inclusion by Dr. Jennifer Frey, NMSU. | |
| YELLOW-BELLIED MARMOT | *Marmota flaviventris* | | GN5 | S3 | NM | CAR, SFE | Limited distribution; restricted range; at high risk, easily impacted, disturbed, vandalized; subject to unlimited pest control, improper livestock grazing. | Restricted distribution. High forest zone species subject to habitat loss due to climatic change. At high risk, the species is easily disturbed or vandalized. Globally secure; however considered vulnerable in NM which indicates factors of declining abundance and distribution as well as high vulnerability to human disturbance due to biology or geography. This species was also recommended for inclusion my the panel of mammalian experts that were consulted. | |
| WHITE MOUNTAINS GROUND SQUIRREL | *Spermophilus tridecemlineatus monticola* | | G5TN3 | S3/ | AZ/NM | A-S, CIB, GIL, LIN | Greatly reduced habitat, loss & degradation. | Restricted, relict isolated distribution; pattern requires grassland which has declined due to agriculture, development, and shrub invasion; Sacramento Mountain population may be extinct. | |
| BLACK-TAILED PRAIRIE DOG | *Cynomys ludovicianus ludovicianus* | | G3 | SX/S2? | AZ/NM | CIB (KRB, BK only) | Vulnerable to poisoning, shooting, agriculture, urbanization, habitat fragmentation, disease. Populations are disjunct. | Keystone species; extreme reduction in distribution and abundance; subject to agricultural control and plague. Former FWS candidate species, considered vulnerable globally and imperiled in NM. | |
| GUNNISON'S PRAIRIE DOG | *Cynomys gunnisoni* | | GN5 | S5/S2 | AZ/NM | CAR, CIB, SFE, GIL | Vulnerable to poisoning, shooting, agriculture, urbanization, habitat fragmentation, disease. | Keystone species, extreme reduction in distribution and abundance; subject to agricultural control and plague; poisoned to point of extirpation. Considered to be imperiled in NM. On list for NM Forests only (G5/S5 AZ) | |
| KAIBAB SQUIRREL | *Sciurus aberti kaibabensis* | | G5T3Q | S3 | AZ | KAI | Poisoning, trapping, shooting. | This subspecies is endemic to the Kaibab plateau. It is considered vulnerable in AZ and rounded globally status is vulnerable as well. | |
| ARIZONA GRAY SQUIRREL | *Sciurus arizonensis arizonensis* | | GN4 | S4/S2 | AZ/NM | GIL | Restricted distribution, riparian habitat loss/degradation. | Endemic to Southwest, recognized and charismatic, data deficient. Threatened in Mexico and considered imperiled in NM. | |
| CHIRICAHUA FOX SQUIRREL | *Sciurus nayaritensis chiracahuae* | | G3 | S2 | AZ | COR | Subject to unlimited pest control, improper livestock grazing. | Uncommon with restricted distribution; high forest zone species subject to habitat loss due to climate change. Considered vulnerable globally and imperiled in the state of AZ. | |
| RUIDOSO RED SQUIRREL | *Tamiasciurus hudsonicus lychnuchus* | | G5 | UNK | NM | LIN | Limited distribution, restricted range, endemic. | This subspecies is endemic only to limited area in NM (Lincoln NF); limited to high elevation spruce fir forests; high forest zone species subject to habitat loss due to climate change. Globally secure; however, status is currently unknown in NM and the species was recommended for inclusion by the mammalian experts consulted. | |
| BOTTA'S POCKET GOPHER | *Thomomys bottae aureus* | | G5 | UNK | NM | CIB, GIL, SFE | Endemic, limited distribution and restricted range. | Other T. bottae subspecies ranges are embedded within the range of this subspecies, therefore taxonomy difficult to distinguish; data deficient. | |
| GRAHAM MOUNTAINS POCKET GOPHER | *Thomomys bottae grahamensis* | | G5T3Q | S3 | AZ | COR | Restricted distribution, riparian habitat loss/degradation. | Extremely limited distribution & restricted range. Considered to be vulnerable in AZ. | |
| GUADALUPE POCKET GOPHER | *Thomomys bottae guadalupensis* | | G5TN2 | S1 | NM | LIN | Limited distribution, restricted range. | Restricted to montane forests, subject to habitat loss due to drought and climate change. Considered critically imperiled in NM. | |
| BOTTA'S POCKET GOPHER | *Thomomys bottae morulus* | | G5 | UNK | NM | CIB | Extremely limited range; embedded within range of another Thomomys sp., little habitable soil within range. | Endemic, extremely restricted distribution, only found in one small area of Cibola Co. | |
| CEBOLLETA SOUTHERN POCKET GOPHER | *Thomomys bottae paguatae* | | G5TN2 | S2 | NM | CIB | Extremely limited range; embedded within range of another Thomomys spp., little habitable soil within range. | Endemic, extremely restricted distribution, only found in one small area of Cibola Co. Considered to be imperiled in the state of NM. | |
| BOTTA'S POCKET GOPHER | *Thomomys bottae planorum* | | G5 | UNK | NM | CIB | Extremely limited range; embedded within range of another Thomomys spp., little habitable soil within range. | Restricted to montane coniferous and subalpine coniferous forest around Mt. Taylor; subject to habitat loss due to drought and climate change. Endemic to NM. | |
| KAIBAB NORTHERN POCKET GOPHER | *Thomomys talpoides kaibabensis* | | UNK | UNK | AZ | KAI | Highly restricted distribution, high forest zone subspecies subject to habitat loss and competitive displacement. | Endemic subspecies, relict population, subject to habitat loss due to drought and climate change. | |
| MT. TAYLOR NORTHERN POCKET GOPHER | *Thomomys talpoides taylori* | | UNK | UNK | NM | CIB | Highly restricted distribution, high forest zone subspecies subject to habitat loss and competitive displacement. | Endemic subspecies, relict population, subject to habitat loss due to drought and climate change. | |
| HUACHUCA MOUNTAINS POCKET GOPHER | *Thomomys umbrinus intermedius* | | G5TN3 | S3 | AZ | COR | Endemic, highly restricted distribution and relict population. | Extremely restricted distribution, found only in Huachuca Mtns., on rocky slopes >9,000 ft, subject to habitat loss due to drought and climate change. Considered vulnerable in AZ. | |
| SOUTHERN (PAJARITO) POCKET GOPHER | *Thomomys umbrinus quercinus* | | G5TN3 | S2 | AZ | COR | Endemic, highly restricted distribution and relict population. | Extremely restricted distribution, found only in Atascosa-Pajarito Mnts., subject to habitat loss due to drought and climate change. Considered imperiled in AZ. | |

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| YELLOW-FACED POCKET GOPHER | *Cratogeomys castanops* | | GN5 | S2 | NM | LIN | Needs well-developed grasslands; habitat lost to urbanization and agriculture; displaced by competitors due to increased disturbance of native habitats. | Highly restricted distribution, probable extirpation of at least one population on western edge, associated with well-developed grassland, can be competitively displaced by other gopher species with habitat change (from grass to forbs). Considered imperiled in NM. | |
| WHITE-ANKLED MOUSE | *Peromyscus pectoralis laceianus* | | GN5 | S1 | NM | LIN | Endemic, highly restricted distribution | Distribution very limited (small area in Eddy Co. only). Considered critically imperiled in NM. | |
| WUPATKI ARIZONA POCKET MOUSE | *Perognathus amplus cineris* | | G5T2Q | S2 | AZ | COC | Limited distribution, restricted range; sensitive to degradation of desert scrub habitat. | Restricted distribution, loss of habitat, sensitive to habitat loss, fragmentation, degradation. Considered imperiled in AZ. | |
| SPRINGERVILLE SILKY POCKET MOUSE | *Perognathus flavus goodpasteri* | | G5TN3 | S3 | AZ | A-S | Extremely rare; restricted distribution. | Restricted distribution, loss of habitat, sensitive to improper livestock grazing. Considered vulnerable in AZ. | |
| HOUSEROCK VALLEY CHISEL TOOTHED KANGAROO RAT | *Dipodomys microps leucotis* | | G5T2Q | S2 | AZ | KAI | Extremely limited distribution, low general abundance, habitat lost to agriculture and ranching; requires well developed shrub cover or can be replaced by competitors. | AZGFD Wildlife of Special Concern; relative abundance is low and patchy; species is absent from parts of former range, most likely due to intense past and present grazing practices. | |
| NM BANNER TAILED KANGAROO RAT | *Dipodomys spectabilis clarenci* | | G5TN4 | S1?/S4 | AZ/NM | CIB, SFE | Possibly extirpated in AZ; distribution and abundance highly reduced in NM. | AZGFD Wildlife of Special Concern; experienced significant habitat loss, degradation and fragmentation; prefers well developed grasslands which are disappearing; associated with prairie dog towns which are also disappearing. Considered critically imperiled in AZ, and although species currently ranked as secure in NM, subspecies is recommended for inclusion by Dr. Jennifer Frey, NMSU. | |
| FULVOUS HARVEST MOUSE | *Reithrodontomys fulvescens* | | GN5 | S4/S1 | AZ/NM | COR | Highly sensitive to degradation of mesic, dense grassland habitat; limited distribution. | Restricted, relict, isolated distribution; declining abundance. Considered critically imperiled in NM. | |
| PLAINS HARVEST MOUSE | *Reithrodontomys montanus* | | G5 | S2/S4 | AZ/NM | COC, COR, PRE | Distribution is patchy and discontinuous; restricted to well-developed grasslands. | Needs well-developed grass cover; habitat lost to urbanization and agriculture. Species is considered secure in NM; however is imperiled in AZ. Only AZ Forests within its range are included on this list. | |
| MESQUITE (Merriam's) MOUSE | *Peromyscus merriami* | | G5N2 | S2 | AZ | COR | Requires heavy mesquite bosque thickets with dense herbaceous growth. | Habitat limited and subjected to degradation, especially fuel cutting, improper livestock grazing, and recreation. Restricted distribution. Considered imperiled in AZ. | |
| NORTHERN PYGMY MOUSE | *Baiomys taylori ater* | | G4G5N4 | S2S3/S2 | AZ/NM | COR | Highly restricted distribution, require well-developed grassland, especially in riparian areas. | Requires well-developed warm grassland habitat; sensitive to degradation (e.g. improper livestock grazing, shrub encroachment) of grassland habitat. Restricted, localized distribution. Considered imperiled in both AZ and NM. | |
| YELLOW-NOSED COTTON RAT | *Sigmodon ochrognathus* | | G4G5N3N4 | S3S4/S2 | AZ/NM | COR, GIL | Restricted distribution; sensitive to improper livestock grazing and riparian degradation. | Experienced significant reductions in distribution and abundance. Considered imperiled in NM. | |
| SOUTHERN RED-BACKED VOLE | *Clethrionomys gapperi* | | GN5 | S3S4/S3 | AZ/NM | A-S, CAR, CIB, GIL, SFE | Good indicator of cool, mesic sites with high elevation old growth, spruce fir forests; requires abundance of surface litter including stumps and logs. | Requires mesic areas with abundant surface litter; unable to colonize pioneer plant communities such as recent burns; high forest zone subspecies subject to habitat loss due to climate change and other human mediated causes; potential for competitive replacement by other vole species. | |
| WESTERN HEATHER VOLE | *Phenacomys intermedius intermedius* | | GN5 | S3 | NM | CAR, SFE | Relict distribution pattern; declines in abundance and distribution. | Extremely rare; restricted distribution; may require mesic, dense, herbaceous vegetation; high forest zone subspecies subject to habitat loss due to climate change and other human mediated causes; potential for competitive replacement by other species of voles. | |
| ARIZONA MONTANE VOLE | *Microtus montanus arizonensis* | | G3 | S1/S3S4 | AZ/NM | A-S, GIL | Associated with dense tall, mesic grass. The species has a very restricted distribution in NM, therefore it is vulnerable to habitat alteration such as improper livestock grazing. | Endemic subspecies with highly restricted distribution; requires wet herbaceous growth (i.e., wet meadows, marshes); habitat subject to negative impacts; high forest zone subspecies subject to habitat loss due to climate change and other human mediated causes; potential for competitive replacement by other vole species. Considered critically imperiled in NM and is a NMDGF endangered species. | |
| NAVAJO MOGOLLON VOLE | *Microtus mogollonensis navaho* | | G4TN2Q | S1/S3 | AZ/NM | A-S, COC, KAI | Relict distribution pattern; declines in abundance and distribution due to loss of ground cover. | Relict distribution pattern; declines in abundance and distribution due to loss of grassland habitats; requires relatively well-developed grassland/meadow habitat; dewatering of springs has negatively impacted species. Considered critically imperiled in NM. | |
| LONG-TAILED VOLE | *Microtus longicaudus* | | GN5 | S4/S4 | AZ/NM | A-S, CAR, CIB, COC, COR, GIL, LIN, KAI, SFE | Dependent on mesic habitat with ample vegetative cover in mixed conifer forest zone; good indicator of permanent water in montane forests. Favors areas with grassy understory. Improper livestock grazing negatively impacts species. | This species is impacted by degraded riparian areas from improper livestock grazing. Relic populations with limited area and/or relatively poorly developed habitat are subject to loss due to climate change and other human mediated causes. Also potential for replacement by other competitive species of voles. Although this species is ranked globally and within the state as secure, it has been included based on recent research conclusions. Inclusion on the list was recommended by Dr. Jennifer Frey, NMSU due to documented declines in NM, relict populations with limited habitat, and narrow habitat requirements of mesic mixed conifer forest with ample vegetative cover. | |

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| WHITE-BELLIED LONG-TAILED VOLE | *Microtus longicaudus leucophaeus* | | G3TN3 | S3 | AZ | COR | Endemic found only in Pinaleno Mtns. At > 8,000; largely dependent on well developed mesic meadows; negatively impacted by grazing. | Endemic subspecies with highly restricted distribution; requires wet herbaceous growth (i.e., wet meadows, marshes); habitat subject to negative impacts; high forest zone subspecies subject to habitat loss due to climate change and other human mediated causes; potential for competitive replacement by other vole species. Considered vulnerable globally and within AZ. | |
| MEADOW (NEW MEXICO) JUMPING MOUSE | *Zapus hudsonius luteus* | | G3TN2 | S2 | AZ/NM | A-S, CAR, LIN, SFE | Highly restricted distribution, restricted range, loss of riparian habitat. | Decreasing numbers and riparian habitat, populations impacted by destruction of wetlands. Considered imperiled in NM and a NMDGF threatened species. | |
| WHITE-NOSED COATI | *Nasua narica* | | G5N4 | S4/S2 | AZ/NM | TON, COR, GIL | Endemic, indiscriminant killing, predator control, habitat degradation. | Restricted distribution; associated with riparian habitats, subjected to predator control campaigns. Considered imperiled in NM. | |
| AMERICAN MARTEN | *Martes americana origenes* | | GN5 | S2 | NM | CAR, SFE | Habitat loss & degradation, past extensive logging and trapping for pelts. | Rare; restricted distribution; high forest zone species subject to habitat loss due to climate change; forestry practices impact species. Considered imperiled in NM and a NMDGF threatened species. | |
| ERMINE | *Mustela erminea muricus* | | GN5 | S1/S3 | AZ/NM | CAR, SFE | Requires high altitude, spruce fir forest with abundant grass/shrub understory. Reliant on forest edge and success ional habitats. | Restricted distribution; high forest zone species subject to habitat loss via climate change, trapping, poisoning, and other measures intended to control predators; data deficient. Considered critically imperiled in AZ and vulnerable in NM. | |
| MINK | *Mustela vison energumenos* | | GN5 | S3 | NM | CAR, SFE | Requires permanent wetland/riparian habitat with abundant cover such as fallen logs and debris. Presence and density affected by availability of den sites, shoreline vegetation, vertebrate prey, and winter hunting sites. | Documented declines in NM; previously thought to be extirpated from the state. Impacted by degraded riparian areas from improper livestock grazing. Decline largely unexplained, but habitat degradation, trapping, disease and interspecific competition have affected species. Considered vulnerable in NM. | |
| HOODED SKUNK | *Mephitis macroura milleri* | | G5N4 | S4/S2 | AZ/NM | COR, GIL | Restricted distribution; associated with low-elevation riparian habitats. | Conversion of low-elevation riparian habitats to urban and agricultural lands, indeterminant trapping and poisoning. Considered secure in AZ; however imperiled in NM. NM Forests only. | |
| SANDHILL WHITE-TAILED DEER | *Odocoileus virginianus texana* | | G5 | UNK | NM | CIB (KRB only) | Range has greatly diminished; due to fire suppression, forage has decreased in quality and quantity. | Range has greatly diminished due to fire suppression, forage has decreased in quality and quantity. Recommended by Dr. Jennifer Frey (NMSU) because the species has experienced significant reductions in distribution and abundance, especially in the sandhill system in eastern NM. Bison-M lists this species as "found in Clayton area of KRB on the CIB". | |
| ROCKY MOUNTAIN BIGHORN SHEEP | *Ovis canadensis canadensis* | | G4 | S1/S4 | AZ/NM | CAR, SFE, CIB, GIL, KAI, TON | Overhunting/poaching, disease, competition for forage, drought, urban development, heavy recreational use of habitat. | Subspecies extirpated from NM in 1906; reintroduced into portions of historical range. Species considered critically imperiled in AZ. On the GIL, since 2005 the species has declined between 50 to 75%. | |
| DESERT BIGHORN SHEEP | *Ovis canadensis mexicana* | | G3 | S1/S3 | AZ/NM | COR, TON | Poaching, disease, surface water availability, competition for forage, drought, human conflict, habitat loss, fragmentation, degradation. | Considered critically imperiled in AZ and vulnerable in NM. Is a NMDGF endangered species. Low and decreasing numbers, decreasing distribution and range; small populations experiencing inbreeding and high predation. | |
| **REPTILES (16)** | | | | | | | | | |
| RETICULATE GILA MONSTER | *Heloderma suspectum suspectum* | | G4T4 | S4 | AZ/NM | COC, TON, COR, GIL | Threatened by active pet trade. Habitat loss is important, especially denning sites. | Decreasing in heavily urbanized or agricultural areas particularly. Threatened by overcollection. | |
| SONORAN DESERT TORTOISE | *Gopherus agassizii (Sonoran Population)* | | G4T4 | S4 | AZ | COR, PRE, TON | Studied populations appear to be decreasing in AZ. | AZGFD effort to underway to produce a conservation agreement since populations appear to be declining. | |
| SLEVIN'S BUNCHGRASS LIZARD | *Sceloporus slevini* | | G4 | S2S3/S1 | AZ/NM | COR | Improper livestock grazing in AZ and NM has degraded habitat and has caused large population declines. | Declines have been noted in the northern portion of the range, limited distribution. Thriving at many localities within AZ (although a limited) range. Species is considered critically imperiled in NM and is a NMDGF threatened species. | |
| MOUNTAIN SKINK | *Eumeces callicephalus* | | G5 | S2/S1 | AZ/NM | COR | Habitat destruction by wildfire, habitat loss, cattleguards, trenches. | Limited/decreasing distribution, population trends not available for AZ and NM. The species is considered imperiled in AZ and critically imperiled in NM where it is a NMDGF threatened species. | |
| GIANT SPOTTED WHIPTAIL | *Aspidoscelis burti stictogrammus* | | G4T3 | S3/S2 | AZ/NM | COR | Habitat loss and fragmentation. AZ and NM - Limited distribution. | Low population numbers. AZGFD report demonstrates it is a Madrean/Apachean endemic and occurs in disjunct populations within its limited range. NMDGF threatened species. | |
| GREEN RATSNAKE | *Senticolis triaspis* | | G5 | S3/S1 | AZ/NM | COR | Catastrophic wildfire, habitat destruction, active interest by collectors. | Limited range, population trends are unknown for this species. Considered vulnerable in AZ and critically imperiled in NM where it is a NMDGF threatened species. | |
| BROWN VINESNAKE | *Oxybelis aeneus* | | G5 | S2 | AZ | COR | Limited distribution in AZ, brush clearing and wood cutting, over collecting. | Population trends unknown in AZ. Rarely seen, occurs in south central AZ only. (Tumacacori and Huachuca EMA). Highly sought after by collectors. | |
| THORNSCRUB HOOKNOSED SNAKE | *Gyalopion quadrangulare* | | G4 | S1/S2 | AZ | COR | Limited distribution in AZ. | Rarely seen, not abundant in AZ. Distribution in U.S. is limited to an extremely small part of AZ, in and adjacent to the Tumacacori EMA. Within this very small area it is infrequently encountered. | |

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| MARICOPA LEAF-NOSED SNAKE | *Phyllorhynchus browni lucidus* | | G5T2 | S2 | AZ | TON | This snake is greatly affected by heavy urban development such as what is occurring in Phoenix and Tucson. In addition, they are affected by agriculture as in the Avra Valley. They are apparently closely adapted to local conditions. There is also a concern that since these snakes are so adapted to local conditions that a loss of a large local population area may be a serious matter of biodiversity loss, and could eliminate an important source of variation contributing to the long term survival of the species. | Leaf-nosed snakes appear to be declining or possibly disappearing in areas with heavy urban development such as Tucson and Phoenix. The species is considered imperiled in AZ. | |
| YAQUI BLACK-HEADED SNAKE | *Tantilla yaquia* | | G4 | S2/S1 | AZ/NM | COR | Habitat loss/fragmentation, catastrophic wildfire. | Low population numbers, limited distribution. The species is easily disturbed, impacted, and vandalized. Furthermore, it suffers from habitat loss, fragmentation, and degradation. Considered critically imperiled in NM and imperiled in AZ. | |
| MEXICAN GARTERSNAKE | *Thamnophis eques megalops* | | G3T3 | S2S3/S1S2 | AZ/NM | A-S, COC, COR,TON, PRE, GIL | Overcollecting, improper livestock grazing, habitat alteration (dewatering, siltation, modification of stream morphology, and arroyo cutting), and the introduction of predaceous, non-native species, particularly bullfrogs and domestic geese which compete with the snakes for food. | Moderate, spotty range in AZ, NM, and Mexico; documented declines in the number of U.S. populations and abundance, with substantial range contractions in AZ, New Mexico and probable reductions in Mexico; threats are high and ongoing in the U.S. and the same threats probably exist in Mexico. NMDGF endangered species. | |
| ARID LAND RIBBONSNAKE | *Thamnophis proximus diabolicus* | | G5 | S3 | NM/TX | CIB (KRB), LIN | Habitat loss, easily disturbed, exotic predators. | Low population numbers, limited distribution and restricted range. The species is easily impacted and disturbed and is subject to vandalism, commercial exploitation and overcollection. The species also suffers from habitat loss, fragmentation, and degradation. The species is considered to be vulnerable in NM and is a NMDGF threatened species. | |
| NARROW-HEADED GARTERSNAKE | *Thamnophis rufipunctatus* | | G3G4 | S3/S3 | AZ/NM | A-S, COC, GIL, PRE, TON | Lowered water table; habitat modification; improper livestock grazing along streambeds and increased recreational use in riparian areas. Also introduction of predators such as bullfrogs and some fishes, and habitat fragmentation. | The species does not appear to be abundant in the U.S., and quite likely it has declined as habitat has been lost or altered. In NM, it is peripheral and of uncertain but probably low population density. The species population trend is unknown in AZ and NM. Believed to be extirpated from Flagstaff and Wall Lake, AZ areas where it was formerly abundant. It is also becoming more difficult to find in historical strongholds like Oak Creek AZ. NMDGF threatened species. | |
| MOTTLED ROCK RATTLESNAKE | *Crotalus lepidus lepidus* | | G5T4T5 | S2 | NM | LIN | Low numbers, limited distribution and data, habitat loss and fragmentation, road kill and overcollecting. | The mottled subspecies of the rock rattlesnake is probably secure and common in its rather large Mexican range; however, in NM the subspecies is peripheral and of unknown but probably low population density. This species is very rare and/or very limited in distribution in NM. Population trends are unknown for AZ. NMDGF threatened species. | |
| TWIN SPOTTED RATTLESNAKE | *Crotalus pricei* | | G5 | S3 | AZ | COR | Limited distribution, highly sought after for the black market pet trade. | Found only at high elevations within coniferous forests of the "Sky Islands". Uncommonly encountered, but subject to overcollecting. | |
| ARIZONA RIDGE-NOSED RATTLESNAKE | *Crotalus willardi willardi* | | G5T3 | S3 | AZ | COR | Threatened by illegal collecting, mining, recreational development, and woodcutting (Lowe et al. 1986). | Population trends are unknown. A “general feeling” exists that it may be less common locally in the Huachuca Mountains than 25 years ago. | |
| **SNAILS (38)** | | | | | | | | | |
| GILA SPRINGSNAIL | *Pyrgulopsis gilae* | C | G2 | S2 | NM | GIL | The natural or human-induced destruction, modification, or curtailment of Gila springsnail habitat represents the primary threat to the species. | Limited distribution. FWS candidate species for federal listing. NMDGF listed species. Considered imperiled both globally and within the state of NM. | Protect habitat from anthropogenic disturbances: dewatering, diversion, wildlife improvement projects, inundation, trampling, contamination, water quality, degradation, exotic species. |
| VERDE RIM SPRINGSNAIL | *Pyrgulopsis glandulosa* | | G1 | S1 | AZ | PRE | Spring development, improper cattle grazing, lowered groundwater table, spring diversion, water contamination. | Limited distribution. AZ Species of Special Concern. Considered critically imperiled globally as well as in the state of AZ. | Protect habitat from anthropogenic disturbances: dewatering, diversion, wildlife improvement projects, inundation, trampling, contamination, water quality, degradation, exotic species. |
| PAGE SPRINGSNAIL | *Pyrgulopsis morrisoni* | C | G1 | S1 | AZ | COC | Spring development, improper cattle grazing, lowered groundwater table, spring diversion, water contamination, non-native species. | Narrow endemic. AZ Species of Special Concern. FWS candidate species for federal listing. Considered critically imperiled both globally and within the state of AZ. | Protect habitat from anthropogenic disturbances: dewatering, diversion, wildlife improvement projects, inundation, trampling, contamination, water quality, degradation, exotic species. |
| FOSSIL SPRINGSNAIL | *Pyrgulopsis simplex* | | G1 | S1 | AZ | COC, TON | Spring development, improper cattle grazing, lowered groundwater table, spring diversion, water contamination, non-native species. | Limited distribution. AZ Species of Special Concern. Considered critically imperiled globally as well as in the state of AZ. | Protect habitat from anthropogenic disturbances: dewatering, diversion, wildlife improvement projects, inundation, trampling, contamination, water quality, degradation, exotic species. |

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| NEW MEXICO HOT SPRINGSNAIL | *Pyrgulopsis thermalis* | C | G1 | S1 | NM | GIL | Poor watershed management practices, contamination, and wetland habitat degradation. Recreational use and improper livestock grazing are also threats to this species. | Limited distribution. FWS candidate species for federal listing. NMDGF listed species. Considered imperiled both globally and within the state of NM. | Protect habitat from anthropogenic disturbances: dewatering, diversion, wildlife improvement projects, inundation, trampling, contamination, water quality, degradation, exotic species. |
| BROWN SPRINGSNAIL | *Pyrgulopsis sila* | | G1 | S1 | AZ | PRE | Poor watershed management practices, contamination, and wetland habitat degradation. Recreational use and improper livestock grazing are also threats to this species. | Narrow endemic found on FS lands. | Protect habitat from anthropogenic disturbances: dewatering, diversion, wildlife improvement projects, inundation, trampling, contamination, water quality, degradation, exotic species. |
| HUACHUCA SPRINGSNAIL | *Pyrgulopsis thompsoni* | C | G2 | S2 | AZ | COR | Spring development, improper cattle grazing, lowered groundwater table, spring diversion, water contamination, non-native species. | Limited distribution. FWS candidate for federal listing. Considered imperiled globally and within the state of AZ. | Protect habitat from anthropogenic disturbances: dewatering, diversion, wildlife improvement projects, inundation, trampling, contamination, water quality, degradation, exotic species. |
| THREE FORKS SPRINGSNAIL | *Pyrgulopsis trivalis* | C | G1 | S1 | AZ | A/S | Spring development, improper cattle grazing, lowered groundwater table, spring diversion, water contamination, non-native species. | Limited distribution. FWS candidate for federal listing. Considered critically imperiled globally and within the state of AZ. AZ Species of Special Concern. | Protect habitat from anthropogenic disturbances: dewatering, diversion, wildlife improvement projects, inundation, trampling, contamination, water quality, degradation, exotic species. |
| CLARK PEAK TALUSSNAIL | *Sonorella christenseni* | | G1G2 | S1S2 | AZ | COR | Fire, drought, climate change. Events that affect humidity levels. | Narrow endemic. Considered critically imperiled both globally and within the state of AZ. | Protect talus slopes. Route recreational trails away from talus slopes. |
| MIMIC TALUSSNAIL | *Sonorella imitator* | | G2 | S2 | AZ | COR | Perhaps fire. | Narrow endemic. Restricted and declining distribution with associated chance extinction due to chance events. Considered imperiled both globally and within the state of AZ. | Protect talus slopes. Route recreational trails away from talus slopes. |
| PINALENO TALUSSNAIL | *Sonorella grahamensis* | | G1 | S1 | AZ | COR | Potentially intense fire, climate change. | Narrow endemic. AZ Species of Special Concern. Restricted and declining distribution with possible extinction due to chance events. Considered critically imperiled both globally and within the state of AZ. | Protect talus slopes. Route recreational trails away from talus slopes. |
| WET CANYON TALUSSNAIL | *Sonorella macrophallus* | | G1 | S1 | AZ | COR | Any disturbance that alters or removes talus, increased sedimentation, or depletion of streamflow. | Narrow endemic, found only in Wet Canyon in Pinaleno Mountains. Considered critically imperiled both globally and in the state of AZ. | Protect riparian area and water flow. |
| NO COMMON NAME GIVEN; see Metcalf and Smartt (1997) | *Sonorella hachitana pleoncillensis* | | G1 | S1 | NM | COR | Fire, climate change, destabilization of talus sprawls. | Narrow endemic which is considered critically imperiled globally as well as in the state of NM. | Protect talus slopes. Route recreational trails away from talus slopes. |
| NORTHERN THREEBAND | *Humboltiana ultima* | | G2 | S2/S2 | NM/TX | LIN | Fire, climate change, destabilization of talus sprawls. | Narrow endemic limited to mesic sites in the Guadalupe mountains. Imperiled globally and within the states of NM and TX. | Protect talus slopes. Route recreational trails away from talus slopes. |
| BEARDED MOUNTAINSNAIL | *Oreohelix barbata* | | G1 | SNR/S1 | AZ/NM | GIL, COR | Riparian disturbance, improper cattle grazing, road building. | Narrow endemic which is considered critically imperiled globally and in NM. The species has not yet been ranked in AZ. | Protect riparian habitats along creeks. Prevent overgrazing, route trails and roads away from canyon bottoms. |
| PINALENO MOUNTAINSNAIL | *Oreohelix grahamensis* | | G2 | S2 | AZ | COR | Chance events, intense fire. | Narrow endemic with potential for extinction due to chance events acting on small localized populations. Considered imperiled both globally and within AZ. | Protect talus slopes. Route recreational trails away from talus slopes. |
| MAGDALENA MOUNTAINSNAIL | *Oreohelix magdalanae* | | G1 | SNR | NM | CIB | Climate change, deforestation, fire. | Narrow endemic with potential for extinction due to chance events acting on small localized populations. Considered imperiled globally. | Conduct surveys if project is proposed in occupied habitat. Avoid or minimize impact to populations. |
| NO COMMON NAME | *Oreohelix metcalfei acutidiscus* | | G2T1 | SNR | NM | GIL | Fire, climate change, mining, destabilization of talus sprawls. | Narrow endemic with potential for extinction due to chance events acting on small localized populations. The species is considered critically imperiled (rounded status T1). | Protect talus slopes. Route recreational trails away from talus slopes. Conduct surveys if mining is proposed in or near occupied habitat. |
| NO COMMON NAME (Black Range mountainsnail) | *Oreohelix metcalfei concentrica* | | G2 | SNR | NM | GIL | Fire, climate change, mining, destabilization of talus sprawls, deforestation. | Narrow endemic with potential for extinction due to chance events acting on small localized populations. Species is considered imperiled globally. | Protect talus slopes. Route recreational trails, roads away from talus slopes. Conduct surveys if mining is proposed in or near occupied habitat. Leave forested buffer around occupied habitat if timber harvest is planned. |
| NO COMMON NAME | *Oreohelix metcalfei metcalfei* | | G1 | S1 | NM | GIL | Climate change, mining, destabilization of talus sprawls. | Narrow endemic with potential for extinction due to chance events acting on small localized populations. Species is considered critically imperiled both globally and in NM. | Protect talus slopes. Route recreational trails, road away from talus slopes. Conduct surveys if mining is proposed in or near occupied habitat. |
| NO COMMON NAME | *Oreohelix metcalfei radiata* | | G1 | S1 | NM | GIL | Fire, climate change, mining, destabilization of talus sprawls. | Narrow endemic with potential for extinction due to chance events acting on small localized populations. Species is considered critically imperiled both globally and in NM. | Protect talus slopes. Route recreational trails, road away from talus slopes. Conduct surveys if mining is proposed in or near occupied habitat. |
| NO COMMON NAME | *Oreohelix nogalensis* | | G1 | S1 | NM | LIN | Fire, climate change, deforestation. Type locality merits verification. | Narrow endemic with potential for extinction due to chance events acting on small localized populations. Species is considered critically imperiled both globally and in NM. | If possible, protect occupied canyons from catastrophic fire. |
| MINERAL CREEK MOUNTAINSNAIL | *Oreohelix pilsbryi* | | G1 | S1 | NM | GIL | Mining, climate change. | Narrow endemic. NMDGF threatened species. Considered critically imperiled both globally and within the state of NM. | Conduct surveys if mining is proposed in occupied habitat. Avoid or minimize impacts to populations. |
| MORGAN CREEK MOUNTAINSNAIL | *Oreohelix swopei* | | G1 | S1 | NM | GIL | Climate change, deforestation, fire. Species requires further study & evaluation regarding taxonomy & distribution as it relates to the O. strigosa depressa & O. subrudis groups. | Narrow endemic. Considered critically imperiled both globally and within the state of NM. | Conduct surveys if timber harvest of prescribed burns are proposed in occupied habitat. Avoid or minimize impacts to populations. |
| SUBALPINE MOUNTAINSNAIL | *Oreohelix subrudis* | | G4 | S3 | NM | CIB, GIL | Fire, climate change, mining, destabilization of talus sprawls. | Endemic to higher elevations in Black Range and Mogollon and San Mateo Mtns. Considered vulnerable in NM. | Protect talus slopes. Route recreational trails, roads away from talus slopes. Conduct surveys if mining is proposed in or near occupied habitat. Leave forested buffer around occupied habitat if timber harvest is planned. |

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| SILVER CREEK WOODLANDSNAIL | *Ashmunella binneyi* | | G1 | S1 | NM | GIL | Fire, climate change, deforestation. Type locality merits verification. | Limited distribution, local endemic. Considered critically imperiled globally and in NM. | Protect talus slopes. Route recreational trails, roads away from talus slopes. Conduct surveys if mining, timber harvest or prescribed burns are proposed in or near occupied habitat. |
| NO COMMON NAME | *Ashmunella cockerelli argenticola* | | G1T1 | S1 | NM | GIL | Fire, climate change, deforestation. Type locality merits verification. | Narrow endemic. Considered critically imperiled both globally and within the state of NM. | Protect talus slopes. Route recreational trails, roads away from talus slopes. Conduct surveys if mining, timber harvest or prescribed burns are proposed in or near occupied habitat. |
| BLACK RANGE WOODLANDSNAIL | *Ashmunella cockerelli cockerelli* | | G1T1 | S1 | NM | GIL | Fire, climate change, deforestation. Type locality merits verification. | Narrow endemic. Considered critically imperiled both globally and within the state of NM. | Protect talus slopes. Route recreational trails, roads away from talus slopes. Conduct surveys if mining, timber harvest or prescribed burns are proposed in or near occupied habitat. |
| NO COMMON NAME | *Ashmunella cockerelli perobtusa* | | G1T1 | S1 | NM | GIL | Fire, climate change, deforestation. Type locality merits verification. | Narrow endemic. Considered critically imperiled both globally and within the state of NM. | Protect talus slopes. Route recreational traisl, roads away from talus slopes. Conduct surveys if mining, timber harvest or prescribed burns are proposed in or near occupied habitat. |
| WHITEWATER CREEK WOODLANDSNAIL | *Ashmunella danielsi* | | G1 | S1 | NM | GIL | Fire, climate change, disturbance to talus, deforestation. Current literature recognizes 2 ssp. The entire complex of smaller-shelled Ashmunellae of the tetradon-danielsi groups merit taxonomic study. | Limited distribution. Considered critically imperiled both globally and within the state of NM. | Protect talus slopes. Route recreational trails, roads away from talus slopes. Conduct surveys if mining, timber harvest or prescribed burns are proposed in or near occupied habitat. |
| IRON CREEK WOODLANDSNAIL | *Ashmunella mendax* | | G1 | S1 | NM | GIL | Fire, climate change, disturbance to talus, deforestation, mining. | Limited distribution. Considered critically imperiled both globally and within the state of NM. | Protect talus slopes. Route recreational trails, roads away from talus slopes. Conduct surveys if mining, timber harvest or prescribed burns are proposed in or near occupied habitat. |
| CAPITAN WOODLANDSNAIL | *Ashmunella pseudodonta* | | G1 | SNR | NM | LIN | Fire, mining, climate warming, disturbance to talus. | Limited distribution. Considered critically imperiled globally. | Protect talus slopes. Route recreational trails, roads away from talus slopes. Conduct surveys if mining, timber harvest or prescribed burns are proposed in or near occupied habitat. |
| DRY CREEK WOODLANDSNAIL | *Ashmunella tetradon tetradon* | | G1 | S1 | NM | GIL | Deforestation, fire. A. t. tetrodon complex of SW Mogollon Mtns. Merits taxonomic study. | Narrow endemic. Considered critically imperiled both globally and within the state of NM. | Protect riparian areas within canyons. Route recreational trails, road away from canyon bottoms. Conduct surveys if timber harvest or prescribed burns are proposed in or near occupied habitat. |
| NO COMMON NAME | *Ashmunella tetradon mutator* | | G1 | S1 | NM | GIL | Deforestation, fire. A. t. tetrodon complex of SW Mogollon Mtns. Merits taxonomic study. | Narrow endemic. Considered critically imperiled both globally and within the state of NM. | Protect riparian areas within canyons. Route recreational trails, road away from canyon bottoms. Conduct surveys if timber harvest or prescribed burns are proposed in or near occupied habitat. |
| NO COMMON NAME | *Ashmunella tetradon inermis* | | G1 | S1 | NM | GIL | Deforestation, fire. A. t. tetrodon complex of SW Mogollon Mtns. Merits taxonomic study. | Narrow endemic. Considered critically imperiled both globally and within the state of NM. | Protect riparian areas within canyons. Route recreational trails, road away from canyon bottoms. Conduct surveys if timber harvest or prescribed burns are proposed in or near occupied habitat. |
| NO COMMON NAME | *Ashmunella tetradon animorum* | | G2 | S2 | NM | GIL | Fire, deforestation, disturbance to talus. | Narrow endemic. Considered imperiled both globally and within the state of NM. | Protect talus slopes. Route recreational trails, roads away from talus slopes. Conduct surveys if mining, timber harvest or prescribed burns are proposed in or near occupied habitat. |
| BLUNT AMBERSNAIL | *Oxyloma retusum* | | G5 | S1 | NM | LIN | Climate change, groundwater pumping, riparian habitat degradation. Taxonomic study may reveal pops. distinct from such diverse habitats. Further statewide surveys of marsh habitats may clarify status. | Species is know to occur in the Sacramento mountains and is considered critically imperiled in NM, although globally it is thought to be secure. | Protect springs, streams, wetlands, and riparian areas. |
| VAGABOND HOLOSPIRA | *Holospira montivaga* | | G2 | SNR/S2 | AZ/NM | LIN | Fire, climate change, mining. | Narrow endemic, species is restricted to the Guadalupe Mountains of TX and NM. Considered imperiled both globally and within the state of NM. | Protect talus slopes. Route recreational trails, roads away from talus slopes. Conduct surveys if mining or prescribed burns are proposed in or near occupied habitat. |

## DEFINITIONS

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| A-S | Apache-Sitgreaves National Forest |
| AZ | Arizona |
| AZGFD | Arizona Game and Fish Department |
| BBS | Breeding Bird Survey |
| BK | Black Kettle National Grassland |
| C | Candidate species for federal listing |
| CAR | Carson National Forest |
| CIB | Cibola National Forest |
| CO | Colorado |
| COC | Coconino National Forest |
| G | Heritage Global Ranking |
| G1 | Globally critically imperiled |
| G2 | Globally imperiled |

| | |
|---|---|
| G3 | Globally vulnerable to extirpation or extinction |
| G4 | Globally apparently secure |
| G5 | Globally demonstrably widespread, abundant, secure |
| EMA | Ecosystem Management Area |
| FWS | U.S. Fish and Wildlife Service |
| GIL | Gila National Forest |
| KAI | Kaibab National Forest |
| KRB | Kiowa/Rita Blanca National Grasslands |
| LIN | Lincoln National Forest |
| N | Heritage National Ranking |
| NM | New Mexico |
| NMDGF | New Mexico Department of Game and Fish |
| NMSU | New Mexico State University |
| NR | Not reported |
| OK | Oklahoma |
| PE | Proposed endangered for federal listing |
| PRE | Prescott National Forest |
| Q | Questionable taxonomy that may reduce conservation priority |
| S | Heritage subnational ranking |
| S1 | subnationally critically imperiled |
| S2 | sensationally imperiled |
| S3 | subnationally vulnerable to extirpation or extinction |
| S4 | subnationally demonstrably widespread, abundant, and secure |
| SFE | Santa Fe National Forest |
| SH | possibly extirpated |
| SOC | U.S. Fish and Wildlife Service Species of Concern |
| S? | Status unknown |
| T | infraspecific taxon (trinomial) subspecies |
| TON | Tonto National Forest |
| TX | Texas |
| U.S. | United States |

**DEFINITIONS**

**C-** Candidate species for federal listing

**G - Global Rank** — **Global rank applies across the entire species range**

**NF -** National Forest

**RD -** Ranger District

**S - State Rank** — **State rank applies to each state, province, or other subnational jurisdiction in the species range**

**SOC -** U.S. Fish and Wildlife Service Species of Concern

**T - Intfaspecific taxon** — **The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species global rank.**

**1 - Critically imperiled**

**2 - Imperiled**

**3 - Vulnerable to extirpation or extinction**

**4 - apparently secure**

**FOREST ABBREVIATIONS**

**A/S** - Apache Sitgreaves

**BK -** Black Kettle National Grassland

**CAR** - Carson

**CIB** - Cibola

**COC** - Coconino

**COR** - Coronado

**GIL** - Gila

**KAI** - Kaibab

**KIO -** Kiowa National Grassland

**LIN** - Lincoln

**PRE** - Prescott

**RB -** Rita Blanca National Grassland

**SFE** - Santa Fe

**TON** - Tonto

***All data for this list was compiled using the AZGF heritage database, NMGF Bison database, Natureserve explorer, and NM**