

	A	B	C	D	E	F	G	H	I	J
1	USFS R3 REGIONAL FORESTER'S SENSITIVE SPECIES: ANIMALS - 2013									
2	Common Name	Scientific Name	FWS Fed Status (SOC NM only)	Heritage Global Rank	Heritage State Rank AZ/NM	State	Forest(s)	Limiting Factors/Threats	Justification	Management Recommendations
3	AMPHIBIANS (7)									
4	BOREAL TOAD (Western toad)	<i>Anaxyrus boreas boreas</i> (DPS)	SOC; POS 90-d	G4T4	SH NM - Endangered	NM	CAR	Habitat loss, environmental contaminants, disease (chytrid fungus). The ranges of these subspecies (boreas, halophilus) do not correspond very well with geographic patterns of mtDNA variation as found by Goebel et al. (2009). The geographic distribution of the haplotype clade that includes most of the traditionally recognized range of boreas includes not only the type locality of boreas but also that of subspecies halophilus (Goebel et al. 2009).	Recently, this species has experienced large declines within its 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.
5	SACRAMENTO MOUNTAINS SALAMANDER	<i>Aneides hardii</i>	SOC	G3	S3	NM	LIN	Logging, overgrazing, and forest fires. Negatively impacted by opening up of shady mature forest and by destruction or removal of downed logs. Populations may persist through the first intensive logging of an area, but may not survive a repeated 10-year logging cycle. Apparently relatively secure under current management practices.	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. Any surveys should be conducted during summer rains between late June and August which is when this species usually emerges and is most active. Continue monitoring habitat conditions and salamander presence in areas after silvicultural treatments and wild and/or prescribed fires. Utilize an adaptive management approach using information gained from the monitoring efforts and ascertain whether BMPs and mitigations can maintain populations.
6	WESTERN BARKING FROG	<i>Craugastor augusti cactorum</i>		G5T5N1	S2	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.
7	HUACHUCA/CANELO HILLS TREEFROG (AZ treefrog)	<i>Hyla wrightorum</i> pop. 2	C (Huachuca/Canelo DPS only)	not ranked in NatureServe	not ranked in NatureServe	AZ	COR	Threats include predation and competition from introduced species (nonnative fish including bass and catfish, and crayfish), limited distribution and restricted ranges, and overcollection. Climate change and continuing drought in the Southwest pose additional challenges to Arizona treefrog populations and exacerbate the threat of wildfire.	USFWS Candidate Species. The frog occurs at relatively few localities and breeding populations typically consist of only 2-30 individuals. The populations in the Huachuca Mountains and Canelo Hills are probably geographically disjunct from those at Rancho Los Fresnos. As a result, the frog is at risk due to disruption of metapopulation dynamics (relationships among populations) and factors such as wildfire and drought, which can easily eliminate small populations.	Allow for growth of emergent vegetation in aquatic habitats for attachment of egg masses.
8	NORTHERN LEOPARD FROG	<i>Lithobates pipiens</i>		G5	S2/S1/S1	AZ/NM/TX	A-S, CAR, CIB, 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.
9	TARAHUMARA FROG	<i>Lithobates tarahumarae</i>		G3	SX,S1	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. The cause of the extirpations is unknown but may be related to one or more of the following: exposure to heavy metals, particularly cadmium and other agents, which may have arrived in polluted air; stream acidification; severe drought; flooding; introduced predaceous fish (green sunfish and bluegill) and bullfrogs (Hale and Jarchow 1988) (now apparently replaced by the bullfrog in the Pena Blanca area in Arizona); chytridiomycosis (fungal disease); cold weather can be a contributing factor in mortality. Most of the threats to the species in the United States are not as pervasive in Mexico.	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).
10	LOWLAND LEOPARD FROG	<i>Lithobates yavapaiensis</i>	SOC	G4N4	S3/S1 AZ(WSC); NM (T)	AZ/NM	A-S, COC, COR, GIL, PRE, TON	Habitat alteration and fragmentation and the introduction of non-native predatory and competitive fishes, crayfishes, and frogs. Habitat alteration is the result of agricultural practices, livestock grazing, development, and reservoir construction. Damming, draining, and diverting of water have fragmented formerly contiguous aquatic habitats. In many areas, fragmentation has been accentuated by introduced predatory fishes, crayfish, and bullfrogs. The species has been replaced by introduced <i>R. berlandieri</i> along the Colorado and Gila rivers, Arizona. These factors result in the blockage of potential dispersal corridors for recolonization. Populations are also vulnerable to large-scale mortality on a frequent basis due to drought, disease, and sulphur toxicity.	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 <i>Rana yavapaiensis</i> 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. <i>R. yavapaiensis</i> has been replaced by introduced <i>R. berlandieri</i> 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.
11	BIRDS (35)									

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12	NORTHERN GOSHAWK	<i>Accipiter gentilis</i>	SOC	G5	S3/S2B,S3N	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 <i>Goshawk Guidelines</i> 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.
13	BOREAL OWL	<i>Aegolius funereus</i>		G5N4	S2B,S2N	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, protect habitat -- especially spruce-fir forests 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. Retain large-diameter snags for nests.
14	VIOLET-CROWNED HUMMINGBIRD	<i>Amazilia violiceps</i>		G5N3B	S3/S1B,S1N	AZ/NM (listed)	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.	
15	BAIRD'S SPARROW	<i>Ammodramus bairdii</i>	SOC	G4N3B,N2N	S2N/S1N/S2	AZ/NM/TX	A-S, 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.
16	ARIZONA GRASSHOPPER SPARROW	<i>Ammodramus savannarum ammolegus</i>		G5TU	S2/S1B,S1N	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.	
17	BURROWING OWL (Western)	<i>Athene cunicularia hypugaea</i>	SOC	G4T4NB2	S3/S3B,S3N/S2B	AZ/NM/TX	A-S, CAR, CIB, 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.	Avoid fragmentation and degregation of prairie habitat. This includes protecting burrowing mammal colonies (i.e., prairie dogs) and ground squirrels. Habitat conservation and management must also include areas of higher grass-forb vegetation supporting ample small rodent and insect prey, particularly as owls are food-limited during brood rearing in some regions. This may be accomplished by reducing grazing pressure.
18	COMMON BLACK HAWK	<i>Buteogallus anthracinus</i>	SOC	G4G5N3B	S3/S2B,S3N/S2B	AZ/NM/TX	GIL	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. At least 95% of the riparian habitat in the southwestern U.S. has been lost, altered, or degraded.	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.
19	LUCIFER HUMMINGBIRD	<i>Calothorax lucifer</i>		G4G5	S2/S1B,S1N	AZ/NM (listed)	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.	Conserve agaves, riparian habitat, and semi-desert scrub habitat.
20	COSTA'S HUMMINGBIRD	<i>Calypte costae</i>		G5	S5/S1B,S1N	AZ/NM (listed)	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.	
21	NORTHERN BEARDLESS-TYRANNULET	<i>Camptostoma imberbe</i>		G5	S4/S1B,S1N (NM Endangered)	AZ/NM	COR (Douglas RD)	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.	
22	BUFF-COLLARED NIGHTJAR	<i>Caprimulgus ridgwayi</i>		G5N2N3B	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.

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23	MOUNTAIN PLOVER	<i>Charadrius montanus</i>		G2	S1B, S2N/S2B, S4N/S2B/S2	AZ/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 reduce the likelihood of invasion by non-native species such as, but not restricted to, cheatgrass, leafy spurge, and knapweed. Plovers are highly attracted to recent burns. Researchers use burning to attract birds for capture.
24	WESTERN YELLOW BILLED CUCKOO	<i>Coccyzus americanus occidentalis</i>	C, west of Rio Grande corridor; P* by 2013	G5T3Q	S3/S3B, S3N/S NR	AZ/NM/TX	A-S, CAR, CIB (except BK), COC, COR, GIL, PRE, SFE, TON	Habitat loss, modification, and fragmentation; decreases in water tables; and possibly 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. Invasion by tamarisk is also a concern.	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).
25	COMMON GROUND DOVE	<i>Columbina passerina</i>		G5	S4/S1B, S1N	AZ/NM	GIL	Urban development, water diversion, flood control projects, grazing, and the spread of agriculture have destroyed much riparian habitat in the West. Loss and degradation of desert riparian habitats due to livestock operations and improper water management will continue to threaten bird communities that breed there. In New Mexico, loss of the native shrublands, weedy areas, and riparian areas this species prefers apparently limit this species.	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 have been due in part to a conversion from furrow to drip irrigation systems in lemon and avocado groves, thereby reducing ground disturbance. Efforts to minimize disturbance to nesting birds in orchards may lead to population increases. Hunter education may help to better identify common ground-doves from mourning doves. Clearing patches of thornscrub may help, but extensive habitat manipulation is likely to reduce nesting success.
26	BROAD-BILLED HUMMINGBIRD	<i>Cyananthus latirostris</i>		G4N3B, N2N	S3/S1B, S1N	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
27	GRAY CATBIRD	<i>Dumetella carolinensis</i>		G5N5B, N5N	S1/S3B, S4N/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.	
28	BUFF-BREASTED FLYCATCHER	<i>Empidonax fulvifrons</i>		G5N1B	S1	AZ	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.	
29	EARED QUETZAL	<i>Euptilotis neoxenus</i>		G3	S1N	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.	
30	AMERICAN PEREGRINE FALCON	<i>Falco peregrinus anatum</i>	SOC	G4T4/N3B, N3N	S4/S2B, S3N/S2B	AZ/NM/TX (listed in 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.
31	CACTUS FERRUGINOUS PYGMY OWL	<i>Glaucidium brasilianum cactorum</i>		G3	S1/S3B	AZ/TX	COR	Destruction and modification of riparian and thornscrub habitats via urban and agricultural encroachment, wood cutting, water diversion, channelization, livestock overgrazing, groundwater pumping, and hydrological changes resulting from various land-use practices	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.	
32	BALD EAGLE	<i>Haliaeetus leucocephalus</i>	SOC	G5 N5B, N5N	S2S3B, S4N/S1B, S4N/SNR/S3B, S3N	AZ/NM/OK/TX	ALL	The Bald Eagle was delisted on August 8, 2007. On February 25, 2010 FWS determined Sonoran Desert population did not warrant listing.	Bald eagle protected under the Bald and Golden Eagle Act.	Utilize the Bald Eagle Management Guidelines and comply with the Bald Eagle and Golden Eagle Act.
33	WHITE-EARED HUMMINGBIRD	<i>Hylocharis leucotis</i>		G5	S1S2/S1	AZ/NM	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.	

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34	YELLOW-EYED JUNCO	<i>Junco phaeonotus</i>		G5N3	S3/S2B,S2N (Threatened in NM)	AZ, NM	COR (Douglas RD in NM), TON	The greatest threat facing local populations is catastrophic wildfire enhanced by past fire-suppression. (Corman and Wise-Gervais 2005).	Inhabits coniferous forest clad mountains and canyons of SE AZ, most abundant in forests that are cooler, wetter and shaded. Commonly nesting from 5900 to 10,000 feet. Northern most populations from Pinal Mts (Gila Co.), higher elevations of Pinaleno, Santa Catalina, Rincon, Santa Rita and Chiricahua mountains, and eastern slopes of Huachuca Mountains. recently found nesting in Mule Mts. (Corman and Wise-Gervais 2005).	Management activities (e.g., prescribed fire and vegetation tx.) within junco habitat should be scheduled outside of breeding season whenever possible.
35	WHITE-TAILED PTARMIGAN	<i>Lagopus leucura</i>		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.
36	WHISKERED SCREECH OWL	<i>Megascops trichopsis</i>	SOC	G5/N4	S5/S1B,S1N	AZ/NM	COR	Habitat (pine-oak) 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, protection of habitat -- esp. 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 (esp. snags and hollow trees) and associated vegetation. In addition, reduce excessive exposure to vocalization playbacks, as such could disturb the birds and cause reduction in survival.
37	GILA WOODPECKER	<i>Melanerpes uropygialis</i>		G5	S5/S2B,S2N	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.	
38	GOULD'S WILD TURKEY	<i>Meleagris gallopavo mexicana</i>	SOC	G5T3	S1/S2	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 interspersed forest structure benefits turkeys in unnaturally dense forests. Protection of habitat, enforcement 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.
39	ABERT'S TOWHEE	<i>Melospiza aberti</i>		G3G4N3N4	S3/S1B,S1N	AZ/NM	COR, GIL	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).	Need to determine demographic (source/sink) status of birds in human created and exotic habitats.
40	SULPHUR-BELLIED FLYCATCHER	<i>Myiodynastes luteiventris</i>		G5/N3B	S3	AZ	COR, TON		HDMS Notes: Primarily nest (in snags) in the sky islands of SE AZ, but have been found as far west as Baboquivari Mountains and locally north to the Sierra Ancha's. 1997 breeding record from as far north as Oak Creek Canyon near West Fork. Typically nests from 4500 to 6000 feet elevation. (Corman and Wise-Gervais 2005).	
41	ROSE-THROATED BECARD	<i>Pachyrhamphus aglaiae</i>		G4G5N1B	S1	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.	Recommended habitat management measures include reducing riparian grazing to maintain and enhance sycamore and other tree regeneration, reducing groundwater withdrawal to maintain perennial stream flow, and reducing tape playback disturbance by bird watchers. Comprehensive observational studies are needed to illuminate details of the breeding cycle, migration, and inter- and intraspecific behavior. The relationship between populations breeding at the northern limit of the range and the core population needs further understanding.
42	VARIED BUNTING	<i>Passerina versicolor</i>		G5N4B	S3/S1B,S1N/S4B	AZ/NM/TX	COR, LIN	Reduction of 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.	
43	ARIZONA WOODPECKER	<i>Picoides arizonae</i>		G5N3	S3/S2B,S2N	AZ, NM	COR	Devastating wildfires and possibly reduced groundwater tables in canyons are likely the greatest threats to local populations (Corman and Wise-Gervais 2005).	Occurs in several forested habitats in SE AZ, with Madrean evergreen oaks an important component of all. Found in most sky islands in SE AZ, but somehow undetected in Mule and Whetstone mountains. (Corman and Wise-Gervais 2005).	

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44	ELEGANT TROGON	<i>Trogon elegans</i>		G5/N1N2N, N3B	S3/S1B,S1N (Endangered in NM)	AZ, NM	COR	Degradation and loss of native riparian habitat through stream diversion, groundwater withdrawal, erosion, and overgrazing	Most nesting pairs inhabit forested mountain canyons where large sycamores merge with Madrean pine-oak woodlands. They nest locally between 3650-6300 feet, and observed foraging up to 7000ft. They breed in select canyons of the Chiricahua, Huachuca, Pajarito and Santa Rita mountains. Threats include loss of sycamores and adjacent pine-oak woodlands to drawdown of water tables or catastrophic wildfires. Higher concentrations of hikers on trails through trogon territories during critical periods may lead to nest failures. (Corman and Wise-Gervais 2005). Also found annually in the Peloncillo Mountains in Hidalgo County.	"Reduce riparian and adjacent-slope grazing to maintain and enhance sycamore and oak regeneration in breeding habitat; reduce diversions and groundwater withdrawal to maintain perennial stream flow; retain large sycamores in nesting habitat; retain mature trees in foraging habitat; establish seasonal closures near nest sites as necessary to reduce disturbance by birdwatchers and photographers; establish long-term nest monitoring program." (AZGFD 2001; http://www.azgfd.gov/w_c/edits/documents/Trogeleg.d.pdf)
45	LESSER PRAIRIE-CHICKEN	<i>Tympanuchus pallidicinctus</i>	P*	G3N3	S2B,S2N/S1/S2B	NM/OK/TX	CIB (KRB and BK)	Habitat fragmentation, wind power and energy transmission operation and development, predation, habitat conversion for agriculture, petroleum production and disease, collision mortality, improper livestock grazing, extreme weather events, climate change, shrub control and eradication, insecticides, altered fire regimes, encroachment by invasive woody plants, roads and other similar linear features, surface water impoundments, hunting and other forms of recreation, educational, or scientific use, hybridization, etc.	Proposed for listing in 2012. May occur on NFS lands in NM, TX and OK on National Grasslands administered by the Cibola NF.	
46	THICK-BILLED KINGBIRD	<i>Tyrannus crassirostris</i>		G5N2B	S2/S1B,S1N	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.	
47	ARIZONA BELL'S VIREO	<i>Vireo bellii arizonae</i>	SOC	G5T4	S4/S2B,S3N	AZ/NM	GIL, LIN		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.	
48	GRAY VIREO	<i>Vireo vicinior</i>		G4N4B	S4/S4B,S3N (NS); S2 (B-M) NM listed	AZ/ NM	CAR, COR (Douglas RD), 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.	
49	CLAMS (3)									
50	CALIFORNIA FLOATER	<i>Anodonta californiensis</i>		G3QN3	S1	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.
51	LILLJEBORG PEACLAM	<i>Pisidium lilljeborgi</i>		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 Nambé 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.
52	SANGRE DE CRISTO PEACLAM	<i>Pisidium sanguinichristi</i>		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.
53	CRUSTACEANS (2)									
54	KAIBAB FAIRY SHRIMP	<i>Branchinecta kaibabensis</i>		G1G2	SNR	AZ	KAI	Threats have not been adequately assessed, but limited the distribution and thus vulnerability to stochastic event are recognized.	Branchinecta can be found in both dry lakes and vernal pools. Branchinecta kaibabensis is known only from the Kaibab Plateau in Coconino Co., Arizona. Collections from ephemeral pools throughout this region show B. kaibabensis to occur south of the crossroads town of Jacob Lake in the Kaibab National Forest. (Belk and Fugate, 2000). Currently no occurrences in HDMS. Belk (1998) makes the case that habitat conservation is the first priority in protecting fairy shrimps and the other inhabitants of ephemeral wetlands. He cites several situations in which once widely distributed species have become rare as a result of human activities that were destructive to temporary pools. (Belk and Fugate, 2000).	
55	DUMONT'S FAIRY SHRIMP	<i>Streptocephalus henridumontis</i>		G4G5	S1 (NS)/SNR	NM	CIB, LIN	Ephemeral wetland loss from agricultural practices, improper grazing, point and nonpoint discharge, highway improvement, mosquito abatement.	Narrow endemic. Found on the (a) Lincoln NF, Smokey Bear Ranger District, Blue Lake; and (b) Cibola NF, Zuni Mts. Ranger District (2 different dirt tanks: Bonita Canyon, Trail Canyon).	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.

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2	Common Name	Scientific Name	FWS Fed Status (SOC NM only)	Heritage Global Rank	Heritage State Rank AZ/NM	State	Forest(s)	Limiting Factors/Threats	Justification	Management Recommendations
56	FISH (13)									
57	MEXICAN STONEROLLER	<i>Camptostoma ornatum</i>		G3G4N1N2	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.	More research is needed on life history.
58	DESERT SUCKER	<i>Catostomus clarkii</i>	SOC	G3G4	S3S4/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.	
59	ZUNI BLUEHEAD SUCKER	<i>Catostomus discobolus jarrovi</i>	P*	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.	See recovery plan (Carman 2004).
60	SONORA SUCKER	<i>Catostomus insignis</i>	SOC	G3G4N3N4	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.	
61	RIO GRANDE SUCKER	<i>Catostomus plebeius</i>	SOC	G3G4N3	SNA/S2	AZ/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). 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.	Conserve pure stock in captivity. More research is needed on life history and ecology. Explore possibility that interactions with nonnative fishes in degraded habitats lower population viability.
62	LITTLE COLORADO SUCKER	<i>Catostomus sp.3</i>		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.	
63	GREENTHROAT DARTER	<i>Etheostoma lepidum</i>	SOC	G3G4N3N4	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.	
64	HEADWATER CHUB	<i>Gila nigra</i>	C	G2Q	S2/SNR	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.	
65	RIO GRANDE CHUB	<i>Gila pandora</i>		G3	S3 (S2 in B-M)	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.	Important management needs include protection of riparian areas, minimization of sediment input due to anthropogenic causes (e.g., road building, timber harvest), maintenance of channel stability and natural fluvial dynamics, and removal of non-native fish species. Better information is needed on distribution, life history, population trends, and community ecology.
66	ROUNDTAIL CHUB	<i>Gila robusta</i>	C	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, change of riparian communities from broadleaf overstory to scrub habitat.	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.	Reintroduce roundtail chub where possible, and remove/minimize effects (e.g., fish barriers) of non-native fish. Reduce impacts of cattle grazing on broadleaf species in riparian areas.
67	HEADWATER CATFISH	<i>Ictalurus lupus</i>	SOC	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.	
68	RIO GRANDE CUTTHROAT TROUT	<i>Oncorhynchus clarki virginalis</i>	C	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.	Removing non-native salmonids and installing barriers to prevent upstream movement of non-native trout are vital to maintaining and increasing range and abundance. Basic life history attributes, habitat requirements, and limiting factors, including the specific effects of other fishes, need to be determined.
69	SUCKERMOUTH MINNOW	<i>Phenacobius mirabilis</i>		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.	
70	INSECTS (25)									
71	SUNRISE SKIPPER	<i>Adopaeoides prittwizi</i>		G2G4/N1/N2	S2/SNR	AZ, NM	COR	Overgrazing. Habitat loss, natural or unnatural flood scouring of habitat.	Native upland marshes and springs. Southern Arizona, southwest Texas, and Mexico. Recent observations from Santa Cruz River (Santa Cruz Cty), near Canelo, and Parker Canyon Lake (Cochise Cty).	
72	NETWING MIDGE	<i>Agathon arizonicus</i>		G1	SNR	AZ	TON	Events that effect water flow or water quality.	Very limited distribution. Considered critically imperiled globally.	Protect water quantity and quality.

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73	HUACHUCA GIANT SKIPPER	<i>Agathymus evansi</i>		G2G3	S3	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. huachuensis.
74	SABINO CANYON DAMSELFLY	<i>Argia sabino</i>		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.
75	CESTUS SKIPPER	<i>Atrytonopsis cestus</i>		G3G4	S2	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.
76	A STONEFLY	<i>Capnia caryi</i>		G1/N1	SNR/SNR	AZ, NM	A-S, GIL		Newly described species from New Mexico and Arizona. It has been recorded from New Mexico in Catron Co. (Upper Iron Creek) and in Arizona from Apache Co. (Mamie Creek at Escudilla Mountain); both near the border of southern Arizona and New Mexico (Baumann and Jacobi, 2002).	
77	PARKER'S CYLLOEPUS RIFFLE BEETLE	<i>Cylloepus parkeri</i>		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.
78	CHIRICAHUA WATER SCAVENGER BEETLE	<i>Cymbiodyta arizonica</i>		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.
79	DASHED RINGTAIL	<i>Erpetogomphus heterodon</i>		G2G4	SNR/SNR	NM/TX	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.
80	MOTH (Notodontid moth)	<i>Euhyparpax rosea</i>		G1G2N1N2	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.	
81	PINALENO MONKEY GRASSHOPPER	<i>Eumorsea pinaleno</i>		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.
82	SACRAMENTO MOUNTAINS CHECKERSPOT BUTTERFLY	<i>Euphydryas anicia cloudcrofti</i>	SOC	G5T1N1	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.
83	A MAYFLY	<i>Fallceon eatoni</i>		G1G2/N1N2	SNR	AZ	TON		Mexican species that was rediscovered in 2005 for first time since 19th century collection in Sonora Mexico in 1892, thus proving their continued existence. The discovery took place in Salt River Canyon, Gila County in 2005.	
84	STEPHAN'S HETERELMIS RIFFLE BEETLE	<i>Heterelmis stephani</i>	C	G1	S1	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.
85	"GILA" MAY FLY	<i>Lachlania dencyanna</i>		G1	SNR	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, but not yet ranked in NM.	Provide buffers for timber harvest, protect streams from overgrazing, maintain water quality and quantity.
86	A CADDISFLY	<i>Lepidostoma apache</i>		G1/N1	S1	AZ	A-S		Larval habitat not yet known. This species was recently described from Arizona in the Blue River, Apache-Sitgreaves National Forest, Greenlee Co., Arizona (Houghton, 2001).	
87	A CADDISFLY	<i>Lepidostoma knulli</i>		G2G3/N2N3	S1/SNR	AZ/NM	A-S, COC		Lepidostoma larvae occupy coolwater springs, streams, and rivers, and occasionally occur in lacustrine habitats (Czachorowski 2004, Holzenthal et al. 2007). Blinn and Ruitter (2006, 2009) noted that the species occurred in cool stream segments with generally swift-flowing water, dominated by large cobbles with low embeddness of interstitial gravels. Houghton (2001) found this species in two sites in Apache National Forest, eastern Arizona. Moulton et al. (1994) lists two sites in Apache and Coconino Cos., Arizona.	
88	A CADDISFLY	<i>Limnephilus granti</i>		G1/N1	SNR	AZ	A-S, COR		Extremely rare and all specimens have been collected from springs and their immediate outlets in the ponderosa pine region of eastern Arizona in two counties at 3 sites	
89	FERRIS' COPPER	<i>Lycaena ferrisi</i>		G1G2 N1N2	S3	AZ	A-S	Climate change, fire suppression, larval host plant is Rumex hymenosepalus. Grazing?	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.
90	A MAYFLY	<i>Moribaetis mimbresaurus</i>		G1G2/N1N2	SNR	AZ	COC		Collected from Oak Creek @ Pumphouse Wash in 1984. Disjunct population from known Mexican and Central American populations. This species has a relictual distribution in Arizona and probably was much more widespread in Mexico and Central America at one time. (McCafferty 2007). HDMS needs to add this location.	
91	BALMORHEA SADDLE-CASE CADDISFLY	<i>Protophila balmorhea</i>		G2/N2	SNR	AZ	COC		It appears to be known in Arizona only from two springs complexes in lower Oak Creek: Page Springs and Bubbling Ponds (including Lolo Mai Spring). The overall elevation range of this species in Arizona is restricted to 3200 - 3300 ft (975 - 1005 m; Blinn and Ruitter 2009). Blinn and Ruitter (2006, 2009) indicate that P. balmorhea occurs on Coconino National Forest in warm-water channels that are sand floored, with relatively low embeddness.	
92	A CADDISFLY	<i>Psychoronia brooksi</i>		G1/N1	SNR	NM	LIN; Ruidoso RD		Known only from the type locality in the North Fork Rio Ruidoso in Lincoln Co., NM. at the entrance to Ski Apache Ski Area.	

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93	NOKOMIS FRITILLARY	<i>Speyeria nokomis nokomis</i>		G3T1N1	SNR/S1	AZ/NM	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.
94	BONITA DIVING BEETLE	<i>Stictotarusus neomexicana</i> (aka. <i>Deroneotes n.</i>)	SOC	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.
95	A Cave Obligate Pseudoscorpion	<i>Tuberochernes ubicki</i>		G1G2	SNR	AZ	COR			
96	A CADDISFLY	<i>Wormaldia plana</i>		G2/N1N2	SNR	AZ	COC, PRE, TON		A Caribbean genus, Wormaldia is more or less restricted to the cooler spring-fed streams in mountainous regions of Middle America. (Flint 1968). This species was originally described from Chiapas, Mexico; but was recently found in Arizona from Gila to Yavapai Cos. (Gila Co.: Line Fossil Creek, Fossil Creek; Yavapai Co.: Beaver Creek, below outlet of Montezuma Well, unnamed stream at Ward Ranch) (Munoz-Quesada and Holzanthal, 2008). HDMS will need to obtain report to help identify locations found in AZ.	
97	MAMMALS (37)									
98	NORTHERN PYGMY MOUSE	<i>Baiomys taylori ater</i>		G4G5	S3/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.	
99	MEXICAN LONG-TONGUED BAT	<i>Choeronycteris mexicana</i>	SOC	G4N2	S3/S2	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.	Obtain additional information on life history and behavior.
100	PALE TOWNSEND'S BIG-EARED BAT	<i>Corynorhinus townsendii pallascens</i>	SOC	G4T4	S3S4/S3(NS) S?(B-M)	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.	
101	GUNNISON'S PRAIRIE DOG (prairie population)	<i>Cynomys gunnisoni</i>		G5	S4/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.	
102	GUNNISON'S PRAIRIE DOG (montane population)	<i>Cynomys gunnisoni pop. 1</i>	C	G5T2	SNR	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. Candidate sub-population. On list for NM Forests only.	
103	BLACK-TAILED PRAIRIE DOG	<i>Cynomys ludovicianus</i>	SOC	G4N4	SX/S2/S3/S3	AZ/NM/OK /TX	CIB (KRB 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.	
104	HOUSEROCK VALLEY CHISEL TOOTHED KANGAROO RAT (aka: Marble Canyon Kangaroo Rat)	<i>Dipodomys microps leucotis</i>		G5T2QN2	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.	
105	SPOTTED BAT	<i>Euderma maculatum</i>		G4	S1S2/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.	
106	WHITE MOUNTAINS GROUND SQUIRREL	<i>Ictidomys tridecemlineatus monticola</i>		G5T3N3	S1S2	AZ	A-S	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.	
107	ALLEN'S LAPPET-BROWED BAT	<i>Idionycteris phyllotis</i>	SOC	G4	S2S3/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.	Most aspects of the ecology of this species need further study.
108	WESTERN RED BAT	<i>Lasiurus blossevillii</i>	SOC	G5/N3	S3/S3 (S2 B-M)	AZ/NM	A-S, COC, COR, GIL, KAI, LIN, 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.	Information is needed on life history, population status and trends, and roost requirements.
109	WESTERN YELLOW BAT	<i>Lasiurus xanthinus</i>		G5	S2S3/S2(NS) S1(B-M)	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.	
110	CANADA LYNX	<i>Lynx canadensis</i>	C	G5	Not ranked	NM	CAR, SF (species not known to occur historically. CO reintroduction in 1999 has resulted in lynx traveling through northern NM)	Habitat loss and fragmentation. Recreational activities, such as ski areas and snowmobiling. Increased competition and displacement by bobcat and coyote in some areas.	Determined warranted to be listed in NM by FWS on December 17, 2009	

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111	AMERICAN MARTEN	<i>Martes americana origenes</i>		G5	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.	
112	HOODED SKUNK	<i>Mephitis macroura milleri</i>		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, indeterminate trapping and poisoning. Considered secure in AZ; however imperiled in NM. *NM Forests only.	
113	WHITE-BELLIED LONG-TAILED VOLE	<i>Microtus longicaudus leucophaeus</i>		G3T3	S2	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.	
114	NAVAJO MOGOLLON VOLE	<i>Microtus mogollonensis navaho</i>		G5T2QN2	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.	
115	ARIZONA MONTANE VOLE	<i>Microtus montanus arizonensis</i>		G5T4	S4/S1	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.	
116	WHITE MOUNTAINS CHIPMUNK	<i>Neotamias minimus arizonensis</i>		G5T2	SNR	NM	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.	
117	PENASCO LEAST CHIPMUNK	<i>Neotamias minimus atristriatus</i>	C	G5T1	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.	
118	GOAT PEAK PIKA	<i>Ochotona princeps nigrescens</i>	SOC	G5T1	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.	
119	AMERICAN PIKA	<i>Ochotona princeps saxatilis</i>		G5	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.	
120	SPRINGVILLE SILKY POCKET MOUSE	<i>Perognathus flavus goodpasteri</i>		G5T3	S2	AZ	A-S	Extremely rare; restricted distribution.	Restricted distribution, loss of habitat, sensitive to improper livestock grazing. Considered vulnerable in AZ.	
121	MESQUITE (Merriam's) MOUSE	<i>Peromyscus merriami</i>		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.	
122	ARIZONA GRAY SQUIRREL	<i>Sciurus arizonensis arizonensis</i>		G4	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.	
123	CHIRICAHUA SQUIRREL	<i>Sciurus nayaritensis chiricahuae</i>		G5T2	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.	
124	ARIZONA SHREW	<i>Sorex arizonae</i>	SOC	G3	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.	
125	CINEREUS (MASKED) SHREW	<i>Sorex cinereus</i>		G5	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.	
126	NEW MEXICO SHREW	<i>Sorex neomexicanus</i>		G3Q	S2	NM	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.	
127	AMERICAN WATER SHREW	<i>Sorex palustris</i>		G5	S1/S3(B-M) S2(NS)	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.	
128	PREBLE'S SHREW	<i>Sorex preblei</i>		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.	
129	GUADALUPE POCKET GOPHER	<i>Thomomys bottae guadalupensis</i>		G5T2	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.	

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130	CEBOLLETA SOUTHERN POCKET GOPHER	<i>Thomomys bottae paguatae</i>	SOC	G5T2	S2	NM	CIB	Extremely limited range; embedded within range of another <i>Thomomys</i> 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.	
131	SWIFT FOX	<i>Vulpes velox</i>		G3/N3	S2 (NS) S3 (B-M)/S1/S3?	NM, OK, TX	CIB NGs	*Factors implicated in the decline of this fox have been intense trapping pressure, destruction of prairie habitat, rodent control programs, indiscriminant hunting, and capture by dogs.*		
132	NEW MEXICO MEADOW JUMPING MOUSE	<i>Zapus hudsonius luteus</i>	P*	G5T2N2	S1/S1	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.	See proposed rules (2013).
133	REPTILES (19)									
134	GIANT SPOTTED WHIPTAIL	<i>Aspidoscelis stictogramma</i>		G4T4N3	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.	
135	RED-BACKED WHIPTAIL	<i>Aspidoscelis xanthonota</i>		G4T2N2	T2	AZ	COR			
136	MOTTLED ROCK RATTLESNAKE	<i>Crotalus lepidus lepidus</i>		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.	
137	TWIN-SPOTTED RATTLESNAKE	<i>Crotalus pricei</i>		G5N3	S2	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.	
138	ARIZONA RIDGENOSE RATTLESNAKE	<i>Crotalus willardi willardi</i>		G5T4N3	S1S2	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. Studied populations appear to be decreasing in AZ.	
139	SONORAN DESERT TORTOISE	<i>Gopherus morafkai</i>	C	G4NRR	S4	AZ	COR, PRE, TON		AZGFD effort to underway to produce a conservation agreement since populations appear to be declining.	
140	THORNSCRUB HOOK-NOSED SNAKE	<i>Gyalopion quadrangulare</i>		G4N1N2	S1	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.	
141	BROWN VINESNAKE	<i>Oxybelis aeneus</i>		G5N2	S1	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.	
142	MOUNTAIN SKINK	<i>Plestiodon callicephalus</i>		G4G5N2N3	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.	
143	SLEVIN'S BUNCHGRASS LIZARD	<i>Sceloporus slevini</i>		G4N2N3	S2/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.	
144	GREEN RATSNAKE	<i>Senticolis triaspis</i>		G5N3	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.	
145	CHIHUAHAUN BLACK-HEADED SNAKE	<i>Tantilla wilcoxi</i>		G4N1N2	S1	AZ	COR		This snake is known from the Santa Rita, Patagonia, and Huachuca mountains of southeastern Arizona. It is found at elevations ranging from about 3,000' to 8,000'. It inhabits Madrean Evergreen Woodland and Petran Montane Conifer Forest communities. Most specimens are found in heavily wooded canyons with abundant leaf litter and canopy cover.	
146	YAQUI BLACK-HEADED SNAKE	<i>Tantilla yaquia</i>		G4N2	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.	
147	NORTHERN MEXICAN GARTERSNAKE	<i>Thamnophis eques megalops</i>	P*	G4T3N1	S1/SNR	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.	See proposed rules (2013).
148	ARID LAND RIBBONSNAKE (aka Western ribbonsnake)	<i>Thamnophis proximus diabolicus</i>		G5T4N3N4	UNK (NR) S2 (B-M) (Threatened in NM)	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 imperiled in NM and is a NMDGF threatened species.	
149	NARROW-HEADED GARTERSNAKE	<i>Thamnophis rufipunctatus</i>	P*	G3G4N3	S1/S2	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.	See proposed rules (2013).

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150	BEZY'S NIGHT LIZARD	<i>Xantusia bezyi</i>		G2N2	S2	AZ	COR, TON		This Arizona endemic is found in a small chain of mountain ranges in central Arizona at elevations ranging from 730 m (2,400') to about 1,770 m (5,800'). Rugged, rocky slopes and boulder fields within the Arizona Upland Sonoran Desertscrub and Interior Chaparral communities are home to this lizard. Patches of Great Basin Conifer Woodland also occur within its range. This crevice-dweller frequents large outcroppings and large boulder clusters and is occasionally encountered in and under plant debris such as dead <i>Dasylium</i> .	
151	SNAILS (37)									
152	SILVER CREEK WOODLANDSNAIL	<i>Ashmunella binneyi</i>		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.
153	NO COMMON NAME	<i>Ashmunella cockerelli argenticola</i>		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.
154	BLACK RANGE WOODLANDSNAIL	<i>Ashmunella cockerelli cockerelli</i>		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.
155	NO COMMON NAME	<i>Ashmunella cockerelli perobtusa</i>		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.
156	WHITEWATER CREEK WOODLANDSNAIL	<i>Ashmunella danielsi</i>		G1	S1	NM	GIL	Fire, climate change, disturbance to talus, deforestation. Current literature recognizes 2 ssp. The entire complex of smaller-shelled <i>Ashmunellae</i> 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.
157	IRON CREEK WOODLANDSNAIL	<i>Ashmunella mendax</i>		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.
158	CAPITAN WOODLANDSNAIL	<i>Ashmunella pseudodonta</i>		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.
159	NO COMMON NAME	<i>Ashmunella tetradon animorum</i>		G3T3	S3	NM	GIL	Fire, deforestation, disturbance to talus.	Narrow endemic. Considered imperiled globally and vulnerable 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.
160	NO COMMON NAME	<i>Ashmunella tetradon inermis</i>		G3T2	SNR	NM	GIL	Deforestation, fire. A. t. tetradon complex of SW Mogollon Mtns. Merits taxonomic study.	Narrow endemic. Considered critically imperiled globally.	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.
161	NO COMMON NAME	<i>Ashmunella tetradon mutator</i>		G3T2	SNR	NM	GIL	Deforestation, fire. A. t. tetradon complex of SW Mogollon Mtns. Merits taxonomic study.	Narrow endemic. Considered critically imperiled globally.	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.
162	DRY CREEK WOODLANDSNAIL	<i>Ashmunella tetradon tetradon</i>		G3T3	SNR	NM	GIL	Deforestation, fire. A. t. tetradon complex of SW Mogollon Mtns. Merits taxonomic study.	Narrow endemic. Considered critically imperiled globally.	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.
163	RIO GRANDE SNAGGLETOOTH	<i>Gastrocopta riograndensis</i>		G3/N1	SNR/SH	NM, TX	LIN	The greatest threat to this species is current fire management practices.	This species is found in several states in northern Mexico and just barely extends into the United States in southern and southwestern Texas and New Mexico. Nekola (2009) cites recent material from Sacramento Canyon Falls, Otero Co., New Mexico. It has been found in thin soil accumulations on small ledges of xeric south-facing limestone cliffs in the Sacramento Mountains, where organic litter is generated from grasses and shrubs.	
164	RUIDOSO SNAGGLETOOTH	<i>Gastrocopta ruidosensis</i>		G1/N1	SNR	NM	LIN, SNF	The greatest threat to this species is current fire management practices. It could take decades for soil conditions to recover following a fire to a place where this and other land snail species can colonize. (Nekola pers. comm. 2013)	Found on bare soil, under stones, and in thin accumulations of grass thatch and juniper litter on mid-elevation carbonate cliffs and xeric limestone grasslands along the eastern slopes of the Sangre de Cristo and Sacramento mountains in eastern New Mexico, where the only extant occurrences are believed to be. (Nekola and Coles, 2010).	
165	VAGABOND HOLOSPIRA	<i>Holospira montivaga</i>		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.
166	NORTHERN THREEBAND (Snail)	<i>Humboldtiana ultima</i>		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.
167	BEARDED MOUNTAINSNAIL	<i>Oreohelix barbata</i>		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.
168	PINALENO MOUNTAINSNAIL	<i>Oreohelix grahamensis</i>		G2	S2/SNR	AZ/NM	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.
169	MAGDALENA MOUNTAINSNAIL	<i>Oreohelix magdalanae</i>		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.
170	NO COMMON NAME	<i>Oreohelix metcalfei acutidiscus</i>		G2T1	SNR(NS) S1(B-M)	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.
171	NO COMMON NAME (Black Range mountainsnail)	<i>Oreohelix metcalfei concentrica</i>		G2	SNR(NS) S1(B-M)	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.

	A	B	C	D	E	F	G	H	I	J
1	USFS R3 REGIONAL FORESTER'S SENSITIVE SPECIES: ANIMALS - 2013									
2	Common Name	Scientific Name	FWS Fed Status (SOC NM only)	Heritage Global Rank	Heritage State Rank AZ/NM	State	Forest(s)	Limiting Factors/Threats	Justification	Management Recommendations
172	NO COMMON NAME	<i>Oreohelix metcalfei metcalfei</i>		G2T1	SNR	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 globally.	Protect talus slopes. Route recreational trails, road away from talus slopes. Conduct surveys if mining is proposed in or near occupied habitat.
173	NO COMMON NAME	<i>Oreohelix metcalfei radiata</i>		G2T2	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. Species is considered critically imperiled globally.	Protect talus slopes. Route recreational trails, road away from talus slopes. Conduct surveys if mining is proposed in or near occupied habitat.
174	NO COMMON NAME	<i>Oreohelix nogalensis (aka O. strigosa nogalensis)</i>		G5T2	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.
175	MINERAL CREEK MOUNTAINSNAIL	<i>Oreohelix pilsbryi</i>		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.
176	MORGAN CREEK MOUNTAINSNAIL	<i>Oreohelix swopei</i>		G1	S1	NM	GIL	Climate change, deforestation, fire. Species requires further study & evaluation regarding taxonomy & distribution as it relates to the <i>O. strigosa depressa</i> & <i>O. subrudis</i> 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.
177	GILA SPRINGSNAIL	<i>Pyrgulopsis gilae</i>		G2	S2 (Threatened in NM)	NM	GIL	The natural or human-induced destruction, modification, or curtailment of Gila springsnail habitat represents the primary threat to the species.	Limited distribution. 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.
178	VERDE RIM SPRINGSNAIL	<i>Pyrgulopsis glandulosa</i>		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.
179	PAGE SPRINGSNAIL	<i>Pyrgulopsis morrisoni</i>	C	G1	S1S2	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.
180	FOSSIL SPRINGSNAIL	<i>Pyrgulopsis simplex</i>		G1G2	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.
181	BROWN SPRINGSNAIL	<i>Pyrgulopsis sola</i>		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.
182	NEW MEXICO SPRINGSNAIL	<i>Pyrgulopsis thermalis</i>		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. 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.
183	HUACHUCA SPRINGSNAIL	<i>Pyrgulopsis thompsoni</i>	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.
184	CLARK PEAK TALUSSNAIL	<i>Sonorella christenseni</i>		G1	S1/SNR(NS)	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.
185	PINALENO TALUSSNAIL	<i>Sonorella grahamensis</i>		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.
186	NO COMMON NAME GIVEN; see Metcalf and Smartt (1997)	<i>Sonorella hachitana peloncillensis</i>		G2T1	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.
187	MIMIC TALUSSNAIL	<i>Sonorella imitator</i>		G2	S2/SNR	AZ/NM	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.
188	WET CANYON TALUSSNAIL	<i>Sonorella macrophallus</i>		G1	S1/SNR	AZ/NM	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.
189	SONORAN TALLUSNAIL	<i>Sonorella magdalenensis</i>	Positive 90-d	G2G3	S2	AZ	COR		It is dependent on moist conditions in an otherwise dry environment and is threatened by drought and climate change and talus snails generally only surface following monsoon rains.	In Arizona, a portion of its range is threatened by a large scale proposed openpit copper mine development project and the remainder is less threatened by habitat degradation and recreational activities.

192	DEFINITIONS	
193	A-S	Apache-Sitgreaves National Forests
194	AZ	Arizona
195	AZGFD	Arizona Game and Fish Department
196	B	Status rank is for breeding population.
197	BBS	Breeding Bird Survey
198	BK	Black Kettle National Grassland
199	B-M	Bison-M
200	C	Candidate species for federal listing
201	CAR	Carson National Forest
202	CIB	Cibola National Forest
203	CO	Colorado

