



United States Department of Agriculture

Santa Fe National Forest Plan At-Risk Species Selection Process and Justification



Forest Service

Santa Fe National Forest

March 2016

Identifying and Justifying At-Risk Species for the Santa Fe National Forest

This document provides rationale and justification for the selection of at-risk species on the Santa Fe National Forest (SFNF)*. There are two main categories of at-risk species identified under the 2012 Planning rule, they are: 1.) those species that are federally recognized as threatened, endangered, proposed, and candidate species, and 2.) potential “species of conservation concern” (SCC). This document provides the rationale for selection of those species as well as justification for inclusion or exclusion of each species that made the final lists according to planning directive criteria. In addition, this document also provides justification for a third category of species that was born out of the public review process. These species were not included in the initial assessment but public concern warranted additional scrutiny for maximum accountability.

Identifying At-Risk Species – Planning Directive

Guidance for identifying species at risk is provided by the Land Management Planning Handbook, Chapter 10 – The Assessments (FSH 1909.12). There are two main categories of at-risk species. They are:

- 1.) Federally recognized threatened, endangered, proposed and candidate species
- 2.) Potential species of conservation concern

Identification of at-risk species on the Santa Fe NF is accomplished by following the guidance in the planning directive and in cooperation with numerous federal, state, and tribal agencies along with various academic and non-governmental organizations using best available scientific information standards.

Federally Recognized Species on the Santa Fe NF

The Endangered Species Act (ESA) (16 U.S.C. Sec. 1531-1544), administered by the Department of the Interior, U.S. Fish and Wildlife Service (USFWS), recognizes imperiled species and provides for their protection and recovery.

*** There are eight (8) federally listed species relevant to the plan area (USDI Fish and Wildlife Service, 2014).

Species of Conservation Concern on the Santa Fe NF

The 2012 planning rule provides guidance for developing the initial list of species of conservation concern (SCC). Given the magnitude of the project, the U.S. Forest Service recognizes NatureServe as the leading source for base information on most species of plants and animals. NatureServe is a non-profit organization that provides high-quality scientific expertise for conservation. One of their resources, NatureServe Explorer, is a database of more than 70,000 plants, animals, and habitats of the United States and Canada. This searchable database houses species information such as conservation status, distribution, ecology, life history, management, and references.

NatureServe status ranks are based on a scale of one to five, ranging from critically imperiled (G1) to demonstrably secure (G5). Status is assessed and documented at three distinct geographic scales global (G), national (Na), and state/province (S). Intraspecific taxa (subspecies or other

designations below the level of species) are indicated by “T rank.” The conservation status of a species or ecosystem is designated by a number from 1 to 5, preceded by a letter reflecting the appropriate geographic scale of the assessment report (G=Global, Na=National, and S =State), or infraspecific (T) where appropriate. The numbers have the following meaning: 1=Critically Imperiled, 2=Imperiled, 3=Vulnerable, 4=Appraently Secure, and 5=Secure.

Developing an Initial List of Species of Conservation Concern:

Of the more than 7,000 animal, plants, and fungi species found in New Mexico (NatureServe 2015), only species with habitats and known occupation on national forest lands throughout New Mexico were carried forward. An initial list was developed based on the criteria listed below.

- Species with a status rank of G or T 1, 2, or G3 and S 1 or 2 on NatureServe ranking system;
- Species that were removed within the past 5 years from the Federal list of threatened or endangered species, and other delisted species that the regulatory agency still monitors.
- Species listed as threatened or endangered by relevant States, or federally recognized Tribes (Information for the State of New Mexico was derived from New Mexico Department of Game and Fish (BISON-M 2014) and the State Forestry Division (NMEMNRD, 2013), species listed as threatened or endangered by adjacent Pueblos and Tribes (Navajo Nation 2008));
- Species identified by Federal, State, federally recognized tribes as high priority for conservation;
- Species identified as species of conservation concern in adjoining National Forest System plan areas (Species on the adjoining Carson NF, are the same as those on the US Forest Service Southwest (Region3) Regional Forester’s Sensitive Species List (USDA Forest Service 2013));
- Species that are identified as recently delisted or have a positive 90-day finding in New Mexico by the USFWS (77 FR 69994); and
- Species identified as those of the greatest conservation need by the New Mexico Comprehensive Wildlife Conservation Strategy (NMDGF 2006) and New Mexico Rare Plant Technical Council (NMRPTC 1999).

*** There are fifty (52) species that have been identified according to the above SCC criteria.

Additional At-Risk Species on the Santa Fe NF– Public Comment

The public was continuously engaged throughout the development of the draft assessment. This included active engagement from federal, state and tribal governments (e.g. New Mexico Department of Agriculture, New Mexico Department of Game and Fish, Navajo nation, etc.), but also included open engagement from concerned groups and individuals. Non-government organizations (e.g. Audubon Society, Center for Biological Diversity, Trout Unlimited, Wilderness Society, etc.) as well as individual members of the general public provided input through a series of advertised planning meetings and during an open comment period following the release of the draft assessment. All comments were retained in the public record and are available through the planning website.

The general public commented on numerous species, many of which were captured in the standard planning directive process (federally listed or SCC), these species will not be duplicated in the table

below. There were, however, many species the public requested to be considered (or reconsidered). These species have been added to the list so the vetting process could be documented.

*** There are eight (8) species that have been identified by the public as needing additional scrutiny.

Complete List of Species Considered for the At-Risk Designation

The following table is a complete list of all species taken into consideration during the assessment phase of the planning process. The listed species either met the minimum criteria for consideration as directed by the planning handbook or were requested for consideration throughout the public engagement process. The listing categories includes: 1.) FED - federally listed species, 2.) SCC - species of conservation concern according to planning directive, and 3.) PUB - public concern from open engagement.

Table 1. At-risk species considerations on the Santa Fe Natinal Forest

Listing Category	#	Scientific Name	Common Name	NatureServe Rank
Mammals				
PUB	1	<i>Cervis canadensis</i>	Elk	G5 S3
SCC	2	<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big- Eared Bat	G3G4T3T4 N3N4 S3S4
SCC	3	<i>Cynomys gunnisoni pop. 1</i> <i>Cynomys gunnisoni</i>	Gunnison's Prairie Dog (montane population) (prairie population)	G5T2 N2 SNR G5 N5 S2
SCC	4	<i>Euderma maculatum</i>	Spotted Bat	G4 N3N4 S3
SCC	5	<i>Lepus americana</i>	Snowshoe Hare	G5 N5 S2
FED	6	<i>Lynx Canadensis Canada</i>	Canada Lynx	G5, Not listed in NM
SCC	7	<i>Marmota flaviventris</i>	Yellow-bellied Marmot	G5 N5 S2
SCC	8	<i>Martes caurina</i>	American Marten is now Pacific Marten in NatureServe	G4G5 N4N5 S2
SCC	9	<i>Ochotona princeps</i>	American Pika	G5 N5 S2
SCC	10	<i>Syn. Ochotona princeps saxatilis, Bangs 1899</i>	Goat Peak Pika	G5T5 N5 S1
SCC	11	<i>Ovis canadensis</i>	Rocky Mountain Bighorn Sheep	G4T4 N4 SNR
SCC	12	<i>Sorex cinereus</i>	Masked Shrew	G5 N5 S2
SCC	13	<i>Sorex palustris</i>	Water Shrew	G5 N5 S2
SCC	14	<i>Sorex preblei</i>	Preble's Shrew	G4 N4 S1
FED	15	<i>Zapus hudsonius luteus</i>	New Mexico Meadow Jumping Mouse	G5T2 S1
Birds				
SCC	16	<i>Accipiter gentilis</i>	Northern Goshawk	G5 N4B,N4N S2B,S3N
SCC	17	<i>Aegolius funereus</i>	Boreal Owl	G5 N4 S2B,S2N
SCC	18	<i>Aquila chrysaetos</i>	Golden Eagle	G5 N5B,N5N S3B,S4N
PUB	19	<i>Asio flammeus</i>	Short-eared Owl	G5S2N
SCC	20	<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	G4T4 N4 S3B,S3N
PUB	21	<i>Baeolophus ridgwayi</i>	Juniper Titmouse	G5S4B
PUB	22	<i>Buteo regalis</i>	Ferruginous Hawk	G4S2B,S4N
PUB	23	<i>Charadrius montanus</i>	Mountain Plover	G3S2B,S4N

Listing Category	#	Scientific Name	Common Name	NatureServe Rank
PUB	24	<i>Coccyzus americanus</i>	Yellow-Billed Cuckoo	G5S3B,S3N
FED	25	<i>Coccyzus americanus occidentalis</i>	Western Yellow-Billed Cuckoo	G5T2T3 S3B,S3N
SCC	26	<i>Cypseloides niger</i>	Black Swift	G4 N4B S2B,S2N
SCC	27	<i>Dendroica graciae</i> Syn. <i>Setaophaga graciae</i>	Grace's Warbler	G5 N5B S3B,S4N
SCC	28	<i>Dendroica nigrescens</i> Syn. <i>Setophaga nigrescens</i>	Black-Throated Gray Warbler	G5 N5B S3B,S4N
FED	29	<i>Empidonax traillii extimus</i>	Southwestern Willow Flycatcher	G5T2 S1B,S1N
SCC	30	<i>Falco peregrinus anatum</i>	American Peregrine Falcon	G4T4 N3B,N3 S2BS3N
SCC	31	<i>Gymnorhinus cyanocephalus</i>	Pinyon Jay	G5 N5 S3B,S3N
SCC	32	<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5 N5b,N5N S1B,S4N
SCC	33	<i>Lagopus leucurus</i>	White-tailed Ptarmigan	G5 N5 S1B,S1N
SCC	34	<i>Lanius ludovicianus</i>	Loggerhead Shrike	G4 N4 S3B,S4N
SCC	35	<i>Leucosticte atrata</i>	Black Rosy-Finch	G4 N4B,N4 S3N
SCC	36	<i>Leucosticte australis</i>	Brown-capped Rosy-Finch	G4 N4B,N4 S1B,S3N
SCC	37	<i>Melanerpes lewis</i>	Lewis's Woodpecker	G4 N4B,N4N S3B,S3N
SCC	38	<i>Melospiza lincolni</i>	Lincoln's Sparrow	G5 N5B,N5N S2B,S5N
PUB	39	<i>Oreothlypis virginiae</i>	Virginia's Warbler	G5S3B,S4N
SCC	40	<i>Pandion haliaetus</i>	Osprey	G5 N5B,N4N S2B,S4N
SCC	41	<i>Riparia riparia</i>	Bank Swallow	G5 N5B S2B,S5N
FED	42	<i>Strix occidentalis lucida</i>	Mexican Spotted Owl	G3G4T3T4 S2B,S2N
PUB	43	<i>Toxostoma bendirei</i>	Bendire's Thrasher	G4G5 S3B,S3N
SCC	44	<i>Vireo vicinior</i>	Gray Vireo	G4 N4B S4B,S3N
SCC	45	<i>Wilsonia pusilla</i> Syn <i>Cardellina pusilla</i>	Wilson's Warbler	G5 N5B S2B,S5N
Reptiles and Amphibians				
SCC	46	<i>Lithobates pipiens</i>	Northern Leopard Frog	G5 N5 S1
FED	47	<i>Plethodon neomexicanus</i>	Jemez Mountains Salamander	G2 S2
Invertebrate				
SCC	48	<i>Ashmunella ashmuni</i>	Jemez Woodlandsnail	G1 N1
SCC	49	<i>Gastrocopta ruidosensis</i>	Ruidoso Snaggletooth	G1 N1 S3
SCC	50	<i>Pisidium lilljeborgi</i>	Lilljeborg's Peaclam	G5 N5 S1
Fish				
SCC	51	<i>Catostomus plebeius</i>	Rio Grande Sucker	G3G4 N3 S2
SCC	52	<i>Gila pandora</i>	Rio Grande Chub	G3 N3 S3
FED	53	<i>Hybognathus amarus</i>	Rio Grande Silvery Minnow	G1 S1
SCC	54	<i>Oncorhynchus clarkii virginalis</i>	Rio Grande Cutthroat Trout	G4T3 N2 S2
Plants				
SCC	55	<i>Abronia bigelovii</i>	Tufted Sand Verbena	G3 N3 S3
SCC	56	<i>Asclepias uncialis ssp. uncialis</i>	Greene's Milkweed	G3G4T2T3 NNR S2
SCC	57	<i>Astragalus micromerius</i>	Chaco Milkvetch	G2 N3 S2

Listing Category	#	Scientific Name	Common Name	NatureServe Rank
SCC	58	<i>Calochortus gunnisonii</i> var. <i>perpulcher</i>	Gunnison's (Pecos) Mariposa Lily	G5T4? N4? S4?
SCC	59	<i>Cypripedium parviflorum</i> var. <i>pubescens</i>	Large Yellow Lady's-Slipper	G5T5 N4, N5 S2?
SCC	60	<i>Delphinium robustum</i>	Robust Larkspur aka Wahatoya Larkspur	G2? N2? S?
SCC	61	<i>Draba heilii</i> Al-shebaz	Heil's Alpine Whitlowgrass	GNR NNR SNR
SCC	62	<i>Erigeron subglaber</i>	Pecos Fleabane	G3 N3 S3
FED	63	<i>Ipomopsis sancti-spiritu</i>	Holy Ghost Ipomopsis	G1 S1
SCC	64	<i>Lilium philadelphicum</i>	Wood Lily	G5 N5 S3
SCC	65	<i>Mentzelia conspicua</i>	Chama Blazing Star	G2 N2 S2
SCC	66	<i>Mentzelia springeri</i>	Springer's Blazing Star	G3 NNR SNR
SCC	67	<i>Penstemon oliganthus</i>	Apache Beardtongue	G3? N3? SNR
SCC	68	<i>Salix arizonica</i>	Arizona Willow	G2G3 N2N3 S1

Determinations of At-Risk Species

Although a species meets minimum criteria to be placed on the initial list of at-risk species, a more in-depth analysis is conducted to determine inclusion or exclusion for the final list. The planning directives provides guidance for selecting species of conservation concern. An SCC is defined in the 2012 Planning Rule as “a species, other than federally recognized threatened, endangered, proposed, or candidate species, that is known to occur in the plan area and for which the regional forester has determined that the best available scientific information indicates substantial concern about the species’ capability to persist over the long-term in the plan area.”

Forest Service biologists at the Santa Fe NF Supervisor’s office and each of the districts and the Southwestern Regional Office consulted in the development of the potential SCC list. Subject matter experts at the U.S. Fish and Wildlife Service, New Mexico Department of Game and Fish, New Mexico Department of Forestry, Natural Heritage New Mexico, researchers and others who were able to consult internal records and databases or rely on expert knowledge to further filter the list were consulted. Subject matter experts were consulted via publications or personal communications and included staff at Natural Heritage New Mexico (NHNM) (R. McCollough and M. East); New Mexico State Forestry Division (M. Stuever and D. Roth); New Mexico Department of Game and Fish (F. Winslow, C. Painter, E. Goldstein, E. Rominger, M. Darr, D. Brooks, C. Hayes); New Mexico State University (J. Frey); Highland University (J. Jacobi); U.S. Fish and Wildlife Service (E. Hein, M. Christman); U.S. Forest Service (K. Kennedy); U.S. National Park Service (A. Chung-MacCoubrey); and the U.S. Geological Survey (C. Allen and E. Valdez).

Species of Conservation Concern Criteria:

a. The species is native to, and known to occur in, the plan area; and,

A species is known to occur in a plan area if, at the time of plan development, the best available scientific information indicates that a species is established or is becoming established in the plan area. A species with individual occurrences in a plan area that are merely “accidental” or “transient,” or are well outside the species’ existing range at the time of plan development, is not established or

becoming established in the plan area. If the range of a species is changing so that what is becoming its "normal" range includes the plan area, an individual occurrence should not be considered transient or accidental.

- b. ***The best available scientific information indicates substantial concern about the species’ capability to persist over the long term in the plan area.***

If there is insufficient scientific information available to conclude there is a substantial concern about the species capability to persist in the plan area over the long-term that species cannot be identified as a species of conservation concern.

If the species is secure and its continued long-term persistence in the plan area is not at risk based on knowledge of its abundance, distribution, lack of threats to persistence, trends in habitat, or responses to management that species cannot be identified as a species of conservation concern.

The above criteria was used to make the final detrminations for at-risk species.

Federally Listed Species

There are eight (8) federally listed species relevant to the plan area (USDI Fish and Wildlife Service, 2014). Although federally listed species are not to be included as a species of conservation concern (separate list) making a determination on the presence or absence of a listed species in the plan area determines whether or not that species is to be considered in the planning phase.

Table 2. Federally listed threatened (T) or endangered (E) species relevant to the plan area (USDI-FWS,2014)

Listing Category	#	Scientific Name	Common Name	NatureServe Rank	At-Risk Species Decision
Mammals					
FED	1	<i>Zapus hudsonius luteus</i>	New Mexico Meadow Jumping Mouse (E)	G5T2 S1	Yes
FED	2	<i>Lynx Canadensis Canada</i>	Canada Lynx (T)	G5, Not listed in NM	No
Birds					
FED	3	<i>Strix occidentalis lucida</i>	Mexican Spotted Owl (T)	G3G4T3T4 S2B,S2N	Yes
FED	4	<i>Coccyzus americanus occidentalis</i>	Western Yellow-Billed Cuckoo (T)	G5T2T3 S3B,S3N	No
FED	5	<i>Empidonax traillii extimus</i>	Southwestern Willow Flycatcher (E)	G5T2 S1B,S1N	No
Reptiles and Amphibians					
FED	6	<i>Plethodon neomexicanus</i>	Jemez Mountains Salamander (E)	G2 S2	Yes
Fish					
FED	7	<i>Hybognathus amarus</i>	Rio Grande Silvery Minnow (E)	G1 S1	No
Plants					
FED	8	<i>Ipomopsis sancti-spiritu</i>	Holy Ghost Ipomopsis (E)	G1 S1	Yes

Considered an At-Risk Species

Excluded from planning phase

Federally Listed Species on the Santa Fe National Forest

There is one federally threatened species known on the Santa Fe NF, the Mexican Spotted Owl, and three federally endangered species, the Jemez Mountains Salamander, the New Mexico Meadow Jumping Mouse, and the Holy Ghost Ipomopsis. At present there are no known federal candidate or federal proposed species on the forest.

Section 4 of the ESA requires the USFWS to identify and protect all lands, water, and air necessary to recover an endangered species; this is known as critical habitat. Critical habitat includes areas that have been determined to be needed for life processes for a species including space for individual and population growth and for normal behavior; cover or shelter; food, water, air, light, minerals, or other nutritional or physiological requirements; sites for breeding and rearing offspring; and habitats that are protected from disturbances or are representative of the historical geographical and ecological distributions of a species. The Mexican Spotted Owl and Jemez Mountains Salamander have designated critical habitat on the Santa Fe NF, the New Mexico Meadow Jumping Mouse has proposed critical habitat on the Santa Fe NF, and the Holy Ghost Ipomopsis, a flowering plant found only in one canyon on the Santa Fe NF, does not have designated critical habitat.

Justifications

New Mexico Meadow Jumping Mouse (*Zapus hudsonius luteus*) is federally listed as endangered. The species occurs in dense mid-elevation riparian long grass habitats in the western U.S. Proposed Critical habitat exists on the Santa Fe NF and the species has been documented on the forest. The number of historic locations of the species on the forest is greater than off the forest. The major threats faced are the degradation of riparian habitat caused by actions such as legacy grazing, post-wildfire flooding events, and unmanaged recreation. Off the forest, agricultural uses and development of land have permanently changed historic habitat.

Mexican Spotted Owl (*Strix occidentalis lucida*) is federally threatened species known on Coyote, Jemez, Española, and Pecos-Las Vegas Ranger Districts. This species is apparently non-migratory and feeds primarily on small mammals. Young owls, however, are known to disperse long distances. A recent record documents the movement of a Mexican Spotted Owl (MSO) banded on the Gila NF found dead on the Carson NF (RMRS 2013), which could mean it might have travelled through the Santa Fe NF. There are 80,487 hectares (198,888 acres) of designated critical habitat on the Santa Fe NF and this is described in more detail in Volume 2 Chapter 6, Designated Areas. The Mexican Spotted Owl requires a variety of mixed conifer habitats, proximity to riparian areas, standing large snags for roosting and nesting, or cavities in vertical canyon walls. Timber management activities negatively affected habitat before the MSO was listed as threatened in 1995. Timber harvest, prescribed burning, and other management activities are designed following the Mexican Spotted Owl Recovery Plan 2012 along with consultation with the USFWS. These management activities can still have disturbance affects to the Mexican spotted owl and its habitat.

Jemez Mountains Salamander (*Plethodon neomexicanus*) is a federally endangered species endemic only to the Santa Fe NF. It was listed as endangered in 2013. There are 22,974 hectares (56,770 acres) of designated critical habitat on the Santa Fe NF and this is described in more detail in Volume 2 Chapter 6, Designated Areas. It feeds primarily on invertebrates. Threats include habitat loss from severe wildfire or other activities that alter hydrology and disease including chytrid fungus. Grazing is believed to be a vector for chytrid fungus when livestock carry it into the habitat from water sources where it can be present. Wildlife can also carry the fungus now but did not do so in the past as chytrid fungus was not known to be present under reference conditions.

Holy Ghost Ipomopsis (*Ipomopsis sancti-spiritus*) is a federally endangered plant species found only on the Pecos RD. It is a genetically distinct endemic species found only in the Holy Ghost Canyon in the Sangre de Cristo mountain range. A Recovery Plan was written for it in 2002 and is being followed with the additional work of state botanists to experimentally plant seedlings to increase the population. The species has been transplanted to a few other sites but success is uncertain for maintaining it.

Federally Listed Species – Not Considered on the Santa Fe NF

Four federally listed species, the Canada lynx and Western yellow-billed cuckoo (threatened), and the Southwestern willow flycatcher and Rio Grande silvery minnow (endangered) will not be carried forward to the final forest plan. These four species are not established, nor are they likely to become established on the forest. There has also been no critical habitat identified on Santa Fe NF for these species.

Justifications

Canada Lynx (*Lynx canadensis canada*) listed as threatened in NM, has not been documented to den or breed on the Santa Fe NF. NatureServe does not even identify a lynx population with the state of New Mexico. Lynx generally occur in Canada and other alpine areas and in the Rockies in boreal and montane regions dominated by coniferous or mixed forest with thick undergrowth, but also sometimes enters open forest, rocky areas, and tundra to forage for abundant prey. An individual animal wandering south from Colorado could occasionally use the forest while exploring for territory, however, climate change models (Lawler, Shafer et al. 2009) predict decreased potential for use. There is no solid prey base to support a population of lynx since snowshoe hare populations are of concern on the forest. There is no critical habitat present on the Santa Fe NF. *Status: Not present on the forest and not likely to become established.*

Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*) is a threatened species, that could potentially use limited riparian habitat on the Santa Fe NF, but is only known as a migrant species. There are no known locations of this species on the Santa Fe NF but slight potential to use bosque areas during migration along the Rio Grande or Jemez River. This species is unlikely to become established on the Santa Fe NF since its critical habitat consists of riparian woodlands with mixed willow-cottonwood vegetation, mesquite-thornforest vegetation, or a combination of these that contain habitat for nesting and foraging. It requires contiguous or nearly contiguous patches that are greater than 325 ft (100 m) in width and 200 ac (81 ha) or more in extent. These habitat patches contain one or more nesting groves, which are generally willow dominated, have above average canopy closure (greater than 70 percent), and have a cooler, more humid environment than the surrounding riparian and upland habitats. These habitat conditions are not known to be present on the Santa Fe NF and there is no critical habitat identified on the forest. *Status: Not present on the forest and not likely to become established.*

Southwestern Willow Flycatcher (*Empidonax traillii extimus*) is an endangered species that has not been documented on the Santa Fe NF. Habitat includes riparian and wetland thickets, generally of willow, tamarisk, or both, sometimes boxelder or Russian olive. Habitat patches comprising mostly native vegetation account for fewer than half (44 percent) of the known flycatcher territories. Habitat patches as small as 0.5 hectares can support one or two nesting pairs. Nests are typically placed in trees where the plant growth is most dense, where trees and shrubs have vegetation near ground level, and where there is a low-density canopy (NatureServe 2015). There is no critical habitat present on the Santa Fe NF. *Status: Not present on the forest and not likely to become established.*

Rio Grande Silvery Minnow (*Hybognathus amarus*) is an endangered species that has not been documented on the Santa Fe NF. There are no known populations on the Santa Fe NF because the species does not occur above the dam on Cochiti Reservoir that is on Cochiti Pueblo land. Northern Pike, a highly

predatory fish, are in the Rio Grande above the reservoir, making restoration of the minnow above the reservoir highly unlikely. There is no Critical Habitat present on the Santa Fe NF. *Status: Not present on the forest and not likely to become established.*

Species of Conservation Concern

There are fifty-two (52) species that met the initial criteria for being identified as a species of conservation concern on the Santa Fe NF, twenty (20) of those species were removed from the list due to one of the following conditions; 1) the species was not known to occur on the forest, or 2) the best available scientific information did not indicate substantial concern for the species to persist on the forest.

Table 3. Species of conservation concern as identified by NatureServe and other recognized species lists.

Listing Category		Scientific Name	Common Name	NatureServe Rank	At-Risk Species Decision
Mammals					
SCC	1	<i>Cynomys gunnisoni pop. 1</i> <i>Cynomys gunnisoni</i>	Gunnison's Prairie Dog (montane population) (prairie population)	G5T2 N2 SNR G5 N5 S2	Yes
SCC	2	<i>Euderma maculatum</i>	Spotted Bat	G4 N3N4 S3	Yes
SCC	3	<i>Lepus americana</i>	Snowshoe Hare	G5 N5 S2	Yes
SCC	4	<i>Martes caurina</i>	American Marten is now Pacific Marten in NatureServe based on new genetic work.	G4G5 N4N5 S2	Yes
SCC	5	<i>Sorex cinereus</i>	Masked Shrew	G5 N5 S2	Yes
SCC	6	<i>Sorex palustris</i>	Water Shrew	G5 N5 S2	Yes
SCC	7	<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big- Eared Bat	G3G4T3T4 N3N4 S3S4	No
SCC	8	<i>Marmota flaviventris</i>	Yellow-bellied Marmot	G5 N5 S2	No
SCC	9	<i>Ochotona princeps</i>	American Pika	G5 N5 S2	No
SCC	10	<i>Ochotona princeps nigrescens</i> , <i>V. Bailey 1912</i> <i>Syn. Ochotona princeps saxatilis</i> , <i>Bangs 1899</i>	Goat Peak Pika	G5T5 N5 S1	No
SCC	11	<i>Ovis canadensis</i>	Rocky Mountain Bighorn Sheep	G4T4 N4 SNR	No
SCC	12	<i>Sorex preblei</i>	Preble's Shrew	G4 N4 S1	No
Birds					
SCC	13	<i>Accipiter gentilis</i>	Northern Goshawk	G5 N4B,N4N S2B,S3N	Yes
SCC	14	<i>Aegolius funereus</i>	Boreal Owl	G5 N4 S2B,S2N	Yes
SCC	15	<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	G4T4 N4 S3B,S3N	Yes
SCC	16	<i>Cypseloides niger</i>	Black Swift	G4 N4B S2B,S2N	Yes
SCC	17	<i>Falco peregrinus anatum</i>	American Peregrine Falcon	G4T4 N3B,N3 S2BS3N	Yes
SCC	18	<i>Gymnorhinus cyanocephalus</i>	Pinyon Jay	G5 N5 S3B,S3N	Yes
SCC	19	<i>Lagopus leucurus</i>	White-tailed Ptarmigan	G5 N5	Yes

Listing Category		Scientific Name	Common Name	NatureServe Rank	At-Risk Species Decision
				S1B,S1N	
SCC	20	<i>Melanerpes lewis</i>	Lewis's Woodpecker	G4 N4B,N4N S3B,S3N	Yes
SCC	21	<i>Aquila chrysaetos</i>	Golden Eagle	G5 N5B,N5N S3B,S4N	No
SCC	22	<i>Dendroica graciae</i> Syn. <i>Setaophaga graciae</i>	Grace's Warbler	G5 N5B S3B,S4N	No
	23	<i>Dendroica nigrescens</i> Syn. <i>Setophaga nigrescens</i>	Black-Throated Gray Warbler	G5 N5B S3B,S4N	No
SCC	24	<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5 N5b,N5N S1B,S4N	No
SCC	25	<i>Lanius ludovicianus</i>	Loggerhead Shrike	G4 N4 S3B,S4N	No
SCC	26	<i>Leucosticte atrata</i>	Black Rosy-Finch	G4 N4B,N4 S3N	No
SCC	27	<i>Leucosticte australis</i>	Brown-capped Rosy-Finch	G4 S1B,S3N	No
SCC	28	<i>Melospiza lincolni</i>	Lincoln's Sparrow	G5 N5B,N5N S2B,S5N	No
SCC	29	<i>Pandion haliaetus</i>	Osprey	G5 N5B,N4N S2B,S4N	No
SCC	30	<i>Riparia riparia</i>	Bank Swallow	G5 N5B S2B,S5N	No
SCC	31	<i>Vireo vicinior</i>	Gray Vireo	G4 N4B S4B,S3N	No
SCC	32	<i>Wilsonia pusilla</i> Syn <i>Cardellina pusilla</i>	Wilson's Warbler	G5 N5B S2B,S5N	No
Reptiles and Amphibians					
SCC	33	<i>Lithobates pipiens</i>	Northern Leopard Frog	G5 N5 S1	Yes
Invertebrate					
SCC	34	<i>Ashmunella Ashmuni</i>	Jemez Woodlandsnail	G1 N1	Yes
SCC	35	<i>Gastrocopta ruidosensis</i>	Ruidoso Snaggletooth	G1 N1 S3	Yes
SCC	36	<i>Pisidium lilljeborgi</i>	Lilljeborg's Peaclam	G5 N5 S1	Yes
Fish					
SCC	37	<i>Catostomus plebeius</i>	Rio Grande Sucker	G3G4 N3 S2	Yes
SCC	38	<i>Gila pandora</i>	Rio Grande Chub	G3 N3 S3	Yes
SCC	39	<i>Oncorhynchus clarkii virginalis</i>	Rio Grande Cutthroat Trout	G4T3 N2 S2	Yes
Plants					
SCC	40	<i>Abronia bigelovii</i>	Tufted Sand Verbena	G3 N3 S3	Yes
SCC	41	<i>Asclepias uncialis ssp. uncialis</i>	Greene's Milkweed	G3G4T2T3 NNR S2	Yes
SCC	42	<i>Astragalus micromerius</i>	Chaco Milkvetch	G2 N3 S2	Yes
SCC	43	<i>Calochortus gunnisonii var. perpulcher</i>	Gunnison's (Pecos) Mariposa Lily	G5T4? N4? S4?	Yes
SCC	44	<i>Cypripedium parviflorum var. pubescens</i>	Large Yellow Lady's-Slipper	G5T5 N4, N5 S2?	Yes
SCC	45	<i>Draba heilii</i> Al-shebaz	Heil's Alpine Whitlowgrass	GNR NNR SNR	Yes
SCC	46	<i>Erigeron subglaber</i>	Pecos Fleabane	G3 N3 S3	Yes
SCC	47	<i>Lilium philadelphicum</i>	Wood Lily	G5 N5 S3	Yes

Listing Category		Scientific Name	Common Name	NatureServe Rank	At-Risk Species Decision
SCC	48	<i>Mentzelia conspicua</i>	Chama Blazing Star	G2 N2 S2	Yes
SCC	49	<i>Mentzelia springeri</i>	Springer's Blazing Star	G3 NNR SNR	Yes
SCC	50	<i>Salix arizonica</i>	Arizona Willow	G2G3 N2N3 S1	Yes
SCC	51	<i>Delphinium robustum</i>	Robust Larkspur aka Wahatoya Larkspur	G2? N2? S?	No
SCC	52	<i>Penstemon oliganthus</i>	Apache Beardtongue	G3? N3? SNR	No

Considered an At-Risk Species

Excluded from planning phase

Species of Conservation Concern – Considered on Santa Fe NF

Thirty two species were identified as species of conservation concern on the Santa Fe NF. There is information indicating substantial concern about each species' capability to persist over the long term in the plan area. All species listed met one or more of the initial requirements for SCC (table 2). A number of sources, including professionals within Federal and State government as well as NGOs, were consulted to determine whether the species was at-risk on the Santa Fe NF. For all potential SCC candidates the ecological conditions for persistence were compared against the current and future trend of those conditions on the forest as well as other key risk factors associated with those conditions. Consideration was also given to factors not assessed by the assessment. Concerns for persistence of the following species on the Santa Fe NF are as follows:

Justifications

Gunnison's Prairie Dog (*Cynomys gunnisoni*) is currently known on the Northwest and Central local zones but has historically been on all the local zones on the Santa Fe NF. It is primarily found in small numbers on the Caja del Rio Plateau and in the Chama Wild and Scenic corridor and occasionally at lower elevations on other districts. Prairie dogs typically occupy pinyon-juniper habitats which are in low to moderate departure. Threats include recreational shooting (NMDGF has no regulations against shooting prairie dogs) and sylvatic plague. Due to its decrease range on the Santa Fe NF, sylvatic plague can be a limiting factor and eliminate colonies in one season preventing them from reaching a sustainable population and colonizing areas formerly occupied. Due to their isolated populations and susceptibility to plague Gunnison's prairie dogs remain at-risk for persistence on the Santa Fe NF.

Spotted Bat (*Euderma maculata*) individuals have been recorded on the Northwest, Southwest and Southeast local zones of the Santa Fe NF. They are believed to require key ecosystem characteristics of accessible rock crevices (within all terrestrial ERUs) to roost in, which are limited or unknown on the forest. Recreational climbing (20% potential habitat affected) is known to impact this species due to disturbance at roost sites. The potential seems low for white-nose syndrome, a lethal fungal infection found in some species of hibernating bats in the eastern and mid-western United States, as this bat is not known to hibernate in groups. Though this bat is associated with multiple ERUs, their preferred habitat is sub-alpine coniferous forests which tend to be moderately to highly departed. This bat feeds on noctuid moths in and over the forest canopy. Large wildland fires can threaten this species if uncharacteristic and catastrophic fires remove large portions of the landscape. Restoration of the Santa NF is needed to avoid impacts to the population, which is low to rare wherever it is found.

Snowshoe Hare (*Lepus americana*) is found only in the Spruce-Fir Foprest (SFF) ERU in the Northeast local zone of the Santa Fe NF. Their numbers are low but this may be due to the Sangre de Cristo Mountains being at the southernmost extent of their range. This ERU is in moderate departure but recent large wildfires (Pacheco Fire 2011 and Jaroso Fire 2013) have reduced the Spruce-Fir ERU in the Northeast zone, where the hare exists on the forest. A primary threat to the persistence of snowshoe hare is the build up of coarse woody debris in the SFF. A catastrophic fire within this ERU could potentially eliminate much of the remaining habitat available for snowshoe hare. Another anthropomorphic threat may be the introduction of invasive vegetation (thistle) which is altering the composition of its native habitat. Due to its isolated range within the Santa Fe NF an uncharacteristic fire or increased encroachment of invasive species puts snowshoe at-risk for persistence on the forest.

Pacific (American) Marten (*Martes caurina*) is a cat-sized weasel family predator known only from the Sangre de Cristo Mountains, is at the edge of the species' range within the Santa Fe NF. This species had extensive searches for it in the Jemez Mountains in the best habitat available but results were negative (Long 2015) resulting in the only known population in the Spruce Fir Forests (SFF) in the NEZ. It is very rare and was trapped nearly to extinction in the 20th century. It lives fairly exclusively in mature spruce-fir and higher elevation mixed conifer forests. Spruce-fir forests in the NEZ are moderately departed from reference condition with limited predicted change in seral state departure. Recent large wildfires (Pacheco Fire 2011 and Jaroso Fire 2013) have reduced the Spruce-Fir ERU in the Northeast zone. A primary threat to the persistence of American marten is the build up of coarse woody debris in the SFF. A catastrophic fire within this ERU could potentially eliminate much of the remaining habitat available for martens. Another anthropomorphic threat may be the introduction of invasive vegetation (thistle) which is altering the composition of its native habitat. Due to its isolated range within the Santa Fe NF an uncharacteristic fire or increased encroachment of invasive species puts American marten at-risk for persistence on the forest.

Masked Shrew (*Sorex cinereus*) hunts insects and small mammals along banks of cold streams, in wet meadows, or under logs in cold spruce forest (Spruce-Fir Forest ERU and Herbaceous, Willow-Thin-leaf Alder, Upper Montane Conifer-Willow, and Narrow-leaf Cottonwood-Spruce riparian ERUs). Most of these ERUs' current ecological conditions on the Santa Fe NF are departed from reference, because of changes in vegetative composition and hydrology. Negative impacts to the masked shrew include sedimentation caused by grazing (90% potential habitat affected), fuelwood gathering (20% potential habitat affected), wildfire, recreation (2% potential habitat affected), motorized travel (8% potential habitat affected), and changes in hydrology. Key characteristics of quality masked shrew habitat are currently highly departed (e.g. site potential and proportion of bare soil are departed at 73 and 60 percent, respectively), while potential to return to reference conditions remains unknown. When looking at the potential risk of compromised system integrity of perennial streams across the 37 watersheds, 10 were assigned a low risk, 11 a moderate risk, and 7 a high risk. Although 9 watersheds had no risk (as perennial streams were not present), almost half of all perennial streams (where present) were deemed moderate to high risk to system integrity. The masked shrew appears to be at-risk on the Santa Fe NF given its S2 status in NatureServe and its highly departed riparian habitats.

Water shrew (*Sorex palustris*) is a riparian dependent shrew and are similar to masked shrews in that they hunt for insects or small minnows exclusively in clear, cold high elevation streams. Most of these ERUs' current ecological conditions on the Santa Fe NF are departed from reference, because of changes in vegetative composition and hydrology. Negative impacts to the water shrew include sedimentation caused by grazing (90% potential habitat affected), fuelwood gathering (20% potential habitat affected), wildfire, recreation (2% potential habitat affected), motorized travel (8% potential habitat affected), and changes in hydrology. Key characteristics of quality water shrew habitat are currently highly departed (e.g. site potential and proportion of bare soil are departed at 73 and 60 percent, respectively), while

potential to return to reference conditions remains unknown. When looking at the potential risk of compromised system integrity of perennial streams across the 37 watersheds, 10 were assigned a low risk, 11 a moderate risk, and 7 a high risk. Although 9 watersheds had no risk (as perennial streams were not present), almost half of all perennial streams (where present) were deemed moderate to high risk to system integrity. The water shrew appears to be at-risk on the Santa Fe NF given its S2 status in NatureServe and its highly departed riparian habitats.

Northern Goshawk (*Accipiter gentilis*) is a forest habitat generalist that uses a wide variety of forest ages, structural conditions and successional stages, most of which are departed from reference condition on the Santa Fe NF because of fire suppression activities and in some cases, stand-replacing fire (50% of potential habitat). Although the departure from reference in Ponderosa pine forests has created closed canopy conditions beneficial to Northern goshawks they remain extremely vulnerable to catastrophic fire which can greatly alter/reduce optimal habitat. Nest sites are found in all the local zones surrounded by post-fledging family areas (PFAs). They are identified and managed according to guidelines in the forest plan. Several nest sites and PFAs have been lost or abandoned because of stand-replacing fires. Annual monitoring within the plan area has documented this decline. Strong direction to incorporate the vegetative guidelines for developing forest structure is needed especially for the recovering burned areas for the species to persist over the long term in the plan area. Insignificant information provided by Breeding Bird Survey.

Boreal Owl (*Aegolius funereus*) is only found in the Spruce-Fir ERU which is in moderate departure from reference conditions in all local zones except the Southeast local zone where it is in high departure. Populations appear to be extremely small with only three eBird observations in the SEZ since 2012. Of the forested ERU types, SFF has the highest vulnerability to predicted climate change and only two other ERUs found on the Forest have a higher proportion of vulnerability in the high and very high categories. This species is at the southern most extension of its range and although it has been found on surveys, recent large wildfires (South Fork 2010, Pacheco Fire 2011, Las Conchas 2011, Thompson Ridge 2013 and Jaroso Fire 2013) have reduced the Spruce-Fir ERU in these local zones. A catastrophic fire within this ERU could potentially eliminate much of the remaining habitat available for boreal owls. The boreal owl appears to be at-risk on the Santa Fe NF given its S2B/S2N status in NatureServe and its highly departed and potentially vulnerable spruce-fir habitat.

Western Burrowing Owl (*Athene cunicularia hypugaea*) is found on the Santa Fe NF in one location in the Central zone in the Colorado Plateau Great Basin Grassland ERU. This ERU is considered in high departure from reference condition thereby a greater risk to the species. The presence of the Western Burrowing Owl on the forest was only discovered in 2014. They nest and roost in recently abandoned burrows dug by mammals, including ground squirrels, prairie dogs, and badgers. Prairie dog populations, including the at-risk Gunnison prairie dog, are a concern due to their susceptibility to sylvatic plague. If vegetation around colonies is not maintained (trimmed) prairie dog herbivory these burrows may soon become unsuitable for nesting (Green and Anthony 1989). For this reason, viability of the Western Burrowing Owl is inextricably linked to that of prairie dogs. Threats to this species on the Santa Fe NF include any threats to burrowing mammals, recreational shooting, domestic predators (feral cats and dogs) at large and sylvatic plague (Antolin, Gober et al. 2002, Dechant, Sondreal et al. 2002). Insignificant information provided by Breeding Bird Survey.

Black Swift (*Cypseloides niger*) nest behind or near waterfalls or caves. It has a low reproductive rate of one nestling a year. It is known to occur at a site in the Southeast local zone and a site in the Northeast local zone. Although little is known of this species, its spruce-fir habitat remains highly vulnerable to predicted climate change. Primary threats include recreational climbing and harassment at nest sites. Due to its primary existence at only two geographical sites (Jemez and Nambe falls) within the

Santa Fe NF the species can be seriously impacted by management or other recreational activities that occur on the forest. Since waterfall features tend to be a highly attractive to recreationists, there is increased potential for impact at nesting sites. The black swift is listed as an S2B/S2N species according to NatureServe resulting in an at-risk designation. No information provided by Breeding Bird Survey.

American Peregrine Falcon (*Falco peregrinus anatum*) is known as single pairs or very limited numbers within all the local zones where it nests in suitable cliffs and rock outcrops. Threats include disturbance, egg shell thinning from accumulated pesticides, and disturbance from recreational activities (90% of potential habitat). Of the known eyries on the Santa Fe NF, about a quarter of them were monitored from 2001-2013 under contract with US Fish and Wildlife Service or NMDGF. Long term monitoring (Johnson and Williams III, unpublished) shows declining productivity of peregrines from in New Mexico. Results from monitoring project show reproduction at less than one offspring per bonded pair. Given their limited numbers and stagnant reproduction, this species should be considered at-risk on the Santa Fe NF. Insignificant information provided by Breeding Bird Survey.

Pinyon Jay (*Gymnorhinus cyanocephalus*) are tied to the PJ Sagebrush and PJ Woodland ERUs. PJ Sagebrush is in moderate departure from reference conditions while PJ Woodland is in low to moderate departure. Although predicted to remain in low departure from reference conditions PJ habitats are predicted to have the greatest variation amongst zones when it comes to climate change vulnerability. Breeding Bird Survey trend data for Pinyon jays suggest declines in populations, survey results shows 4.0% declining trend (significant) in New Mexico from 2003-2013. Though exact cause of Pinyon jay is unknown, it may be due to their reliance on pinyon trees which were significantly impacted by recent drought conditions on the forest.

White-tailed Ptarmigan (*Legopus leucurus*) utilize the Alpine and Tundra ERU of the Santa NF (<1% of the forest), which is only found on the Northeast local zone. Threats include degradation of habitat by grazing (25% potential habitat affected) and recreation (15% potential habitat affected) since the birds rely on alpine meadows with short vegetation consisting of sedges and herbaceous broad-leaved plants for nesting and brooding. Monitoring on the Carson NF indicates that ptarmigan are found in the alpine and tundra habitat shared with the Santa Fe NF but in very small numbers (Wolfe, Larsson et al. 2014). This species was re-introduced nearly 50 years ago after extirpation and the population could at this point have low genetic diversity. Use of New Mexico's limited alpine tundra habitat by livestock plus increased human use including wilderness hiking, ski area developments, construction of snow catchment fences, and microwave relay stations, are among the threats to the state's remnant ptarmigan population. Given their limited numbers, isolated geographic range and threats to their habitat this species should be considered at-risk on the Santa Fe NF.

Lewis's Woodpecker (*Melanerpes lewisi*) is tied to the Ponderosa Pine ERU which is in high departure from reference condition in all local zones on the Santa Fe NF. This species has a large range in the western U.S. and adjacent southern Canada, but distribution can be spotty; apparently declining in abundance, and may have declined 60 percent or more since the 1960s. Vulnerable to loss of nesting sites (large snags) such as may result from logging, urban and agricultural development; and to degradation of riparian habitats by drought and overgrazing. Large wildfires in the Jemez Mountains have negatively affected the Ponderosa Pine ERU large tree and large snag special feature needed by this species. Current Ponderosa pine forest landscapes have changed significantly towards single storied, closed canopy seral states. At the plan scale only 3 percent of the SFNF PPF landscape is similar to reference conditions. Just over 70 percent of the landscape has moved into closed canopy states with 60 percent representation in the medium to large tree states and 11 percent in the small diameter tree state. With limited variation between local zones, snag densities at the plan scale don't differ much from any one local zone with roughly 1 large diameter (18 inches and greater dbh) snag and 8 smaller diameter (8.0 to 17.9 inch dbh)

snags per acre. insignificant information provided by Breeding Bird Survey. This species should be considered at-risk on the Santa Fe NF due to its continued population decline and its high departure from reference of their Ponderosa pine habitat.

Northern Leopard Frog (*Lithobates pipiens*) were found in all the local zones historically but are now absent in many historic locations. This riparian species requires springs, slow streams, or other perennial water as habitat and for overwintering; during warmer months they may be found in wet meadows or other habitats near standing water and these habitats are limited on the Santa Fe NF. Characteristics of quality Northern leopard frog habitat are currently highly departed (e.g. site potential and proportion of bare soil are departed at 73 and 60 percent, respectively), while potential to return to reference conditions remains unknown. Threats to their aquatic habitats were moderate to high. For lakes and ponds, the potential risk to compromised system integrity within the Santa Fe NF was moderate for most watersheds, while the potential risk to compromised system integrity of seeps and springs within the Santa Fe NF was high for most of the watersheds. Ongoing threats include degradation of habitat caused by grazing, chytrid fungus, or siltation due to uncharacteristic wildlife and poor road management (95% of potential habitat). Northern leopard frogs should be considered at-risk due to their limited range and moderate to high risk within their habitats.

Jemez Woodland Snail (*Ashmunella ashmuni*) is a narrow endemic occurring in only a few canyons in the SWZ of Santa Fe NF. Rated as a G1 species it is not known to be found in any other locations. They are associated with limestone outcropping in Juniper grassland, Ponderosa pine and Mixed conifer (dry) ERU's, all of which are in moderate to high departure with no significant improvement predicted. The snails are a moisture dependant species so climate change may significantly impact this species. Given the habitats of the only known populations of this species are highly departed, Jemez woodland snails should be considered at-risk on the Santa Fe NF.

Ruidoso Snaggletooth (*Gastrocopta ruidosensis*) is a snail found only in two widely separated areas in New Mexico. It lives in plant and leaf litter near limestone outcrops in juniper grasslands (JUG) only on the east side of the Sangre de Cristo Mountains (Nekola and Coles 2010). Of the woodland ERUs found on the Forest, climate change vulnerability for JUG is relatively low with 29 percent low, and 54 percent in the moderate vulnerability category. The North-West Zone, where the majority (52 percent) of JUG is found on the Forest is relatively low in comparison to the other three zones where JUG is found, with 47 percent at low and 41 percent at projected moderate vulnerability. It's highly restricted range invariably places this species vulnerable to persistence on the Santa Fe NF. It can be affected by prescribed burning and trampling. It is a rather recent discovery on the Santa Fe NF and a new addition to the Regional Forester's sensitive species list of 2013.

Lilljeborg's Peaclam (*Pisidium lilljeborgi*) is found in only one high elevation lake in the Pecos Wilderness and nowhere else on the continent. It's highly restricted range invariably places this species vulnerable to persistence on the Santa Fe NF. The lake in which they are found has not been assessed according to its reference condition. Threats include siltation into the lake or use of chemical retardant for fire suppression that could wash into the lake. Considering the forest surrounding the lake is prone to potential catastrophic fire, this species should be considered at-risk on Santa Fe NF.

Rio Grande Cutthroat Trout, Rio Grande Chub and Rio Grande Sucker (*Oncorhynchus clarkii virginalis*) (*Gila pandora*) and (*Catostomus plebeius*) need clean, cold water to survive. Very few streams on the Santa Fe NF are free of habitat impacts whether from grazing, recreation or motorized travel, or road management (or lack of it), or non-native German Brown Trout or Rainbow Trout. Native fish are subject to direct predation on adults, juveniles or eggs, and interbreeding of Rio Grande Cutthroat Trout with Rainbow Trout. Within the Santa Fe NF, 46 percent of the impaired waters are within the Jemez Sub-basin, 21 percent are in the Pecos Headwaters Sub-basin, 24 percent are in the Rio Chama sub-basin, the

remaining 9 percent are spread across perennial streams in the Rio Grande – Santa Fe, Rio Puerco and Upper Rio Grande sub-basins. When looking at the potential risk of compromised system integrity of perennial streams across the 37 watersheds, 10 were assigned a low risk, 11 a moderate risk, and 7 a high risk. Although 9 watersheds had no risk (as perennial streams were not present), almost half of all perennial streams (where present) were deemed moderate to high risk to system integrity. Sedimentation from various road sources degrades water habitat quality and negatively impacts eggs and fry (96% of potential habitat).

Tufted Sand Verbena (*Abronia bigelovii*) also known as the Galisteo Sand Verbena have been documented in only a few locations in the Northwest zone of the Santa Fe NF. This species is generally scattered along outcroppings of gypsum or strongly gypseous soils. While this species may seem to have a relatively broad range geographically, its habitat is actually quite limited because of its spotty distribution across the landscape. Although geologic features such as gypsum and gypseous soils should remain in low departure from reference conditions, in general, these habitats are considered at risk for significant increased drying and prolonged drought from climate change increasing the stress from other threats (fire and grazing) as well.

Greene's Milkweed (*Asclepias uncialis* ssp. *uncialis*) occurs in low numbers where ever it is found. It has been reported from only one location in the Southeast local zone. Threats include trampling by livestock. The area it is reported to occur is not subject to grazing except by occasional strays. Seral state departure is low in Pinyon-Juniper Woodland habitat, however, there is some departure in composition due to introduction of non-native species. Understory composition has been moderately impacted (36 percent departure) by invasive species such as bull thistle, Russian olive, salt cedar and Siberian elm. Similarity to site potential has also been influenced by drought and other disturbances that have reduced vegetative ground cover and increased the proportion of bare soil. Partial reductions in vegetative cover can be attributed to the substantial increases in CWD loadings. Given its few known populations and susceptibility to encroachment by invasive species, this plant should be considered at-risk on the Santa Fe NF.

Chaco Milkvetch (*Astragalus micromerius*) Existing populations tend to be isolated which, for plants, substantially increases the probability of genetic uniqueness within each and adaptation to the specific sites, and that is a factor in conserving diversity. Current departure from desired condition within their ERUs; PJ Woodland, PJ Sage, and PJ Grassland; may result in significantly increasing stress and decreasing vigor for these species, as these usually shallow outcrop formations will be drying more rapidly. Although projected status in PJ habitats appears to trend toward reference conditions, in general, these habitats are considered at risk for significant increased drying and prolonged drought from climate change increasing the stress from other threats (fire and grazing) as well. The Navajo nation cited increasing threats from trampling, off road vehicle use, and mining activities. While this species may seem to have a relatively broad range geographically, its habitat (these outcroppings of sandstone that are blended with Todilto gypsum or limestone) is actually quite limited because of its spotty distribution across the landscape.

Gunnison's Mariposa Lily (*Calochortus gunnisonii* var. *perpulcher*) is a very rare and restricted endemic, in a delicate habitat, inherently vulnerable because of its rarity: The lily occupies meadows and aspen glades in upper montane coniferous forest (MSG); 2,900-3,400 m (9,500-11,200 ft), one of the habitats presumably very vulnerable to climate change. Mid- and high-seral states that are currently 50 percent departed from reference will transition to tree and shrub invaded states with continued encroachment. The lack of disturbance also continues to limit the amount of MSG sites that are reinitiated back to an early, low-seral state. The overall seral state proportion for MSG, like other frequent-fire systems continues to remain in a highly-departed condition based on 100-year VDDT

modeling. Based on the current disturbance regime, modeled future conditions indicate that limited fire occurrence in this ERU will continue leading to degraded conditions in MSG. Although the New Mexico Rare Plant site states that its response to grazing and fire is unknown the threats from grazing and fire may be a concern in the meadow and glade habitats for a species this restricted.

Large Yellow Lady's Slipper (*Cypripedium parviflorum* var. *pubescens*) is known from only eight locations on the Santa Fe NF. A primary threat to the persistence of Large Yellow Lady's-Slipper is the build up of coarse woody debris in the SFF. A catastrophic fire within this ERU could seriously reduce the distribution and number of specimens of this plant on the forest. Other anthropomorphic threats may be the introduction of invasive vegetation (thistle) which is altering the composition of its native habitat. Trampling, picking or digging up plants (100% of potential habitat) are also recognized threats while picking the flowers prevents seed formation. This plant is valuable to collectors and can be sold for a high price. It is known from the Pecos Wilderness and close surrounding areas which experience high recreational use. The isolated populations of this plant combined with its high recreational value places this species at-risk on the Santa Fe NF.

Heil's Alpine Whitlowgrass (*Draba heilii*) is a quite recently discovered small, high alpine yellow-flowered plant. Although its alpine/tundra habitat has changed little from reference condition it is threatened by trampling of hikers, climbers, horseback riders and occasional livestock (100% of potential habitat). It was found in an area near the Truchas Peaks along trails above timberline in the Pecos Wilderness. Identification and awareness of this plant is needed so it can be identified and impacts to it can be avoided or mitigated, in particular for trail maintenance projects. More information on the plant's locations and life history is needed but given its small isolated population it should be considered at-risk on the Santa Fe NF.

Pecos Fleabane (*Erigeron subglaber*) is a narrow endemic, as the range is even narrower than previously thought due to a misidentification on Wheeler Peak. The largest known population on Elk Mountain also has the highest known impacts (road, radio tower, in grazing allotment with high grazing impact recorded, and recreational ORV use). It is now known to be very narrowly endemic and subject to high risk of climate change in spruce fir habitats. A primary threat to the persistence of Pecos fleabane is the build up of coarse woody debris in the SFF. A catastrophic fire within this ERU could seriously reduce the distribution and number of specimens of this plant on the forest. Other anthropomorphic threats may be the introduction of invasive vegetation (thistle) which is altering the composition of its native habitat. The state botanist and Heritage program have recently reviewed its status, not yet reflected on the NM Rare Plant site, and given its imminent new ranking, falls within our guidance to maintain G1/T1 and G2/T2 ranks.

Wood Lily (*Lilium philadelphicum*) is State endangered plant associated with the Ponderosa Pine ERU which is in high departure from reference condition. At the plan scale only 3 percent of the SFNF PPF landscape is similar to reference conditions. Just over 70 percent of the landscape has moved into closed canopy states with 60 percent representation in the medium to large tree states and 11 percent in the small diameter tree state. Shifts in overstory structures towards closed canopies and limited disturbance (killing of overstory trees) has resulted in a significant departure with current patches 72 acres on average in size. Threats include large wildfires such as those that have affected the Jemez Mountains in the past 20 years (Lakes, Cerro Grande, Las Conchas, Dome and others). This plant was never abundant and no recent reports of its occurrence on the Santa Fe NF are known therefore the plant should be considered at-risk on the forest.

Chama Blazing Star (*Mentzelia conspicua*) occurs only in the Jemez Mountains known only from Chama Canyon (NW zone) on sedimentary soils within the canyon. It is usually found on the key ecosystem characteristic of gray to red shales of Mancos and Chinle soil formations in the Piñon-Juniper

Woodland ERU (NMRPTC 1999). Seral state departure is low in Pinyon-Juniper Woodland habitat, however, there is some departure in composition due to introduction of non-native species. Understory composition has been moderately impacted (36 percent departure) by invasive species such as bull thistle, Russian olive, salt cedar and Siberian elm. Similarity to site potential has also been influenced by drought and other disturbances that have reduced vegetative ground cover and increased the proportion of bare soil. Partial reductions in vegetative cover can be attributed to the substantial increases in CWD loadings. Other threats include habitat disturbance from recreation, sagebrush mowing and road construction and maintenance (14% potential habitat affected). With its isolated populations and unique habitat characteristics this plant should be considered at risk on Santa Fe NF.

Springer's Blazing Star (*Mentzelia springeri*) occurs only in the Jemez Mountains on pumice deposits. It was formerly known only from within Bandelier National Monument. Seral state departure is low in Pinyon-Juniper Woodland habitat, however, there is some departure in composition due to introduction of non-native species. Understory composition has been moderately impacted (36 percent departure) by invasive species such as bull thistle, Russian olive, salt cedar and Siberian elm. Similarity to site potential has also been influenced by drought and other disturbances that have reduced vegetative ground cover and increased the proportion of bare soil. Partial reductions in vegetative cover can be attributed to the substantial increases in CWD loadings. It was recently found in one location on the Santa Fe NF alongside a major road. Trampling or road maintenance can be a threat (100% of potential habitat). Pumice mines are now closed on the forest but were active for many years and undoubtedly affected habitat making this species at risk on the Santa Fe NF.

Arizona Willow (*Salix arizonica*) is found only in very high elevation areas in wet open meadows and stream banks in the Northwest (San Pedro Parks Wilderness) and Northeast (Pecos Wilderness) local zones. A primary threat to the persistence of Arizona willow is the build up of coarse woody debris in the SFF. A catastrophic fire within this ERU could seriously reduce the distribution and number of specimens of this plant on the forest. Other anthropomorphic threats may be the introduction of invasive vegetation (thistle) which is altering the composition of its native habitat. This plant is closely associated with riparian areas which are currently highly departed (e.g. site potential and proportion of bare soil are departed at 73 and 60 percent, respectively), while potential to return to reference conditions remains unknown. Livestock impact the growth and vigor of this willow (100% of potential habitat affected). Protection by small enclosures in the San Pedro Parks in the NW local zone resulted in a better condition for those plants but these enclosures have not been maintained or monitored for a few years. Monitoring of livestock grazing does not protect this species from preferred selection by livestock and elk. No protection measures or monitoring has occurred on the population in the Pecos Wilderness NE local zone placing this species at risk on the Santa Fe NF.

Species of Conservation Concern – Not Considered on Santa Fe NF

Information on the 20 species listed below indicates they are not known to exist on the Santa Fe NF or the best available scientific information indicates there is not substantial concern about the species' capability to persist over the long term in the plan area.

Justifications

Pale Townsend's Big-eared Bat (*Corynorhinus townsendii pallascens*) This species is not known to occur on the SFNF. Inadequate surveys of abandoned mines prior to closure; very sensitive to disturbance at roost sites, however, no known roost sites on the forest.

Yellow-bellied Marmot (*Marmota flaviventris*) inhabit rocky talus slopes that have not changed from historical reference condition and are not affected by any threats. (BISON-M 2014). Populations of yellow-bellied marmots are found in suitable habitat throughout ecological range on the Santa Fe NF. The Alpine and Tundra ERU of the Santa NF (<1% of the forest), is only found on the Northeast local zone with a high percentage protected by wilderness designation (Pecos). Alpine/tundra on the Santa Fe NF is very susceptible to climate change, and given its current limited extent and elevation constraints is likely to decline in western mountain systems generally (USDA FS 2010). However, this ERU is lowly departed from reference conditions on the Santa Fe NF, since rocky talus slopes have not changed from historical reference condition (BISON-M). Designated wilderness areas provide high quality and contiguous alpine tundra habitat and are less influenced by human and management activities. Other than climate change, there are few external threats impacting their populations and/or their habitat therefore their persistence on the forest is not considered at risk.

American Pika (*Salix arizonica*) inhabits rocky talus slopes that have not changed from historical reference condition and are not affected by any threats. (BISON-M 2014). Populations of American pikas are found in suitable habitat throughout ecological range on the Santa Fe NF. The Alpine and Tundra ERU of the Santa NF (<1% of the forest), is only found on the Northeast local zone with a high percentage protected by wilderness designation (Pecos). Alpine/tundra on the Santa Fe NF is very susceptible to climate change, and given its current limited extent and elevation constraints is likely to decline in western mountain systems generally (USDA FS 2010). However, this ERU is lowly departed from reference conditions on the Santa Fe NF, since rocky talus slopes have not changed from historical reference condition (BISON-M). Designated wilderness areas provide high quality and contiguous alpine tundra habitat and are less influenced by human and management activities. Other than climate change, there are few external threats impacting their populations and/or their habitat therefore their persistence on the forest is not considered at risk.

Goat Peak Pika (*Ochotona princeps saxatilis*) The core population of *Ochotona princeps saxatilis* resides on Valles Caldera National Park (VCNP). Only confirmed observations on Santa Fe NF occurred in 1985 and 1992 along the border of VCNP. Observations on the SFNF are considered accidental or transient. This species is not known to occur on the SFNF.

Rocky Mountain Bighorn Sheep (*Ovis Canadensis*) inhabit rocky talus slopes mostly associated with alpine/tundra but requires proximity to vegetation for foraging. There are two recognized populations of bighorn on the SFNF. The Pecos Wilderness herd was re-established in the Pecos Wilderness in the 1960's (Velasquez, et al., 1997) and according to NMDGF is stable or increasing. Animals from this herd have been used to stock other suitable areas within the state. The other herd associated with SFNF is located in the Jemez Mountains, southeast of the Valles Caldera. This population was re-introduced in 2014 and has hundreds of acres of new foraging habitat due to the Los Conchas fire in 2011. Long-term monitoring of this population has just begun. Overall populations of Rocky Mountain bighorn sheep appear stable or increasing. Bighorn sheep are considered a valuable game species by NMDGF and are hunted within SFNF (NMDGF Big Game Unit 45). There are currently no concerns with the status of Rocky Mountain bighorn sheep withing the SFNF.

Preble's Shrew (*Sorex preblei*) There have been two documented occurrences on Santa Fe NF (1998 and 1999). According to NatureServe the shrew inhabits a wide variety of habitats including Desert, Grassland/herbaceous, Shrubland/chaparral, Woodland - Conifer, Woodland – Hardwood but much is unknown about the species. Short and long-term trends are unknown, there are no known threats, and are not intrinsically vulnerable. Prebles shrew are predominantly found in the Pacific Northwest and an extant population was found in the Jemez mountains in the 1990s. Due to its numerous habitat

associations and scant observations there is not enough information to determine if this species is at-risk. There is a need for more pitfall trapping across west to determine status and range. Long-term and short-term population trends are currently unknown. There is insufficient information to determine whether or not there is risk for persistence on the forest.

Black Throated Gray Warbler (*Setophaga nigrescens*). According to the BBS there is no (significant) indication of population decline and occurrences on the forest are numerous (eBird 2014). Overall at the plan scale, PJO is in low departure; a result of it's long and slow scuccessional pattern. There is currently considerably more snags and CWD as a result of drought and Ips beetle outbreak that highly impacted pinon pine on the Forest. Similar to other woodland ERUs, limited seral structure change occurs in Pinyon-Juniper Woodland based on modeling. Small diameter-open canopy states experience a 23 percent reduction in proportion while the medium to large tree, open canopy state increase by 20 percent; additionally, the medium to large tree, closed canopy state increases by 12 percent. Overall seral state departure is reduced, and stays in the low-departure category. The pinyon juniper habitat they occupy is in low to moderate departure and should improve over the course of the next forest plan. They are found with frequency in appropriate habitat on the forest and are not considered at-risk given their NatureServe ranking (S3B/S4N).

Golden Eagle (*Aquila chrysaetos*) population trends appear stable in New Mexico and the species does not appear to be at risk given its NatureServe rankings (S3B,S4N) and wide range of habitat associations. The existence of snags is critical to Golden Eagle habitat, however, due to the eagle's varied habitat preferences, snags are not a limiting factor. The Santa Fe NF would comply with the Bald Eagle and Golden Eagle Protection Act (16 U.S.C. 668-668d) for any activity that could possibly affect eagles including activities of outside entities applied for under a Forest Service Special Use Permit. All activities must be evaluated for possible effects to eagles which include obtaining permits from Fish and Wildlife Service. Restrictions through the permit process would alleviate any concern for their continued persistence if a potential disturbance activity cannot be avoided.

Grace's Warbler (*Dendroica graciae*) A common species found frequently in appropriate habitats throughout the Santa Fe NF. This species should benefit from pine forest management that maintains pine stands, and possibly shrub (e.g. Gambel oak) understory, with similar structure and configuration to presettlement forests. Forest management on the Santa Fe NF should continue to provide adequate protections. Studies of response to silvicultural systems show the species is abundant in select-harvest units (Szaro and Balda 1979, Brawn and Balda 1988). They are found with frequency on the forest and are not considered at-risk given their NatureServe ranking (G4S3B,S4N). Although breeding bird survey results shows -2.8% declining trend (significant) in New Mexico from 1966-2012, they do not appear at-risk on the forest.

Bald Eagle (*Haliaeetus leucocephalus*) populations have rebounded considerably and the species does not appear to be at risk given its NatureServe rankings (G5,S1B,S4N). This species is not typically seen in or near the forest during breeding season since it is usually nests near large bodies of water. They are frequently seen along the Rio Grande during winter migration. Federal protections also afford this species additional protections from anthropogenic impacts. Bald eagle population are increasing or stable nationally. The Santa Fe NF would comply with the Bald Eagle and Golden Eagle Protection Act (16 U.S.C. 668-668d) for any activity that could possibly affect eagles including activities of outside entities applied for under a Forest Service Special Use Permit. All activities must be evaluated for possible effects to eagles which include obtaining permits from Fish and Wildlife Service. Restrictions through the permit process would alleviate any concern for their continued persistence if a potential disturbance activity cannot be avoided.

Bank Swallow (*Riparia riparia*) are dependant upon riverine systems that have steep dirt banks which are used to construct nesting burrows. The Rio Grande provides some of the only suitable areas for bank swallows and are found in abundance where this type of habitat exists. Since habitat is ephemeral, bank swallows are not expected to be full time residents within the forest. Large nesting range in North America and Eurasia; large population size; many occurrences; overall trend poorly known (BBS methods not well suited to this species therefore not tracked), but this species does not appear to warrant significant range-wide conservation concern at this time (NatureServe 2015). Although long-term and short-term trends are unknown their NatureServe ranking of G5S2B/S5N suggests the birds do not find much suitable breeding habitat on the Santa Fe NF.

Black Rosy-Finch (*Leucosticte australis*) During migration the black rosy-finch is associated with a wide range of habitats but it prefers barren, rocky or grassy areas and cliffs among glaciers or beyond timberline. This alpine/tundra region is not departed from reference conditions. Observations of the black rosy-finch are infrequent (two eBird observations on the NEZ) and little is known about their abundance and population status on the forest. Although the black rosy-finch may have a small range, it is not believed to approach the thresholds for vulnerable under the range size criterion (Extent of Occurrence <20,000 km² combined with a declining or fluctuating range size, habitat extent/quality, or population size and a small number of locations or severe fragmentation). The population trend appears to be stable, and hence the species does not approach the thresholds for vulnerable under the population trend criterion (>30% decline over ten years or three generations). Due to the lack of observations and information on the forest, it is unknown whether this species is at risk.

Brown-capped Rosy-Finch (*Leucosticte atrata*) Much like the black rosy-finch is associated with a wide range of habitats but it prefers barren, rocky or grassy areas and cliffs among glaciers or beyond timberline. This alpine/tundra region is not departed from reference conditions. Observations of the brown-capped rosy-finch are infrequent (three eBird observations, 1 on CZ and two on the NEZ) and little is known about their abundance and population status on the forest. According to IUCN Red List, although this species may have a small range, it is not believed to approach the thresholds for vulnerable under the range size criterion (Extent of Occurrence <20,000 km² combined with a declining or fluctuating range size, habitat extent/quality, or population size and a small number of locations or severe fragmentation). The population trend appears to be stable, and hence the species does not approach the thresholds for vulnerable under the population trend criterion (>30% decline over ten years or three generations). Due to the lack of observations and information on the forest, it is unknown whether this species is at risk.

Lincoln's Sparrow (*Melospiza lincolnii*) According to the BBS there is no (significant) indication of population decline and occurrences on the forest are numerous (eBird 2014). Their NatureServe ranking of G5S2B/S5N suggests the birds do not find much suitable breeding habitat on the Santa Fe NF. They are an edge species, frequently found on the forest but prefers wetter environments. Herbaceous riparian areas are evenly distributed across the forest and local zones where it is predominantly found occurring in all five of the local zones. In a frequent fire regime, adequate habitat should be created on a regular basis. Although some of its herbaceous riparian areas are currently highly departed the species does not appear to be at-risk due to its widespread abundance and annual detections (eBird). Management practices to improve riparian areas for NMMJM should benefit this species as well.

Loggerhead Shrike (*Lanius ludovicianus*) thrives in open grassland and is well adapted to agricultural uses of the landscape. They are found with frequency off the forest and should not be negatively impacted by current forest practices since they respond favorably to agricultural practices, often seeking fenceposts and other features in pasturelands. The pinyon juniper habitat they occupy on the forest is in

low to moderate departure and should improve over the course of the next forest plan. Although breeding bird survey results shows -3.7% declining trend (significant) in New Mexico from 2002-2012, they are found in abundance in appropriate habitat on and around the forest. Given their NatureServe ranking (S3B/S4N) they are not considered at-risk on the forest.

Osprey (*Pandion haliaetus*) live almost entirely on fish and are generally found near water at lower elevations (2800 - 5500 ft) (Hubbard 1978). Though osprey are frequently seen over the forest, there is a lack of suitable habitat for this species on the Santa Fe NF due to its dependence on large bodies of water to meet their piscivorous dietary needs. Observations of osprey on the forest are frequent (eBird) but can be considered transient, therefore, the species does not appear to be at-risk on the forest. Population trends for NM are holding stable (BISON-M 2015).

Gray Vireo (*Vireo vicinior*) This species thrives in arid juniper woodlands on foothills and mesas, these most often associated with oaks. Overall at the plan scale, PJO is in low departure; a result of it's long and slow successional pattern. There is currently considerably more snags and CWD as a result of drought and Ips beetle outbreak that highly impacted pinon pine on the Forest. Similar to other woodland ERUs, limited seral structure change occurs in Pinyon-Juniper Woodland based on modeling. Small diameter-open canopy states experience a 23 percent reduction in proportion while the medium to large tree, open canopy state increase by 20 percent; additionally, the medium to large tree, closed canopy state increases by 12 percent. Overall seral state departure is reduced, and stays in the low-departure category. The pinyon juniper habitat they occupy on the forest is in low to moderate departure and should improve over the course of the next forest plan. They are found with frequency off the forest where more suitable habitat exists and are not considered at-risk given their NatureServe ranking (G4S4B,S3N). Breeding bird survey results shows 5.6% increasing trend (significant) in New Mexico from 1966-2013.

Wilson's Warbler (*Wilsonia pusilla*) According to the BBS there is no (significant) indication of population decline and occurrences on the forest are numerous (eBird 2014). Their NatureServe ranking of G5S2B/S5N suggests the birds do not find much suitable breeding habitat on the Santa Fe NF. Wilson's warblers inhabit riparian areas at various elevations. Herbaceous riparian areas are evenly distributed across the forest and local zones where it is predominantly found occurring in all five of the local zones. In a frequent fire regime, adequate habitat should be created on a regular basis. Although some its herbaceous riparian areas are currently highly departed the species does not appear to be at-risk due to its widespread abundance and annual detections (eBird). Management practices to improve riparian areas for NMMJM should benefit this species as well.

Apache Beardtongue (*Penstemon oliganthus*) is not considered a rare plant on the Santa Fe NF with numerous specimens found over a wide area.

Robust Larkspur (*Delphinium robustum*) is not known to occur on the SFNF.

Additional At-Risk Species Requested by Public

The Santa Fe NF Draft Assessment was released in October 2015. Immediately following its release there was an open comment period that allowed the general public to provide input on the initial draft assessment. Numerous comments from individuals, NGOs, and other government agencies were and catalogued in the project record. The following reflects information gathered to address their inquiries.

Table 4. Species requested by the general public for inclusion in the species of conservation concern list.

Listing Category		Scientific Name	Common Name	NatureServe Rank	At-Risk Species Decision
		Mammals			
PUB	1	<i>Cervis canadensis</i>	Elk	G5 S3	No
		Birds			
PUB	2	<i>Asio flammeus</i>	Short-eared Owl	G5S2N	No
PUB	3	<i>Baeolophus ridgwayi</i>	Juniper Titmouse	G5S4B	No
PUB	4	<i>Buteo regalis</i>	Ferruginous Hawk	G4S2B,S4N	No
PUB	5	<i>Charadrius montanus</i>	Mountain Plover	G3S2B,S4N	No
PUB	6	<i>Coccyzus americanus</i>	Yellow-Billed Cuckoo	G5S3B,S3N	No
PUB	7	<i>Oreothlypis virginiae</i>	Virginia's Warbler	G5S3B,S4N	No
PUB	8	<i>Toxostoma bendirei</i>	Bendire's Thrasher	G4G5 S3B,S3N	No

 Excluded from planning phase

Species Requested by Public

It should be noted the public inquired about the following species: Canada lynx, American pika, Rocky Mountain bighorn sheep, New Mexico meadow jumping mouse, Jemez Mountains salamander, Western yellow-billed cuckoo, Southwestern willow flycatcher, Mexican spotted owl, Lincoln's sparrow, Gray vireo, Grace's warbler, Pecos fleabane, Chaco milkvetch, Gunnison's mariposa lily. The preceding species have been addressed in the federally listed and SCC sections and justifications for inclusion or exclusion has been provided.

Information on the eight (8) species listed below indicates they are not known to exist on the Sante Fe NF or the best available scientific information indicates there is not substantial concern about the species' capability to persist over the long term in the plan area.

Justifications

Elk (*Cervis canadensis*) This species is not known to be at-risk on the SFNF. Found throughout the SFNF in appropriate habitat. Elk are considered a valuable game species for New Mexico.

Short-eared Owl (*Asio flammeus*) This species is not known to occur on the SFNF. The closest eBird observation is 30+ miles outside of the forest, east of Las Vegas, NM (single observation).

Juniper Titmouse (*Baeolophus ridgwayi*) This species is not known to be at-risk on the SFNF. Found throughout the SFNF in appropriate habitat (eBird). This species was not considered as an SCC species due to its status in NatureServe (G5S4B).

Ferruginous Hawk (*Buteo regalis*) This species is not known to occur on the SFNF. Ferruginous hawks are regularly seen on the Kaibab NF, but no nesting pairs have been documented. It is currently unknown what the species current distribution or population status is on the forest, or how much suitable habitat is occupied. This species is only seen on SFNF during migration and are not a resident breeding bird.

Mountain Plover (*Charadrius montanus*) This species is not known to occur on the SFNF. The Mountain plover is a grassland species which breeds in the Great Plains, from Montana south to New Mexico and winters from central California and northern Mexico east to south Texas. Hubbard (1978) stated that in New Mexico, Mountain plovers summer in the eastern plains westward locally to the central-western region.

Yellow-Billed Cuckoo (*Coccyzus americanus*)

This species was not considered as an SCC species due to its status in NatureServe (S?). It is assumed this species was confused with Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*).

Virginia's Warbler (*Oreothlypis virginiae*) This species is not known to be at-risk on the SFNF. Found throughout the SFNF in appropriate habitat (eBird). This species was not considered as an SCC species due to its status in NatureServe (G5S3BS4N).

Bendire's Thrasher (*Toxostoma bendirei*) This species is not known to occur on the SFNF. There is a single unconfirmed observation from eBird. Staff biologists have not recorded this species on the forest although numerous bird surveys were conducted. Core population in western New Mexico and Arizona.

Summary of At-Risk Decisions

There are thirty-six (36) at-risk species on the Santa Fe NF, four (4) are federally listed threatened and/or endangered and thirty-two (32) are deemed species of conservation concern. (SCC). At-risk species decisions are based on best available scientific information. Unfortunately many species lack specific information on current population status making it difficult to determine risk. Another confounding issue is scale. Although some species information indicate decline on a large geographic scale (i.e. nationwide or statewide), forest-wide expertise does not suggest a similar determination. Should any new information become available the plan can be amended to accommodate the new information. The above information reflects the cumulative effort from numerous professionals from within the U.S. Forest Service as well as other partner organizations. We are deeply indebted for their cooperation throughout this endeavor and appreciate their willingness to share their knowledge and expertise.

* A spreadsheet (SFNF_At-Risk_Species_Justifications03232106) containing additional species information and literature cited is located in the Santa Fe National Forest Planning Record.