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Service

**Southwestern
Region**

Wildlife Specialist Report –

Migratory Birds, Eagles, and Important Bird Areas

Final Update November 2013

Forest Plan Revision

Final Environmental Impact Statement

Apache-Sitgreaves National Forests (ASNFs)

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Executive Summary

To comply with the National Forest Management Act, the Apache-Sitgreaves National Forests propose to revise the current land management plan (1987 forest plan). A final environmental impact statement (FEIS) has been prepared for four alternatives developed for the programmatic management of the 2.1 million acres administered by the Apache-Sitgreaves NFs. The FEIS contains the analysis of environmental consequences of those alternatives including the preferred alternative (Alternative B). The selected alternative would guide all natural resource management activities on the ASNFs for the next 10-15 years.

In support of the FEIS, four Wildlife Specialist Reports (WSR) have been prepared that address terrestrial and non-fish aquatic wildlife.* These reports cover the following areas: Species viability, management indicator species and other indicators; federally-listed Endangered Species Act species; Regional Forester-designated sensitive species; and this report covering Migratory birds, bald and golden eagles, and important bird areas.

For purposes of this report, a migratory bird is a "neotropical" migratory bird. A neotropical migrant is a bird that breeds in Canada and the United States during our summer, and spends our winter in Mexico, Central America, South America or the Caribbean Islands. A more strict definition for a neotropical migratory bird is a species in which the majority of individuals breed north of the Tropic of Cancer and winter south of there. So, strictly speaking, a bird species wintering no further south than a line bisecting Mexico approximately in half, west to east, would not be a neotropical migrant.

*Fish are addressed in the separate Fisheries Specialist Report.

Table of Contents

Specialist Report – Migratory Birds, Eagles, and Important Birding Areas

Introduction

This wildlife specialist report evaluates and discloses the potential environmental consequences to certain wildlife resources that may result with the adoption of a revised land management plan for the Apache-Sitgreaves National Forests (ASNFs). This and the other three wildlife specialist reports provide the means to compare and evaluate four plan alternatives which are: continuation of the current 1987 land management plan (1987 forest plan) or alternative A, and three other plan revision alternatives (B, C, and D). In these four specialist reports, "wildlife" is inclusive of all terrestrial and aquatic animal species (including invertebrates) and plants.

The purpose of this report is to determine potential effects on migratory bird species from management and authorized actions as a consequence of implementation of any of the four plan alternatives. It also evaluates plan direction in terms of eagle "take" addressed in the 2009 Eagle Act permitting rule. Given the programmatic nature of a forest plan and the scale of analysis, findings in this report are not a substitute for site specific analyses.

Relevant Laws, Regulations, and Background

Migratory Birds

Direction for management of migratory birds is contained within the 1918 Migratory Bird Treaty Act, the 2001 Executive Order 13186, and the 2008 memorandum of understanding (MOU) between USDA Forest Service (FS) and USDI Fish and Wildlife Service (FWS). The Act was the first to provide for protection of migratory birds including those species covered by international conventions with Mexico, Great Britain, Japan, and Russia.

In 2001, President Clinton signed Executive Order (EO) 13186 that recognized the importance of migratory birds and further identified measures to protect them. The order lists several responsibilities of federal agencies, among them:

> (1) support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions.

Additional direction comes from the 2008 MOU that was developed pursuant to EO 13186. The purpose of this MOU is to strengthen migratory bird conservation through enhanced collaboration between these two agencies, in coordination with state, tribal and local governments. The MOU identifies specific FS responsibilities for bird conservation including:

> Strive to protect, restore, enhance, and manage habitat of migratory birds, and prevent the further loss or degradation of remaining habitats on National Forest System (NFS) lands. This includes: a) Identifying management practices that impact

populations of high priority migratory bird species, including nesting, migration, or over-wintering habitats, on NFS lands, and developing management objectives or recommendations that avoid or minimize these impacts.

No specific FS policies have been developed to provide guidance on how to incorporate migratory birds into NEPA analyses. However, Southwestern Regional Office direction is to analyze effects in the following manner: (1) effects to Species of Concern listed by (the State's) Partners in Flight; (2) effects to Important Bird Areas (IBAs); and (3) effects to important over wintering areas on NFS lands, if present (none for the ASNFs).

Eagles

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), hereafter Eagle Act, was enacted in 1940 and has been amended several times since then. The Eagle Act protects eagles from actions and management that would disturb the species to the point of causing nest failure or reduce productivity[1]. It prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" eagles, including their parts, nests or eggs, and provides criminal penalties for violation. The Eagle Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

"Disturb" is defined by 50 CFR §22.3. It means: "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle; 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior." See Appendix A for other definitions.

In addition to immediate disturbance impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site even during a time when eagles are not present. Hence, disturbance has occurred if, upon an eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, or causes injury, death or nest abandonment.

The most recent, 2009, change to the Eagle Act addresses "take" of eagles[2]. The Final Rule for Take (Federal Register, 2009) makes it possible to obtain a permit for *limited, non-purposeful* take of bald eagles and golden eagles. Such a permit can authorize government agencies and others to disturb or otherwise take eagles in the course of conducting lawful activities. This may include instances where it is necessary to ensure public health and safety. Under the new Eagle Act take permitting rule, the Forest Service is responsible for obtaining permits for take that would result from its actions, including contractor and permittee work done through actions on behalf of or authorized by the agency. The Final Rule essentially sets up a consultation process when a project could result in take of eagles. Forest Service direction is found in the Washington office letter dated November 9, 2009 (Forest Service, 2009).

The National Bale Eagle Management Guidelines were developed by the US Fish and Wildlife Service (FWS) to provide land owners and agencies guidelines for following the provision of the Eagle Act (FWS, 2007). This document includes recommendations on how to avoid disturbance

[1] Excluding public entry from areas where there are nesting bald eagles is one means that the ASNFs is consistent with the Eagle Act.

[2] This "take" is somewhat similar in concept to take addressed under the 1976 Endangered Species Act, as amended.

to eagles and provides beneficial land practices. Guidelines are not regulatory but help provide for proactive conservation of bald eagles and their habitat.

The FS is a signatory to a Memorandum of Understanding (AZGFD 2006) along with Arizona Game and Fish Department and multiple land management agencies for the conservation of the bald eagle in Arizona (AZGFD 2006). This document includes a conservation assessment and strategy developed as a means to ensure the bald eagle remains delisted in Arizona. It describes the ongoing threats to eagles in the state and identifies management necessary to maintain their distribution and abundance post-ESA listing. As part of this MOU, the Forest Service continues participation in the 1) Southwestern Bald Eagle Management Committee, 2) bald eagle winter counts, 3) state eagle nestwatch program, 4) public education, and 5) other ongoing conservation activities and monitoring. The Forest Service also agrees to continue existing seasonal eagle nesting closures and implement others as necessary.

Important Bird Areas

Important birding areas or IBAs are a designation by the individual state's Audubon science committee, in conjunction with the National Audubon Society, as part of their local and global effort to identify and conserve areas that are vital to birds and other biodiversity especially with changing climate conditions.

IBAs are sites that provide essential habitat for one or more species of birds. IBAs range widely in size but include sites for breeding, wintering, and/or migrating birds. IBAs may include public or private lands, or both; however, there are no laws or regulations pertaining to IBAs and they confer no legal obligations on the land owner (federal or otherwise). During the IBA evaluation process, the status of sites are characterized by the following terms: *Potential, Nominated, Identified, Recognized, Pending, Rejected, Delisted, Merged.* Definitions of these terms along with criteria and standards for IBAs are found in Appendix B.

While there is no FS direction regarding IBAs, the Southwestern Region encourages addressing IBAs while addressing migratory birds during NEPA analyses.

Methodology and Selection Process

Neotropical migrants are those species that breed in Canada and the United States during our summer and spend our winter in Mexico, Central America, South America or the Caribbean Islands, generally south of the Tropic of Cancer (bisects Mexico approximately in half, west to east).

Neotropical migratory birds[3] that may occur on the ASNFs and which may be affected by forest management and activities are analyzed in this report. Two documents helped inform the selection of birds for this purpose: Birds of Conservation Concern or BCC, specifically Regions 16 and 34 (FWS 2008), and Arizona Partners in Flight Bird Conservation Plan or PIF (Latta et al.1999) which contains a list of priority species of concern. Because the ASNFs are bounded on the east by New Mexico, this state's Partners in Flight Bird Conservation Plan (Rustay and Norris 2007) were also consulted. FS bird surveys, local birders, The Nature Conservancy, and White Mountain Audubon Chapter were additional sources of information. Not every neotropical

[3] Hereafter "migratory birds."

migrant using the same type of habitat is evaluated, but at least one species in each type, as an indication of possible consequences, is analyzed.

Roughly half of the avian forest planning species (FPS) listed in the Wildlife Specialist Report – Viability are migratory birds. Because they are analyzed in that report they are not reanalyzed here. This report analyzes an additional 13 migratory birds not analyzed as FPS in the following affected environment section. Migratory bird species not analyzed are listed in Appendix C with rationale why not included.

IBAs are described and discussed relative to migratory and other important birds that utilize them. Both bald and golden eagles occur on the ASNFs. They are discussed in terms of the considerations required by the Eagle Act relative to "take."

Assumptions and Alternatives

The description of plan alternatives is found in the Wildlife Specialist Report – Viability. Assumptions relevant to wildlife analyses for forest plan revision are also found in that report.

Description of Affected Environment (Existing Condition)

Migratory Birds

Table 1 lists migratory birds discussed in this report. It shows the habitat, i.e., the potential natural vegetation type (PNVT) the species is associated with, and where they may be found when on the ASNFs. A brief description of each species, its needs, and local ASNFs impacts or threats to each follows.

Table 1. Representative migratory birds considered for ASNFs plan revision

Migratory bird		PNVT habitat
Golden-crowned kinglet [1]	*Regulis satrapa*	Spruce-fir
Three-toed woodpecker [1]	*Picoides tridactylus*	Spruce-fir
Olive-side flycatcher [1]	*Contopus borealis*	Mixed conifer (dry and wet)
Purple martin [2]	*Progne subis*	Ponderosa pine
Grace's warbler [1]	*Dendroica graciae*	Ponderosa pine
Flammulated owl [1]	*Otus flammeolus*	Ponderosa pine with Gambel oak
Pinyon jay [1, 2]	*Gymnorhinus cyanocephalus*	Piñon-juniper woodland
Black-throated gray warbler [1, 2]	*Dendroica nigrescens*	Piñon-juniper woodland
Virginia's warbler [2]	*Vermivora virginiae*	Chaparral
Gray flycatcher [2]	*Empidonax wrightii*	Great Basin and Semi-desert grasslands
Savannah sparrow	*Passerculus sandwichensis*	Montane/subalpine Grasslands
MacGillivray's warbler [2]	*Oporornis tolmiei*	Montane willow riparian forest
Yellow-breasted chat	*Icteria virens*	Mixed broadleaf deciduous riparian forest
Source of species information: [1] = Birds of Conservation Concern; [2] = Arizona Partners in Flight		

Spruce-fir

Golden-crowned kinglet. Golden-crown kinglets are found at edges of clearings in mature spruce-fir forests with closed canopies. Barely larger than a hummingbird, they are constantly in motion, gleaning insects and insect eggs from tips of branches and from bark. The ASNFs provides approximately 17,667 acres of spruce-fir PNVT habitat. Loss of or too open canopies would reduce habitat for this species and could impact this species where present on the ASNFs.

Golden-crowned kinglet, photo© by Nick Saunders, used with permission

Three-toed woodpecker. This woodpecker is normally found in spruce-fir forests using conifer snags for feeding, nesting, roosting, and perching. Three-toed woodpeckers will also use ponderosa pine after fire or disease when high populations of bark beetles and other boring insects are present. There are about 17,667 acres of this PNVT on the ASNFs. Substantial snag removal or lack of replacement snags would reduce habitat for this species and could impact this species where present on the ASNFs. The 2011 Wallow Fire has temporarily increased snag and associated insect habitat for this species.

Mixed conifer

Olive-sided flycatcher. This species is more common in partially open areas within closed canopy mixed conifer, often near moist areas or waters. Olive-sided flycatchers prefer forests with tall trees and snags where it perches and forages from the upper canopy. The ASNFs provides approximately 147,885 acres of dry mixed conifer PNVT habitat and 177,995 acres of wet mixed conifer PNVT habitat. Loss of or too open canopies would reduce habitat for this species and could impact this species where present on the ASNFs.

Ponderosa pine

Purple martin. This species uses snags and large old trees for nesting that are adjacent to more open pine canopies, preferably near water. Purple martins take flying insects on the wing. There are approximately 602,206 acres of ponderosa pine PNVT habitat on the ASNFs. Past management of large tree removal and fire suppression resulting in loss of this habitat component, concurrent with denser and smaller trees across ponderosa pine may have affected this species. Substantial snag and/or large tree removal without replacements would reduce habitat for this species and could impact this species where present on the ASNFs. The 2011 Wallow Fire has temporarily increased habitat for this species.

Grace's warbler. This warbler is commonly found in ponderosa pine and prefers more open pine canopy conditions. Grace's warblers seem to favor areas where Gambel oak is also present. About one-third of the ponderosa pine PNVT acreage (roughly 200,000 acres) contains a strong component of Gambel oak. Loss of Gambel oak through damage or fuelwood harvest, or by ungulate browsing would reduce habitat for this species and could impact this species where present on the ASNFs. While most Gambel oak resprouts after fire, browsing by domestic and wild ungulates (primarily elk) keeps resprouts hedged and keeps them from developing into tree size.

Flammulated owl.[4] This owl is an obligate old growth primarily ponderosa pine species nesting in cavities of large snags or live trees. Flammulated owls are found in areas of pine with a Gambel oak component (sometimes also in mixed conifer). Past management of large tree removal has likely affected this species. Loss of snags and dense upper canopy cover could reduce habitat for this species and could impact this species where present on the ASNFs which occurred with the 2011 Wallow Fire. Disturbance during nesting can also impact fledging success.

Piñon-juniper woodland

Pinyon jay. These highly social birds maintain year-round flocks. Colonial breeding sites are tied to food availability. Piñon pine seeds are a primary source of food that are also cached for future use. More vigorous, open-grown trees may be better seed produces. However, seed production of trees in this woodland is cyclic with good seed crops produced only every several years. The ASNFs provides approximately 222,166 acres of piñon-juniper woodland PNVT habitat. Uncharacteristic densities in this woodland has likely reduced growth rates for larger, better seed producing trees. Drought (heat or moisture) stress can result in loss of mature piñon and alligator juniper trees which would reduce an important food component for this species and could impact this species where present on the ASNFs.

Black-throated gray warbler. This species is common in this piñon-juniper woodland type. Black-throated warblers have a preference for stands with dense, mature piñon pine. They are mid-canopy forage gleaners. Drought (heat or moisture) stress resulting in loss of large, trees would reduce an important habitat component for this species and could impact this species where present on the ASNFs.

Chaparral

Virginia's warbler. This species nests in dense brush, often on hillslopes. The ASNFs provides approximately 55,981 acres of chaparral PNVT habitat. While chaparral plants quickly recolonize sites post burn (within 4-5 years), *widespread* fire would reduce habitat for this species and could impact this species where present on the ASNFs.

Grasslands

Gray flycatcher. This flycatcher is found in Great Basin and Semi-desert grassland PNVTs where they nest in scattered shrub or low tree cover. Vegetation ground cover to support insect populations for gray flycatcher foraging is needed. The ASNFs provides approximately 185,523 acres of Great Basin grassland PNVT habitat and 106,952 acres of Semi-desert grassland PNVT

[4] Included as a migratory species because most researchers believe that flammulated owls from the northern forests migrate to the highlands of Mexico and down through Central America for the winter, although data is limited.

habitat. Livestock grazing at levels that impact shrub cover or do not account for herbaceous plant needs and recovery have impacted habitat for this species on the ASNFs.

Savannah sparrow. This secretive species is found in the higher elevations of the Montane/Subalpine grasslands. Vegetation ground cover to support insect populations for savannah sparrow foraging is needed. The ASNFs provides approximately 51,559 acres of this grassland PNVT habitat. Livestock grazing at levels that do not provide fairly dense herbaceous cover or grazing that does not account for plant needs and recovery (or provision of ungrazed areas) have impacted habitat for this species on the ASNFs.

Montane willow riparian forests

MacGillivray's warbler. This warbler is found in dense undergrowth along streams in riparian areas with tree or forested canopies. Thickets of willow and alder are used for nesting. MacGillivray's warblers forage for insects in ground litter or among low branches. Practices that open up streamside vegetation are detrimental to their nesting and foraging substrate. The ASNFs provides approximately 4,808 acres of habitat within the Montane willow riparian forest PNVT. Both domestic and wild ungulate browsing and trampling have impacted the size and recruitment of the willow component of habitat needed by this species.

MacGillivray's warbler by David Hofmann, (permission pending)

Mixed broadleaf deciduous riparian forests

Yellow-breasted chat. This species nests in dense thickets of woody riparian vegetation with some taller trees, like cottonwoods which are required for song perches. Yellow-breasted chats consume insects and berries. The ASNFs provides approximately 9,657 acres of this riparian PNVT habitat. They are susceptible to practices that impact (open up) dense riparian vegetation such as grazing and browsing which increases the threat of cowbird nest parasitism.

Eagles

Two species of eagles are found on the ASNFs. The bald eagle was delisted from threatened status across the State in 2010. Both the bald eagle and golden eagle continue to be Regional Forester sensitive species and are addressed in the Wildlife Specialist Report – Biological Evaluation. They are additionally analyzed in this report because of the requirements associated with the Eagle Act. A description of both species, their needs, and local ASNFs impacts or threats to them follows.

Golden eagle

There are few studies of this species in Arizona. There have been a few reports of golden eagle nests on or near the ASNFs, one on cliff ledges above a riparian area. However, golden eagles are most commonly seen here during the fall, winter and spring seasons feeding on carrion. While they are seen sparingly, they are likely as common on the ASNFs as elsewhere in the state and in the West (Corman and Wise-Gervais 2005). They feed on small mammals, juvenile ungulates, birds, and snakes.

The attraction of this eagle and the bald eagle to road kill makes both species vulnerable to collisions with vehicles. Like other raptors and large birds, power line electrocution of golden and bald eagles can occasionally occur. Golden eagles, like bald eagles, are susceptible to human-related disturbances during breeding and young rearing periods which spans the January through mid-August period, accounting for both species of eagles.

Bald eagle

Single and small groups of bald eagles are found on the forests during the fall through spring. They are seen foraging at reservoirs and larger rivers for fish and waterfowl. They also forage on hunter-loss game and road kills along highways. There are two long-term nesting pairs of bald eagles; these are located at Luna Lake and Crescent Lakes. In addition, bald eagle nesting has occurred sporadically on the ASNFs at a number of locations (vicinity of Woods Canyon Lake, Greer Lakes, Show Low Lake) but none of these nesting attempts have been consistently successful.

The Luna Lake bald eagle pair took over a great blue heron nest tree in 1993. They remain in the large ponderosa pine tree near the lake at 7,900 feet in elevation. The male was captured and found wearing a band from Texas where he was born in 1988. The female carried no birth tag but both now have an Arizona state band and a federal band. Young from the nest are banded each year by AZGFD. These were the only nesting bald eagles in the mountains of eastern Arizona until 2003.

AZGFD photo

In 2003 a pair of nesting eagles was discovered at Crescent Lake nesting in a very large Douglas fir on Crescent Knoll at about 9,200 feet. The male of this pair was found to be wearing bands that indicated he was born at Luna Lake in 1997. The female appears to have no bands. In 2008, a pair of bald eagles nested at Woods Canyon Lake in an old osprey nest. It is unknown if either of these eagles has bands. In 2013, two eaglets were successfully fledged at Woods Canyon Lake.

In 2009 an eagle pair attempted nesting at River Reservoir. They left unsuccessful due to the heavy recreation at this site; in 2013, they again attempted but failed to nest. In 2012, a pair of bald eagles was found nesting along the Little Colorado River below the Greer reservoirs and a pair was found at Show Low Lake; both nesting attempts were unsuccessful. In 2013, two eaglets were successfully fledged at Show Low Lake.

Nesting at the high elevations on the ASNFs is difficult due to snow and cold weather that can cause reservoirs and even rivers to freeze over weeks at a time. As such, the Crescent Lake pair has only produced 6 young in 10 years and the Woods Canyon pair has produced six young in 4 of 5 years. In total, 24 eaglets have been fledged by the Luna Lake pair in 20 years.

A major impact to nesting bald eagles on the ASNFs is nearby heavy recreational use. All nest sites are at or near developed fishing and boating or camping areas. Because eagles are especially sensitive to disturbance from people and activities and in order to limit disturbance, the ASNFs places a special order closure around all bald eagle nests during the breeding season (starting as early as January and ending as late as August, depending on site).

Besides closures, another factor in the success of the Luna Lake eagles has been a long term partnership of the ASNFs with the Arizona Bald Eagle Nestwatch Program and the FS Regional participation in the Southwestern Bald Eagle Management Committee. This program provides paid contractors to watch bald eagle nests during the breeding season. The ASNFs has contributed support, materials, and sometimes housing to the program for the Luna Lake nestwatchers. Nestwatcher vigilance and actions have helped with eaglet fledgling success in the White Mountains of Arizona which have contributed substantially to the delisting of this species.[5]

Important Bird Areas

National Audubon Society's Important Bird Area (IBA) program helps birds by encouraging research, conducting education, and setting science-based priorities for habitat. The IBA program offers opportunities to engage volunteers and stakeholders in monitoring and conservation projects at IBAs, thereby promoting local stewardship and advocacy. The Audubon IBA program contributes to the North American Bird Conservation Initiative by identifying the most important sites to work toward ensuring bird conservation in important habitats. Three IBAs are located in whole or in part on the ASNFs. IBAs impose neither management requirement nor legal obligation on NFS or other lands. Information on the following IBAs was taken from Audubon (2012).

Upper Little Colorado River IBA

This important bird area encompasses 44,086 acres on the ASNFs. There is an additional 17,274 acres off forest which includes two AZGFD wildlife properties acquired for wildlife habitat and public recreation opportunities. These are the 391-acre Becker Lake wildlife area and the 355-acre Weinema wildlife area, both at about 6,800 feet. This IBA includes approximately 27 miles of the Little Colorado River starting from its headwaters on Mount Baldy at about 11,400 feet. The ASNFs portion encompasses part of the main stem Little Colorado River as well as all its tributaries (west, east, and south). It also contains the following perennial streams: Hall Creek,

[5] Nestwatchers have been employed regularly at Luna Lake up until 2010 after which short-term nest watching has occurred, depending on funding. Nestwatchers have been at Crescent Lake in the years when nesting was successful, 2007, 2009, 2011, 2012, and 2013.

Benny Creek, Rosey Creek, and Butler Canyon, along with five reservoirs: Lee Valley, White Mountain, River, Tunnel, and Bunch. About 6,806 acres of the Mount Baldy Wilderness is within this IBA.

The Upper Little Colorado River IBA was "identified" in 2004 and "recognized" by the state Audubon science committee in 2008. Its criteria are global based on the number of birds of a particular species at a site, in a season, and in a year. At the State level it is known for harboring species of conservation concern and species in rare/unique riparian habitats. The West, East, and South Forks' riparian corridors contain a substantial amount of intact, diverse, high elevation habitat. It supports a diversity of breeding species, many of which nest only in the high elevations.

This IBA is important nesting habitat for the endangered Southwestern willow flycatcher and includes most of the species' high elevation nest sites documented in the State. The upper watershed includes all or parts of seven Mexican spotted owl protected activity (breeding) centers, three northern goshawk post-fledging (breeding) areas, and one American peregrine falcon eyrie (breeding) area.[6] The lower stretch of the river within the IBA holds the majority of known gray catbird breeding sites in the State, and at least one yellow-billed cuckoo territory. The riparian corridors also support a diversity of migratory birds that includes large numbers of the McGillivray's warblers and some gray catbirds. Wintering bald eagles are present on the lakes and, at times, in substantial numbers.

Blue and San Francisco Rivers IBA

This important bird area encompasses 108,576 acres on the ASNFs. There are an additional 1,272 acres along the San Francisco River on Bureau of Land Management (BLM) lands adjacent to (south of) the ASNFs. It encompasses approximately 40 miles of the Blue River, 10 miles of the tributary Campbell Blue River, 5 miles of the tributary KP Creek, and over 20 miles of the San Francisco River on the ASNFs. It ranges from near 9,000 feet in elevation near Alpine, AZ to about 3,300 feet near Clifton, AZ. This IBA encompasses approximately 35,700 acres of the Blue Range Primitive.

Federal land only in the Blue and San Francisco Rivers IBA was "identified" by the state Audubon science committee in 2004 which is its current status. Its criteria are global potential and at the State level it is known for harboring species of conservation concern and species in rare/unique riparian habitats. It is also an important river system for native fish and other aquatic species such as the endangered loach minnow and threatened Chiricahua leopard frog. The Blue River is also in the heart of the Mexican wolf recovery area and was the focus of Aldo Leopold's observations and forward thinking about the function of watersheds (Leopold 1922).

As of 2004, surveys have documented 216 bird species of which 138 are likely breeding. This IBA contains all or parts of thirteen Mexican spotted owl protected activity centers, two northern goshawk post-fledging areas, and three nearby American peregrine falcon eyrie breeding areas. The area is also important nesting habitat for other migratory and non-migratory species like the purple martin, juniper titmouse, yellow-breasted chat, common black-hawk, and various flycatchers. Wintering bald eagles are sometimes seen along these rivers when higher elevation reservoirs and rivers are frozen.

[6] Breeding area information for the owl, goshawk, and peregrine are found in Appendix D for all three IBAs.

Mogollon Rim Snowmelt Draws IBA

This important bird area encompasses 29,426 acres on the ASNFs. It extends westward onto the Coconino National Forest encompassing 42,376 acres there. Its southern boundary is near the Mogollon Rim, an escarpment defining the southwestern edge of the Colorado Plateau that extends across most of Arizona. Snowmelt Canyons and its tributaries (all on the Coconino National Forest) flow north away from the rim. It also encompasses the headwaters of northern flowing Leonard Canyon and its tributary, Willow Creek, on the ASNFs side of the IBA. Even though elevations along its southern boundary range between about 7,500 and 8,000 feet, higher precipitation levels occur here than elsewhere at comparable elevations due to the upward deflection of air at the Rim face. The General Crook Trail, a historic wagon route, crosses through the IBA along and near to the Rim.
Federal land in the Mogollon Rim Snowmelt Draws IBA was "identified" by the state Audubon science committee in 2010 which is its current status. Its global and State criteria are being analyzed at this time. Because of its unique moisture patterns, vegetation communities are more representative of higher elevation vegetation types, such as the wet mixed conifer PNVT with associated species of birds including olive-side flycatchers and red-faced warblers. This IBA contains all or parts of eight Mexican spotted owl protected activity centers, six northern goshawk post-fledging areas, and one nearby American peregrine falcon eyrie breeding area. For over 25 years, a study of birds and changing climate has been conducted in the area of this IBA (Martin and Maron 2012).

Habitat provided by PNVTs within IBAs is shown in Table 2. Acreage figures are drawn from information provided to the ASNFs by the Arizona Audubon Society (Supplee 2012).

Table 2. PNVT habitat and acreage for three IBAs on the ASNFS

Upper Little Colorado River Important Birding Area		
PNVT	Acreage	Comment
Spruce-fir forest	5,624	
Wet mixed conifer forest	9,698	
Dry mixed conifer forest	7,981	
Ponderosa pine forest	8,539	
Piñon-juniper woodland	718	
Montane willow riparian forest	514	
Wetland/Cienega riparian area	2,479	
Montane/Subalpine grassland	6,138	
Water body (reservoirs)	657	
ULCR IBA acreage on ASNFs:	44,086	all on Springerville RD
ULCR IBA acreage off forest:	17,274	
Total ULCR IBA acreage:	61,360	
Blue and San Francisco Rivers Important Birding Area		
PNVT	Acreage	Comment
Spruce-fir forest	942	
Wet mixed conifer forest	3,086	
Dry mixed conifer forest	3,052	
Ponderosa pine forest	9,622	
Piñon-juniper woodland	1,022	
Madrean pine-oak woodland	56,155	
Montane willow riparian forest	195	
Cottonwood-willow riparian forest	1,659	

Mixed broadleaf riparian forest	4,219	
Wetland/Cienega riparian area	361	
Montane/Subalpine grassland	258	
Semi-desert grassland	25,274	
Interior chaparral	1,059	
BSFR IBA acreage on on ASNFs:	108,576 *	57,725 acres on Alpine RD 50,851 acres on Clifton RD
Off forest - BLM	1,272	
Total BSFR IBA acreage:	109,848	
Mogollon Rim Snowmelt Draws Important Birding Area		
PNVT	Acreage	Comment
Wet mixed conifer forest	13,214	
Dry mixed conifer forest	4,068	
Ponderosa pine forest	11,483	
Montane willow riparian forest	454	
Cottonwood-willow riparian forest	119	
Water body (reservoirs)	87	
MRSD IBA acreage on ASNFs:	29,426 *	all on Black Mesa RD
Coconino National Forest	42,376	
Total MRSD IBA acreage:	71,802	
* There are 1,671 acres of private land within the Blue and San Francisco Rivers IBA and 360 acres of private land within the Mogollon Rim Snowmelt Draws IBA that are not part of these IBAs nor included in acreage figures above.		

Environmental Consequences

Migratory Birds and IBAs

Sections of the plan that contain components addressing forest management and activities that affect migratory birds and their habitat (including IBAs) are shown in Table 3.

Table 3. Plan components addressing migratory birds and their habitat

Desired Conditions	Standards	Guidelines
All PNVTs Riparian Areas All Forested PNVTs Piñon-Juniper	None	Ponderosa Pine Dry Mixed Conifer All Woodland PNVTs

Alternatives compared: Migratory birds are not specifically addressed in the 1987 plan (alternative A). However, **all four alternatives** help restore and enhance migratory bird habitat. Examples of plan components that benefit migratory birds include[7]:

- Desired riparian conditions include vegetation that is structurally diverse and provide for high bird species densities, especially neotropical migratory birds.
- Each forested type has desired conditions for needed number of snags.

[7] See the Final Land Management Plan for minor adjustments in plan components noted here and elsewhere in this report.

- Vegetation states with denser canopies are included in desired conditions for forested PNVTs.
- Retention of Gambel oak is addressed in a guideline.
- Groups of medium to large and old trees in the piñon-juniper woodlands are retained.
- Herbaceous and shrub ground cover ranges from 10 to 31 inches in height depending on PNVT.
- Modifications, mitigations, or other measures should be incorporated to reduce negative impacts to plants, animals, and their habitats and to help provide for species needs, consistent with project or activity objective.
- In addition, the plan's management approach for wildlife for all alternatives is to encourage and support species research and inventory.

Appendix E contains more detail on how individual species' needs are met by various plan components, including those that address impacts or threats to the species. These plan components and management approaches contribute to the needs of migratory and other birds regardless of alternative; therefore, **all alternatives** would contribute to conservation of migratory birds.

In addition, the ASNFs would continue to fulfill obligations under the 2008 MOU regarding conservation of migratory birds, **under all alternatives**. The ASNFs would also support programs like the National Audubon Society's IBA and provide wildlife education for the public at events like county fairs (see the Conservation Education portion of the plan).

Bald and Golden Eagles

Sections of the plan that contain components addressing forest management and activities that affect both species of eagles and their habitat are shown in Table 4.

Table 4. Plan components addressing eagles and their habitat

Desired Conditions	Standards	Guidelines
All PNVTs Riparian Areas All Forested PNVTs Piñon-Juniper	None	Ponderosa Pine Dry Mixed Conifer All Woodland PNVTs

Appendix E contains more detail on how individual species' needs are met by various plan components, including plan components that address impacts or threats to both eagles.

Alternatives compared: Direction under the 1987 plan (alternative A) includes identification and protection of winter bald eagle roosts; no development, including roads, in bald eagle winter roost areas; protection of bald eagle winter roosts with a 300-foot uncut buffer zone; and priority management of old growth stands adjacent to lakes and streams in potential bald eagle wintering sites. Golden eagles are not addressed except as under protection of raptor nest areas.

The programmatic plan direction in both the current and proposed land management plan would not constitute "take" and additional direction would provide for the needs of bald and golden eagles including their habitat. As such, **all alternatives** would be consistent with the Eagle

Protection Act. However, unforeseen site-specific implementation of plan objectives, such as construction or maintenance of recreation developments, could possibly impact eagles. This would be addressed on a site-specific basis with appropriate permitting from the FWS, if necessary, regardless of plan alternative. In addition, as a signatory to the 2006 MOU (AZGFD 2006) along with AZGFD and other agencies, the Forest Service would continue to support eagle management and actions (e.g., eagle nesting area closures) to ensure the bald eagle remains delisted in Arizona.

Cumulative Environment Consequences

Unavoidable Adverse Impacts

Irreversible and Irretrievable Commitment of Resources

Adaptive Management

See the same titled sections in the Wildlife Specialist Report–Viability for discussion of these topics.

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Appendix A. Eagle Act Definitions (Federal Register 2009 Vol. 74, No. 175)

Eagle means a live bald eagle (*Haliaeetus leucocephalus*), live golden eagle (*Aquila chrysaetos*), a bald eagle egg, or a golden eagle egg.

Eagle nest means any readily identifiable structure built, maintained, or used by bald eagles or golden eagles for the purpose of reproduction sheltering eagles.

Inactive nest means a bald eagle or golden eagle nest that is not currently being used by eagles as determined by the continuing absence of any adult, egg, or dependent young at the nest for at least ten consecutive days immediately prior to, and including, at present. An inactive nest may become active again and remains protected under the Eagle Act.

Criminal penalties apply to persons who take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any golden or bald eagle, alive or dead, or any part, nest, or egg thereof.

Appendix B. IBA Criteria, Standards and Definitions (Audubon 2012)

Criteria for determining important birding areas are divided into four categories based on vulnerability and/or responsibility. By definition, IBAs are sites that support:

1. Species of conservation concern (e.g. threatened and endangered species).
2. Range-restricted species (species vulnerable because they are not widely distributed).
3. Species that are vulnerable because their populations are concentrated in one general habitat type
   or biome.
4. Species, or groups of similar species (such as waterfowl or shorebirds), that are vulnerable because
   they occur at high densities due to their congregatory behavior.

Criteria - general standards:

- The basic data needed to support the nomination of an IBA at the continental or global level is a reliable estimate of the number of birds of a particular species at a site, in a season, in a year.
- It is important to have species-specific count data in virtually all cases (with the exception of criterion A4iii). Moreover, for conservation planning purposes we need to know the seasonal importance of a site rather than just the count of birds in a given year.
- The conservation value of a site may change significantly over time due to changes in land use, pollution, or landscape-level changes that occur as a consequence of sprawl, for example. Therefore, we intend to monitor the continued value of each IBA to birds on a periodic basis (e.g. every five years) to determine if it continues to qualify as an IBA. For this reason it is important to report the counts of birds in a particular year rather than as an average over a number of years. Moreover, it is important that the identification of an IBA be based on relatively current data:
- In order to qualify as an IBA at the global or continental level, the data in a site nomination must be no more than 10 years old (or 15 years old in the case of Alaska, where site access is often particularly difficult and/or expensive).

Status refers to the current status of the site while under evaluation as an IBA. There are 7 categories as follows.

1. *Potential* - a site that may meet IBA criteria (*i.e.*, on a list of sites that may meet IBA criteria; in addition to site name a proposed site would also have geographic coordinates (latitudes/longitudes), and key species that might trigger criteria associated with it). A list of potential sites is one of the first things an IBA Coordinator puts together when beginning the process of identifying sites at the state level.
2. *Nominated* - a site for which a nomination form has been completed (*i.e.*, bird population, landuse, threats, and other site information has been compiled). Once state-level criteria are established, the state technical committee members are encouraged to work with the IBA Coordinator to see that a nomination form is completed for sites that are most likely to meet IBA criteria. Nomination forms are completed by the IBA Coordinator, members of the

IBA technical committee, the land manager(s) or owner(s), or some other interested individual(s).

3. *Identified* - a site that has been reviewed by a state or national technical committee and has been recognized as meeting IBA criteria at the state, continental or global level(s). Sites are identified based on the occurrence of birds at a site and therefore their value to birds and bird conservation. Bird population data is evaluated against criteria. Land ownership, threat status, or other potential politically motivating factors should not be the primary consideration at this stage. Sites should be evaluated based on the number of individuals of particular species occurring at the site and whether those numbers meet the defined criteria. Additionally, habitat quality and the stability of that habitat may also be a factor, in conjunction with criteria, for identifying an IBA.
4. *Recognized* – a site that has been formally designated as an IBA. Recognition of an IBA could occur through a public ceremony, press release, or some other mechanism that makes it widely known that this site is part of a global network of places identified for their outstanding value to bird conservation. In many cases, recognition may mean that a landowner has been notified and has approved of the fact that the property has been identified as an IBA; however, recognition does not require landowner approval.
5. *Pending* - a site that has been nominated and evaluated by a technical committee but is in need of additional information (*i.e.*, more bird population data, additional habitat, threat, land use data, etc.) before it can be adequately evaluated against IBA criteria.
6. *Rejected* - a site that may have been proposed or nominated but was ultimately determined through a technical committee review process to not meet IBA criteria. This site could be nominated again if new information is obtained.
7. *Delisted* – a site that was previously identified or recognized as an IBA but has been removed from one or both of those lists because of degradation to the site, change in bird populations, or some other reason that becomes clear through new information.

Appendix C. Migratory birds not addressed and rationale

Table C. Migratory birds: those not covered in this report with rationale for why not doing so

Neotropical migrant *		PNVT or habitat	Why not included
Olive warbler [2]	*Peucedramus taeniatus*	Ponderosa with oak	Another species in this habitat used, flammulated owl
Cordilleran flycatcher [1]	*Empidonax occidentalis*	Montane willow riparian forest	Another species in this habitat used, MacGillivray's warbler
Lewis' woodpecker [1]	*Melanerpes lewis*	Many	Not PNVT specific and not true neotropical migrant
Swainson's hawk [2]	*Buteo swainsoni*	Grasslands	Outside of ASNFs
Yellow warbler [1]	*Dendroica petechia*	Montane willow riparian forest	Just outside of ASNFs
Evening grosbeak	*Coccothraustes vespertinus*		Migration only occurs when food supply shortages
Gray vireo [1, 2]	*Vireo vicinior*	Chaparral	Not true neotropical migrant
Gray catbird	*Dumetella carolinensi*	Dense low shrubs	Western populations not migratory**
Swainson's thrush [2]	*Catharus ustulatus*	Many	Not PNVT specific
Peregrine falcon [1]	*Falco peregrinus*	Cliffs, riparian areas	The status of local peregrines as migrants is unknown (T. Corman, AZGFD 2012) **

Source of species information: [1] = Birds of Conservation Concern; [2] = Arizona Partners in Flight

** This species is a Regional Forester sensitive species so is analyzed in the Wildlife Specialist Report – Biological Evaluation.

Appendix D. Some breeding birds within Important Bird Areas (IBAs) on the ASNFs

Following is bird breeding information evaluated by the Audubon science committee in consideration of three IBAs on the ASNFs. Mexican spotted owl territories are "protected activity centers" or PACs. Northern goshawk territories are "post fledgling areas" or PFAs. Note that both PACs and PFAs are generally around 600 acres or somewhat more.[8] In addition, both focus not just on the breeding site (nest) but acreage around it that is important to fledging young. Peregrine territories are not formally designated, however, a radius of 10 miles from the nesting site is considered important to rearing young while associated forested riparian areas are primary foraging areas for peregrines.

Table D-1. Mexican spotted owl protected activity centers within IBAs

Upper Little Colorado River Important Bird Area		
PAC number	PAC name	Acreage within IBA
6004	South Fork	602
6005	Greer	619
6006	Hall Creek	610
6009	Hay	626
6011	Badger Knoll	767
6012	EF Little Colorado River	630
6013	WF Little Colorado River	645
	IBA PAC acreage:	4,499
Blue and San Francisco Rivers Important Bird Area		
PAC number	PAC name	Acreage within IBA
1010	Oscar	601
1025	Campbell Blue	335
1027	Upper KP Creek	556
1028	Lower KP Creek	634
1042	Upper Blue	499
1043	Pueblo Park	274
1045	Dutch Oven	44
1051	Rim	19
1053	Sawmill	226
1054	Butterfly	126
1055	Blue Vista	510
1062	Brent's Box	676
1145	Telephone	279
	IBA PAC acreage:	4,778
Mogollon Rim Snowmelt Draws Important Bird Area		
PAC number	PAC name	Acreage within IBA
4001	Knoll Lake	613
4002	O'haco Lookout	603
4003	Double Cabin	625
4004	Ridge	602
4005	Mule Crossing	609
4007	Wiggins	76

[8] Note that when PACs and PFAs are in the same general area, they often have the same name.

4019	Powerline	606
4020	Gentry	628
	IBA PAC acreage:	4,361
Total IBA PAC acreage:		13,638

Table D-2. Northern goshawk post fledging areas (PFAs) within IBAs

Upper Little Colorado River Important Bird Area		
PFA number	PFA name	Acreage within IBA
6002	Hidden Lake	621
6013	Hall Creek	615
6014	Marble Spring	660
	IBA PFA acreage:	1,897
Blue and San Francisco Rivers Important Bird Area		
PFA number	PFA name	Acreage within IBA
1009	Campbell Blue	618
1017	Buckalou Road	357
	IBA PFA acreage:	975
Mogollon Rim Snowmelt Draws Important Bird Area		
PFA number	PFA name	Acreage within IBA
4003	Open Draw	674
4004	215 Road	630
4005	Mule Crossing	600
4013	Ranch Allegre	608
4014	Hart	37
4015	Double Cabin	600
	IBA PFA acreage:	3,150
Total IBA PFA acreage:		6,022

Table D-3. Peregrine falcon cliff nesting eyrie and associated riparian foraging habitat

Upper Little Colorado River Important Bird Area	
Site name	Forested riparian acreage within IBA
Hidden Lakes	514
Blue and San Francisco Rivers Important Bird Area	
Site name	Forested riparian acreage within IBA
Castle Rock *	6,073
Red Hill*	
Mogollon Rim Snowmelt Draws Important Bird Area	
Site name	Forested riparian acreage within IBA
Promotory Butte *	573
* Eyrie not in but near IBA and IBA provides riparian foraging habitat for nesting peregrines.	

Appendix E. Plan Components contributing to Migratory Birds, Eagles, and their Habitats

Appendix E provides a crosswalk that shows how plan components meet the needs of migratory birds and eagles, including their habitat needs.

While multiple plan components help provide for these bird species, specific plan components that address threats to migratory birds and eagles noted in this report are italicized. The following abbreviations are used in the following table:

DC = desired condition
ST = standard
GL = guideline
PNVT = potential natural vegetation type
MA = management area

Table 1. Species crosswalk for how plan components meet migratory birds and eagle needs, including habitat needs[9]

PNVT, Habitat, or Threat	Plan Components (plan decisions) (those that address specific threats to these species are italicized)
All PNVTs, all habitat elements, and other factors of concern	*DC for Overall Ecosystem Health: Habitat quality, distribution, and abundance exist to support the recovery of federally listed species and the continued existence of all native and desirable nonnative species.* <u>*Bald eagle*</u> *GLs for Soil: Projects with ground-disturbing activities should be designed to minimize long- and short-term impacts to soil resources. Where disturbance cannot be avoided, project-specific soil and water conservation practices should be developed.* <u>*Gray flycatcher, MacGillvray's warbler*</u> Severely disturbed sites should be revegetated with native plant species when loss of long-term soil productivity is evident. GL for All PNVTs: Landscape scale restoration projects should be designed to spread out treatments spatially and/or temporally to reduce implementation impacts and allow reestablishment of vegetation and soil cover. *GLs for Wildlife and Rare Plants: Management activities should not contribute to the trend toward Federal listing.* <u>*Golden eagle*</u> *Rare, unique habitats (e.g., talus slopes, cliffs, canyon slopes, caves, fens, bogs, sinkholes) should be protected protected to retain their distinctive ecological functions and maintain viability of associated species.* <u>*Golden eagle*</u>
Forested PNVTs	GLs for All Forested PNVTs: Where current forests are lacking proportional representation of late seral states and species composition on a landscape scale, old growth characteristics should be retained or encouraged to the greatest extent possible within the scope of meeting other desired conditions (e.g., reduce impacts from insects and disease, reduce the threat of uncharacteristic wildfire). *DC for Wildlife and Rare Plants: During treatments, snags should be retained in the largest diameter classes available as needed to meet wildlife or other resource needs.* <u>*Golden-crowned kinglet, Three-toed woodpecker, Flammulated owl*</u> *DC for Wildlife and Rare Plants: Active raptor nests should be protected from treatments and disturbance during the nesting season to provide for successful reproduction…* <u>*Flammulated owl, Golden eagle, Bald eagle*</u>
Ponderosa pine forest PNVT	*Landscape DCs for Ponderosa Pine: The ponderosa pine forest is a mosaic of structural states ranging from young to old trees… Snags and coarse woody debris are well distributed throughout the landscape. Ponderosa pine snags are typically 18 inches or greater in diameter and average 1 to 2 per acre.* <u>*Purple martin, Flammulated owl*</u> *Where it naturally occurs, Gambel oak is present with all age classes represented. It is reproducing to maintain or expand its presence on capable sites across the landscape. Large Gambel oak snags are typically 10 inches or larger in diameter and are well distributed.* <u>*Graces's warbler*</u> *GL for Ponderosa Pine: Where Gambel oak or other native hardwood trees and shrubs are desirable to retain for diversity, treatments should improve vigor and growth of these species.* <u>*Graces's warbler*</u> *DC for Wildlife and Rare Plants: During treatments, snags should be retained in the largest diameter classes available as needed to meet wildlife or other resource needs.* <u>*Purple martin, Flammulated owl*</u> *GL for Landscape Scale Disturbance Events: An adequate number and size of snags and logs, appropriate for the affected PNVT, should be retained individually and in clumps to provide benefits for wildlife and coarse woody debris for soil and other resource*

[9] See the Final Land Management Plan for minor adjustments in plan components in this table.

PNVT, Habitat, or Threat	Plan Components (plan decisions) (those that address specific threats to these species are italicized)
	benefits. Purple martin GLs for Wildlife and Rare Plants: Modifications, mitigations, or other measures should be incorporated to reduce negative impacts to plants, animals, and their habitats and to help provide for species needs, consistent with project or activity objectives. *DC for Livestock Grazing: Livestock grazing is in balance with available forage (i.e., grazing and browsing by authorized livestock, wild horses, and wildlife do not exceed available forage production within established use levels). Graces's warbler*
Dry mixed conifer forest PNVT	*Midscale DC for Dry Mixed Conifer: Tree density within forested areas ranges from 30 to 100 square feet basal area per acre. Olive-sided flycatcher* *GL for Dry Mixed Conifer: Where Gambel oak or other native hardwood trees and shrubs are desirable to retain for diversity, treatments should improve vigor and growth of these species. Graces's warbler* *GL for Landscape Scale Disturbance Events: An adequate number and size of snags and logs, appropriate for the affected PNVT, should be retained individually and in clumps to provide benefits for wildlife and coarse woody debris for soil and other resource benefits. Olive-sided flycatcher* GL for Wildlife and Rare Plants: Modifications, mitigations, or other measures should be incorporated to reduce negative impacts to plants, animals, and their habitats and to help provide for species needs, consistent with project or activity objectives.
Wet mixed conifer forest PNVT	*Midscale DC for Wet Mixed Conifer: Tree density ranges from 30 to 180 square feet basal area per acre depending upon time since disturbance and seral states of groups and patches. Olive-sided flycatcher* *GL for Landscape Scale Disturbance Events: An adequate number and size of snags and logs, appropriate for the affected PNVT, should be retained individually and in clumps to provide benefits for wildlife and coarse woody debris for soil and other resource benefits. Olive-sided flycatcher* GL for Wildlife and Rare Plants: Modifications, mitigations, or other measures should be incorporated to reduce negative impacts to plants, animals, and their habitats and to help provide for species needs, consistent with project or activity objectives.
Spruce-fir forestPNVT	*Landscape DC for Spruce-fir: Tree canopies in this forest are closed. An understory, consisting of native grass, forbs, and/or shrubs, is present in early seral states and is replaced by trees in later seral states. Golden-crowned kinglet* *DC for Wildlife and Rare Plants: During treatments, snags should be retained in the largest diameter classes available as needed to meet wildlife or other resource needs. Three-toed woodpecker* *GL for Landscape Scale Disturbance Events: An adequate number and size of snags and logs, appropriate for the affected PNVT, should be retained individually and in clumps to provide benefits for wildlife and coarse woody debris for soil and other resource benefits. Three-toed woodpecker* GL for Wildlife and Rare Plants: Modifications, mitigations, or other measures should be incorporated to reduce negative impacts to plants, animals, and their habitats and to help provide for species needs, consistent with project or activity objectives.
Piñon-juniper woodland	*Woodland GL: Mechanical restoration of woodlands should emphasize individual tree removal to limit ground disturbance Pinyon jay, Black-throated gray warbler*
Chaparral	DC for Chaparral: The majority (85 to 95 percent) of chaparral is closed canopy with some openings of grasses and forbs.

PNVT, Habitat, or Threat	Plan Components (plan decisions) (those that address specific threats to these species are italicized)
	Virginia's warbler
Montane/subalpine grasslands PNVT	*DC for Livestock Grazing: Livestock grazing and associated activities contribute to healthy, diverse plant communities, satisfactory condition soils, and wildlife habitat. Savannah sparrow* *ST for All PNVTs [including grasslands]: Within each PNVT, vegetation management activities shall be designed to maintain or move plant composition towards a moderate to high plant community similarity as compared to site potential. Savannah sparrow* DC for Grasslands: Vegetative ground cover (herbaceous vegetation and litter cover) is optimized (as defined by the TES map unit under consideration) to prevent accelerated erosion, dissipate rainfall, facilitate the natural fire regimes, and provide wildlife and insect habitat. Ungrazed herbaceous vegetation heights range from 7 to 32 inches depending on grassland type. *GL for Wildlife and Rare Plants: Modifications, mitigations, or other measures should be incorporated to reduce negative impacts to plants, animals, and their habitats and to help provide for species needs, consistent with project or activity objectives.* *GL for Livestock Grazing: Grazing use on seasonal allotments should be timed to the appropriate plant growth stage and soil moisture. Savannah sparrow*
Great Basin grassland PNVT	*DC for Livestock Grazing: Livestock grazing and associated activities contribute to healthy, diverse plant communities, satisfactory soils, and wildlife habitat. Gray flycather* *ST for All PNVTs [including grasslands]: Within each PNVT, vegetation management activities shall be designed to maintain or move plant composition towards a moderate to high plant community similarity as compared to site potential. Gray flycatcher* DC for Grasslands: Vegetative ground cover (herbaceous vegetation and litter cover) is optimized (as defined by the TES map unit under consideration) to prevent accelerated erosion, dissipate rainfall, facilitate the natural fire regimes, and provide wildlife and insect habitat. Ungrazed herbaceous vegetation heights range from 7 to 32 inches depending on grassland type. GLs for Wildlife and Rare Plants: Modifications, mitigations, or other measures should be incorporated to reduce negative impacts to plants, animals, and their habitats and to help provide for species needs, consistent with project or activity objectives.
Semi-desert grassland PNVT	*DC for Livestock Grazing: Livestock grazing and associated activities contribute to healthy, diverse plant communities, satisfactory condition soils, and wildlife habitat. Gray flycather* *ST for All PNVTs [including grasslands]: Within each PNVT, vegetation management activities shall be designed to maintain or move plant composition towards a moderate to high plant community similarity as compared to site potential. Gray flycatcher* DC for Grasslands: Vegetative ground cover (herbaceous vegetation and litter cover) is optimized (as defined by the TES map unit under consideration) to prevent accelerated erosion, dissipate rainfall, facilitate the natural fire regimes, and provide wildlife and insect habitat. Ungrazed herbaceous vegetation heights range from 7 to 32 inches depending on grassland type. GL for Wildlife and Rare Plants: Modifications, mitigations, or other measures should be incorporated to reduce negative impacts to plants, animals, and their habitats and to help provide for species needs, consistent with project or activity objectives.

PNVT, Habitat, or Threat	Plan Components (plan decisions) (those that address specific threats to these species are italicized)
Montane willow riparian forest PNVT	*DC for Livestock Grazing: Livestock grazing and associated activities contribute to healthy, diverse plant communities, satisfactory condition soils, and wildlife habitat. MacGillvray's warbler, Bald eagle* *GLs for Motorized Opportunities: New roads, motorized trails, or designated motorized areas should be located to avoid meadows, wetlands, riparian areas, stream bottoms... MacGillvray's warbler* As projects occur in riparian or wet meadow areas, unneeded roads or motorized trails should be closed or relocated, drainage restored, and native vegetation reestablished to move these areas toward their desired condition. *GL for Wildlife and Rare Plants: Cool and/or dense vegetation cover should be provided for species needing these habitat components… MacGillvray's warbler* *GL for Riparian Areas: Active grazing allotments should be managed to maintain or improve to desired riparian conditions. MacGillvray's warbler* *GLs for Livestock Grazing: To minimize potential resource impacts from livestock, salt or nutritional supplements should not be placed within a quarter of a mile of any riparian area or water source… MacGillvray's warbler* To prevent resource damage (e.g., streambanks) and disturbance to federally listed and sensitive wildlife species, trailing of livestock should not occur along riparian areas…
Cottonwoood-Willow riparian forest PNVT	*DC for Livestock Grazing: Livestock grazing and associated activities contribute to healthy, diverse plant communities, satisfactory condition soils, and wildlife habitat. Golden eagle* GLs for Motorized Opportunities: As projects occur in riparian or wet meadow areas, unneeded roads or motorized trails should be closed or relocated, drainage restored, and native vegetation reestablished to move these areas toward their desired condition. GLs for Wildlife and Rare Plants: Modifications, mitigations, or other measures should be incorporated to reduce negative impacts to plants, animals, and their habitats and to help provide for species needs, consistent with project or activity objectives. GL for Riparian Areas: Active grazing allotments should be managed to maintain or improve to desired riparian conditions. GL for Livestock Grazing: To minimize potential resource impacts from livestock, salt or nutritional supplements should not be placed within a quarter of a mile of any riparian area or water source…
Mixed broadleaf deciduous riparian forest PNVT	*DC for Livestock Grazing: Livestock grazing and associated activities contribute to healthy, diverse plant communities, satisfactory condition soils, and wildlife habitat. Yellow-breasted chat* *ST for Invasive Species: Projects and authorized activities shall be designed to reduce the potential for the introduction of new species or spread of existing invasive or undesirable aquatic or terrestrial nonnative populations. Yellow-breasted chat (e.g., livestock grazing > cowbirds)* GLs for Motorized Opportunities: As projects occur in riparian or wet meadow areas, unneeded roads or motorized trails should be closed or relocated, drainage restored, and native vegetation reestablished to move these areas toward their desired condition. GLs for Wildlife and Rare Plants: Modifications, mitigations, or other measures should be incorporated to reduce negative impacts to plants, animals, and their habitats and to help provide for species needs, consistent with project or activity objectives. *GL for Riparian Areas: Active grazing allotments should be managed to maintain or improve to desired riparian conditions.*

PNVT, Habitat, or Threat	Plan Components (plan decisions) (those that address specific threats to these species are italicized)
	Yellow-breasted chat *GLs for Livestock Grazing: To minimize potential resource impacts from livestock, salt or nutritional supplements should not be placed within a quarter of a mile of any riparian area or water source…* *Yellow-breasted chat* To prevent resource damage (e.g., streambanks) and disturbance to federally listed and sensitive wildlife species, trailing of livestock should not occur along riparian areas…
Disturbance / Harm	*GL for Special Uses: As applicable, issuance of special use authorizations should incorporate measures to reduce potential impacts to wildlife…* *Golden eagle, Bald eagle* *GLs for Motorized Opportunities: New roads, motorized trails, or designated motorized areas should be located to avoid meadows, wetlands, riparian areas, stream bottoms...* *Bald eagle* As projects occur in riparian or wet meadow areas, unneeded roads or motorized trails should be closed or relocated, drainage restored, and native vegetation reestablished to move these areas toward their desired condition. *GLs for Dispersed Recreation: Timing restrictions on recreation uses should be considered to reduce conflicts with wildlife needs…* *Golden eagle, Bald eagle* *GL for Energy Corridor MA: Modifications, mitigations, or other measures should be incorporated to reduce negative impacts to plants, animals, and their habitats and to help provide for species needs, consistent with project or activity objectives.* *Golden eagle, Bald eagle* *GL for Wildlife and Rare Plants: Rare and unique features (e.g., talus slopes, cliffs, canyon slopes, caves, fens, bogs, sinkholes) should be protected to retain their distinctive ecological functions and maintain viability of associated species.* *Golden eagle* *ST for Invasive Species: Projects and authorized activities shall be designed to reduce the potential for the introduction of new species or spread of existing invasive or undesirable aquatic or terrestrial nonnative populations.* *Yellow-breasted chat* *(e.g., livestock grazing > cowbirds))* GLs for Research Natural Area MA: Research special use authorizations should limit impacts to sensitive resources, unique features, and species within the RNA. *GL for Special Uses: The use of underground utilities should be favored to avoid potential conflicts with resources (e.g., scenic integrity, wildlife, wildfire, heritage).* *Golden eagle, Bald eagle*
High quality water (all forested riparian PNVTs)	*GL for Aquatic Habitat and Species: Sufficient water should be left in streams to provide for aquatic species and riparian vegetation.* *Bald eagle* GLs for Water Resources: Streams, streambanks, shorelines, lakes, wetlands, and other bodies of water should be protected from detrimental changes in water temperature and sediment to protect aquatic species and riparian habitat. As State of Arizona water rights permits (e.g., water impoundments, diversions) are issued, the base level of instream flow should be retained by the Apache-Sitgreaves NFs. Constraints (e.g., maximum limit to which water level can be drawn down, minimum distance from a connected river, stream, wetland, or groundwater-dependent ecosystem) should be established for new groundwater pumping sites permitted on NFS lands in order to protect the character and function of water resources.

PNVT, Habitat, or Threat	Plan Components (plan decisions) (those that address specific threats to these species are italicized)
	GL for Wildlife and Rare Plants: Any action likely to cause a disturbance and take to bald and golden eagles in nesting and young rearing areas should be avoided per the Bald and Golden Eagle Protection Act. *Golden eagle, Bald eagle* *STs for Water Uses: Special uses for water diversions shall maintain fish, wildlife, and aesthetic values and otherwise protect the environment.* *Bald eagle* *Streams on NFS lands with high aquatic values and at risk from new water diversions shall be preserved and protected with instream flow water rights.* *MacGillivray's warbler, Yellow-breasted chat*
Healthy riparian conditions (all riparian PNVTs)	GLs for Livestock Grazing: New livestock troughs, tanks, and holding facilities should be located out of riparian areas to reduce concentration of livestock in these areas. Existing facilities in riparian areas should be modified, relocated, or removed where their presence is determined to inhibit movement toward desired riparian or aquatic conditions. To minimize potential resource impacts from livestock, salt or nutritional supplements should not be placed within a quarter of a mile of any riparian area or water source… *GL for Minerals and Geology: Streambed and floodplain alteration or removal of material should not occur if it prevents attainment of riparian, channel morphology, or streambank desired conditions.* *MacGillivray's warbler, Yellow-breasted chat*