

- 1 ■ Work with adjacent landowners to mitigate the effects of water uses from outside groundwater or
2 surface water sources which could impact forest resources.
- 3 ■ Diversions of any water sources that support wetlands, riparian areas, aquifer recharge, or other
4 important functions will be assessed and mitigated to minimize effects.

5 Species

6 Aquatic Species and Habitats

7 Background and Description

8 Streams, springs, groundwater, and constructed waters are centers of high biological diversity in
9 semi-arid environment, and the ecological health of these resources is important for Forest
10 ecosystem sustainability. Wildlife is more concentrated around open water sources than in the
11 general landscape, and obligate aquatic and semiaquatic species on the Cibola National Forest are
12 sometimes entirely dependent on these limited and scattered water sources. Collectively, these
13 resources contribute to connecting habitat for wildlife across the landscape. Aquatic species and
14 habitats are managed in conjunction with other resources according to the Multiple Use Sustained
15 Yield Act of 1960 (Public Law 86-517). For federally endangered and threatened species on the
16 Cibola, habitat management and compatible multiple uses are determined in accordance with section
17 7 of the Endangered Species Act as amended (Public Law 93-205). For species of conservation
18 concern, habitat management and compatible multiple uses will be accomplished in such a way that
19 ensures those species' persistence on the Forest, per the 2012 Planning Rule.

20 Springs are highly productive habitats in otherwise low productivity semi-arid environment. Springs
21 are frequently more stable hydrologically than surrounding upland ecosystems in arid regions, and
22 may offer biological refugia for some species, particularly those that are narrowly endemic. They
23 also often have important traditional, cultural significance to humans inhabiting arid landscapes and
24 often provide many cultural and recreational opportunities. Contemporary uses include contributions
25 to potable local and urban water supplies and agricultural uses such as livestock watering. These uses
26 are vital to domestic and commercial interests in and around the Cibola National Forest.

27 Natural and constructed waters provide water and food resources that are especially vital to wildlife;
28 particularly amphibians, birds, bats, and invertebrates. Various water impoundments have been
29 constructed on the Cibola for a variety of purposes including reservoirs, constructed lakes, stock
30 tanks, and wildlife drinkers. Some constructed waters provide unique riparian habitats and
31 recreational opportunities.

32 Climate change is an important consideration when managing habitat for aquatic species. While
33 climate change has the potential to affect all wildlife species, some are inherently more vulnerable
34 than others, particularly species with specialized niches, limited mobility, and limited physiological
35 adaptability. Certain habitats are more vulnerable to a changing climate. For example, springs and
36 seeps are a valuable natural water source for a variety of birds and mammals, particularly in semi-
37 arid environments. These areas may offer critical refugia for rare and narrow endemic species.
38 However, springs are especially sensitive to variable precipitation and likely to dry up during
39 prolonged drought. As such, the unreliability of natural water resources would make it harder for
40 wildlife species to persist, pushing the limits of their natural range.

1 **Desired Conditions**

- 2 ■ Streams and aquatic habitats support self-sustaining populations of native fish and/or other
3 aquatic species and provide the quantity and quality of aquatic habitat within reference
4 conditions.
- 5 ■ Streams, springs, and wetlands with the potential to support native fish and/or other aquatic
6 species provide habitats that are resilient or adaptive to natural or anthropogenic disturbances
7 and projected warmer and drier climatic conditions.
- 8 ■ Habitat conditions and compatible multiple uses contribute to the recovery of federally listed
9 species and the persistence of species of conservation concern.
- 10 ■ Stream flows, habitat, and water quality support native aquatic and riparian-dependent species
11 and habitat both on the Forest and downstream.
- 12 ■ Aquatic habitat conditions provide connectivity for species both on the Forest and downstream.
- 13 ■ All aquatic species populations are free from or minimally impacted by nonnative plants,
14 animals, disease, and pathogens.
- 15 ■ Desirable nonnative fish species provide recreational fishing in waters where those opportunities
16 are not in conflict with the recovery of native species.
- 17 ■ Aquatic species habitat conditions provide the resiliency and redundancy necessary to maintain
18 species biodiversity and metapopulations.
- 19 ■ All natural aquatic habitats are hydrologically functioning and have sufficient emergent
20 vegetation and macroinvertebrate populations to support resident and migratory species.

21 **Standard**

- 22 ■ Constructed water features (such as water tanks and cattle guards) have escape ramps that
23 provide safe access and egress for wildlife.

24 **Guidelines**

- 25 ■ Activities in and around waters should use decontamination procedures to prevent the spread of
26 chytrid fungus and other pathogens that are harmful to aquatic wildlife.
- 27 ■ If new waters are constructed, they should be located in areas that would reduce ungulate impact
28 to sensitive vegetation or soils such as riparian, aspen, and wet meadow areas.
- 29 ■ Streams, stream banks, shorelines, lakes, wetlands, seeps, springs and other bodies of water
30 should be protected from detrimental changes (as described in species-specific literature
31 including recovery plans, listing and critical habitat designations, and conservation strategies) to
32 protect water quality, aquatic species, and riparian habitat.
- 33 ■ To protect water quality and aquatic species, heavy equipment and vehicles driven into a water
34 body to accomplish work should be completely clean of petroleum residue. Water levels should
35 be below the gear boxes of the equipment in use. Lubricants and fuels should be sealed such that
36 inundation by water should not result in leaks.
- 37 ■ Project design should incorporate measures to protect and provide for rare and narrow endemic
38 aquatic species where they are likely to occur.

1 Management Approaches

- 2 ■ Where adequate groundwater or surface hydrology exists, and if natural recruitment is not
3 sufficient, managers may supplement natural recruitment with planting to reestablish native
4 riparian vegetation to provide shading, bank cover, and streambank stability.
- 5 ■ The Cibola will work collaboratively with New Mexico Department of Game and Fish to resolve
6 conflicts that may exist between the management of nonnative sport fish and the persistence of
7 native fish.
- 8 ■ Explore reintroduction of native fish assemblages to appropriate perennial stream reaches
9 including Las Huertas Creek.
- 10 ■ Pursue partnership potential for collaborative management of aquatic resources with state,
11 county and local government entities.

12 Terrestrial Species and Habitats

13 Background and Description

14 The Cibola National Forest provides habitat for a wide variety of terrestrial wildlife and plant
15 species. Topographical and geological conditions of the wide-ranging “sky islands” provide for
16 variation in wildlife distribution and habitat use. The spatially disjunct nature of the four districts
17 influences movement patterns of wide-ranging mammal herds such as elk, mule deer, Black bear,
18 wild turkey, cougar and pronghorn. The Cibola is primarily responsible for providing habitat to
19 maintain species diversity on National Forest lands. The Forest Service has ultimate responsibility
20 over National Forest System lands, but the New Mexico Department of Game and Fish (NMDGF)
21 and the U.S. Fish and Wildlife Service (USFWS) are the lead agencies responsible for managing
22 wildlife populations in New Mexico. The USFWS is responsible for managing federally endangered
23 and federally threatened species and migratory birds while the NMDGF is responsible for managing
24 all other wildlife species. Terrestrial species and habitats are managed in conjunction with other
25 resources according to the Multiple Use Sustained Yield Act of 1960 (Public Law 86-517). For
26 federally endangered and threatened species on the Cibola, habitat management and compatible
27 multiple uses are determined in accordance with section 7 of the Endangered Species Act as
28 amended (Public Law 93-205). For species of conservation concern, habitat management and
29 compatible multiple uses will be accomplished in such a way that ensures those species’ persistence
30 on the Forest, per the 2012 Planning Rule (see “Threatened and Endangered Species and Species of
31 Conservation Concern” section for more information.)

32 The needs of individual or groups of wildlife species include food, water, and shelter. Adequate
33 habitat connectivity is also crucial to daily and seasonal movements, finding mates, and being able to
34 utilize available habitat across the landscape. Healthy, diverse vegetation and functioning ecosystem
35 processes help ensure diversity of habitats and wildlife, while reducing risks to the sustainability of
36 those habitats and species. In addition, unique habitats (for example, wildlife quiet areas and
37 unroaded areas) are necessary to sustain other species.

38 Desired Conditions

- 39 ■ Native ecosystems are within reference conditions, are distributed throughout their potential
40 range, and are sustainable across the Forest and able to support a full complement of native
41 species.
- 42 ■ There is a natural and nearly complete assemblage of native plants and animals, including
43 important game species, distributed across the Forest.

- 1 ■ Habitat conditions and compatible multiple uses contribute to the recovery of federally listed
2 species and the persistence of species of conservation concern.
- 3 ■ Habitats and refugia are present for narrow endemics, rare plants, species with restricted
4 distributions, and/or declining populations. These habitats are intact and functioning.
- 5 ■ Hunting, fishing, plant-gathering and other species-based recreation and cultural opportunities
6 exist, but do not compromise species, populations, or habitat.
- 7 ■ Habitats on the Forest allow for the maintenance and promotion of interspecific relationships
8 (for example, predator-prey relationships and keystone species relationships).
- 9 ■ Desirable nonnative species provide recreational opportunities where those opportunities are not
10 in conflict with the recovery of native species.
- 11 ■ Habitat configuration and availability allow wildlife populations to adjust their movements in
12 response to major disturbances (such as climate change and uncharacteristic fire) and promote
13 genetic flow between wildlife populations across the Forest and beyond.
- 14 ■ Natural processes occur within the vegetative communities that enhance species richness and
15 diversity. Terrestrial ecosystems are resilient to disturbance and tolerate the effects of, and
16 therefore benefit from, wildland fire in a near natural fire regime as well as other naturally
17 occurring disturbances.
- 18 ■ Interconnected habitats within National Forest System lands allow for seasonal migrations,
19 breeding, dispersal, foraging, and other movement patterns in order to promote genetic flow
20 across the Forest.
- 21 ■ Habitat is available at the appropriate spatial, temporal, compositional, and structural levels such
22 that it provides adequate opportunity for breeding, feeding, nesting, and carrying out other
23 critical life cycle needs for a variety of vertebrate and invertebrate species.
- 24 ■ Non-vegetative habitat features required for some species (such as cliffs, caves, cavities) are
25 maintained with limited disturbance. Vegetative habitat features (such as snags, grasses, forbs,
26 and shrubs) provide forage, cover, fawning, and nesting sites for species requiring them.
- 27 ■ Species are free from harassment and anthropogenic disturbance at a scale that impacts vital
28 functions (such as breeding, feeding, and rearing young) that could affect persistence of the
29 species.
- 30 ■ Habitat loss and fragmentation is reduced and permeability is enhanced by conserving and
31 restoring habitat linkages within and, where possible, between the national forests and other
32 public and privately conserved lands.

33 Guidelines

- 34 ■ Modifications, mitigations, or other measures should be incorporated to reduce negative impacts
35 to plants, animals, and their habitats and to help provide for species needs, consistent with
36 project or activity objectives.
- 37 ■ Known raptor nests, including those on cliff faces, should be protected from treatments and
38 disturbance during the nesting season to provide for successful reproduction.
- 39 ■ Rare and unique features (for example, talus slopes, cliffs, canyon slopes, caves, fens, bogs,
40 sinkholes, maars, and playas) should be protected from damage or loss in order to retain their
41 distinctive ecological functions and maintain viability of associated species.

- 1 ■ Constructed features (such as wildlife drinkers) should be maintained to support the purpose(s)
2 for which they were built or be removed when no longer needed.
- 3 ■ Constructed features should be designed to blend with the natural surroundings, consistent with
4 the scenic integrity objectives.
- 5 ■ Barriers to wildlife habitat connectivity that are unneeded or nonfunctional infrastructure (such
6 as unneeded fences and stock tanks) should be removed.
- 7 ■ Project activities and special uses should be designed and implemented to maintain refugia and
8 critical life cycle needs of wildlife, particularly for species of conservation concern.
- 9 ■ Project design should incorporate measures to protect and provide for rare and narrow endemic
10 terrestrial species where they are likely to occur.
- 11 ■ Conserve a diversity of pollinators and sustain the natural ecosystems upon which they depend.
12 Encourage seed mixes and reclamation work that includes native forbs and wildflowers that will
13 benefit pollinator species.

14 Management Approaches

- 15 ■ The Cibola National Forest strives to create and maintain natural communities and habitats in the
16 amounts, arrangements, and conditions capable of supporting viable populations of existing
17 native and desired nonnative plant, aquatic, and wildlife species within the planning area while
18 contributing to broader landscape-scale initiatives where appropriate. This is accomplished in an
19 integrative fashion by working closely with range, fire, timber, and other resource areas to
20 coordinate and maximize activities for wildlife benefit. Where appropriate, coordinate
21 maintenance and construction of features (such as water sources) with range permittees and
22 others. Cooperation with State and federal wildlife management agencies also helps to minimize
23 conflicting wildlife resource issues related to hunted, fished, and trapped species. Leverage
24 resources by recognizing partnership potential with county and local government entities. The
25 Cibola coordinates with Rocky Mountain Research Station and other entities to identify future
26 areas of research that would support management decisions and enable the adaptive management
27 process.
- 28 ■ The Cibola works collaboratively with the New Mexico Department of Game and Fish to plan
29 and implement projects that make progress towards the Cibola's desired conditions and help
30 achieve conservation actions specified in the New Mexico State Wildlife Action Plan or
31 equivalent. Corridors are not static, as vegetation changes and off-forest land use and
32 management changes, the areas that species use to move through, forage, and complete various
33 life history events will move on the landscape. It is important to recognize at the project level the
34 importance of connectivity, and the best available science and tools (including but not limited to
35 the New Mexico Crucial Habitat Assessment Tool, New Mexico Department of Game and Fish
36 State Wildlife Action Plan, U.S. Fish and Wildlife Service) should be consulted during project
37 development. Where possible, the Cibola will collaborate with other adjacent land ownership
38 entities, such as the New Mexico Department of Transportation, for wildlife-friendly fence
39 designs. Large-scale wildlife habitat restoration treatments benefit multiple species while small
40 projects address the needs of localized species. In addition, the Cibola will also continue to work
41 with the Natural Heritage New Mexico to develop the "crucial habitat assessment tool" and
42 implement it where appropriate in project planning. Where the need is demonstrated, seasonal
43 road restrictions and area closures may be used to provide refuge in small and large blocks of
44 land habitat for a wide range of species.

- 1 ■ Potential climate change, drought, El Niño Southern Oscillation, and the resulting potential
2 effects of management activities are considered during project planning. Particular species that
3 are sensitive to changes in weather may need special consideration. Changes in typical weather
4 patterns can affect migration habitat use, breeding seasons, and fecundity (in hotter, drier years,
5 mitigations may be needed to reduce physiological stress on breeding wildlife). Climate change
6 is an important consideration when managing habitat for wildlife species.
- 7 ■ The Cibola references current literature and the best available science when making site-specific
8 decisions relevant to project planning. This is done in an interdisciplinary context with input
9 from other resource specialists. For example; the wildlife guideline specifying disturbance
10 buffers around raptor nests is intended as a minimum buffer. Some raptor species (such as
11 osprey) are more adapted to disturbance and are likely to tolerate a buffer of just 300 yards
12 during the breeding season while other, less tolerant species (such as the peregrine falcon) may
13 require buffers of up to a 0.5 mile. Wildlife biologists work with other interdisciplinary resource
14 specialists to identify and define the appropriate site-specific buffers (within the context of Plan
15 guidance) for other raptors on a case-by-case basis.
- 16 ■ The Forests coordinate with the Wildlife Service Program of USDA Animal and Plant Health and
17 Inspection Service (APHIS) and the State of New Mexico to promote healthy populations of
18 predators, while reducing livestock conflicts with wildlife. Proactive livestock management
19 practices (such as separating livestock from predators in time and place, range riders, herding)
20 are incorporated to help keep conflicts from arising. In accordance with the national
21 memorandum of understanding between the Forest Service and APHIS, the effectiveness of
22 wildlife damage management practices is periodically reviewed.
- 23 ■ Forest managers recognize the need to acquire a greater understanding of many nongame species
24 (such as amphibians, invertebrates, and fish), including their habitat requirements and the effects
25 of management activities. The Forests encourage and support wildlife research and inventory.
26 The Forests develop partnerships with interested individuals and groups to help implement the
27 wildlife program, including wildlife survey and habitat assessment. The Forests also promote
28 public education and valuing of the wildlife resource on the Forests. The latter is increasingly
29 important with growing urbanization and Forest use.

30 **Nonnative, Invasive Species**

31 **Background and Description**

32 A native species is defined in the 2012 Planning Rule as “an organism that was historically or is
33 present in a particular ecosystem as a result of natural migratory or evolutionary processes; and not
34 as a result of an accidental or deliberate introduction into that ecosystem.” Species not meeting this
35 definition are considered nonnative. Some nonnative species have invasive tendencies and threaten
36 native species, ecosystem function, biodiversity, and the quantity and quality of forest goods and
37 services (for example, noxious weeds). Some nonnative species are desirable and/or not likely to
38 cause ecosystem disruption, and are not addressed in this section. Invasive weeds have been
39 documented to alter soil temperature, soil salinity, water availability, nutrient cycles and availability,
40 native seed germination, infiltration and runoff of precipitation, and fire severity and frequency. The
41 alteration of physical conditions and disturbance regimes allow the invasive species to spread farther.
42 Nonnative, invasive species currently known to be on the Cibola include but are not limited to:
43 American bullfrog, saltcedar, musk thistle, cheatgrass, and hoary cress.

44 Management activities for aquatic and terrestrial invasive species (including vertebrates,
45 invertebrates, plants, and pathogens) will be based upon an integrated pest management approach on

1 all areas within the National Forest System, and on areas managed outside of the National Forest
2 System under the authority of the Wyden Amendment (Public Law 109-54, section 434), prioritizing
3 prevention and early detection and rapid response actions as necessary (Forest Service Manual
4 2900). The four elements under the invasive species systems approach include: prevention, detection,
5 control and management, and restoration and rehabilitation (Forest Service National Strategic
6 Framework for Invasive Species Management 2013).

7 Requirements and specifications in the Regional guidelines for weed-free seed, forage, mulch and fill
8 materials should be used in Burned Area Emergency Response contracts, rule or regulation setting,
9 road construction and maintenance, office landscaping, seeding for range and watershed
10 rehabilitation, and other Forest Service operations or processes.

11 Similar to invasive plants, invasive animals have the potential to adversely affect native species and
12 ecosystem function. They can outcompete and prey upon native animal species, alter food web
13 interactions, and impact native vegetation. Feral animals, including unauthorized livestock, are a
14 problem in some areas on the Cibola. These animals are managed by other agencies such as the New
15 Mexico Livestock Board and the USDA Animal and Plant Health Inspection Service (APHIS).

16 Invasive disease and pathogens pose an increasing threat to both aquatic and terrestrial native
17 species. Chytrid fungus has been linked to infectious disease and dramatic die-offs in amphibians
18 world-wide, while White-Nose Syndrome has been decimating bat populations and slowly moving
19 westward in North America. Best management practices, including decontaminating equipment, are
20 currently the best tools for preventing the further spread of these and other pathogens.

21 **Desired Conditions**

- 22 ■ Invasive species, and management projects and tools used to extirpate or minimize them, do not
23 disrupt the structure or function of ecosystems, species life cycles, or populations, and minimize
24 impacts to native wildlife or plant species.
- 25 ■ Desirable nonnative species are managed so that they do not conflict with the recovery of native
26 species or existing multiple uses.

27 **Standard**

- 28 ■ All ground-disturbing projects (including vegetation, roads, and fire, etc.) shall assess the risk of
29 noxious weed invasion and incorporate measures to minimize the potential for the spread of
30 noxious and invasive species. New populations should be detected early, monitored, and treated
31 as soon as possible.

32 **Guidelines**

- 33 ■ Treatment approaches should use integrated pest management practices to treat noxious and
34 nonnative, invasive species. These practices include mechanical/physical, cultural, biological,
35 and chemical control.
- 36 ■ Activities in and around waters should use decontamination procedures to prevent the spread of
37 chytrid fungus and other pathogens harmful to aquatic wildlife.
- 38 ■ Use of pesticides, herbicides, and biocontrol agents should minimize impacts on non-target flora
39 and fauna, including native pollinators.
- 40 ■ Public information, user education, and appropriate management tools should be used to limit
41 the spread of nonnative exotics in aquatic systems.

- 1 ■ Reclamation type projects which include a revegetation and/or reseeding component should
2 consider including the use of native plants for pollinators.
- 3 ■ Preventive measures, such as requiring pre- and post-work cleaning of equipment and using
4 certified weed-free seed, should be implemented through contracting, permitting, and other
5 administrative processes.
- 6 ■ For anything (boats, trailers, gear, clothing, dogs, etc.) that comes in contact with known infested
7 waters or potentially infested waters during watercraft operation or other recreational activities,
8 the Boat Inspection and Cleaning Procedures for All Water Craft Owners
9 (http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev3_014876.pdf) should be followed
10 between trips.
- 11 ■ Use a public education program to inform waterbody users of infestation risk and measures to
12 prevent infestations.
- 13 ■ Monitor susceptible waters to allow early detection of aquatic invasive species. Promptly post
14 sites if aquatic invasive species are found and, if feasible, close facility until infestation is
15 contained.
- 16 ■ Maintain a 100-foot buffer free of aquatic weeds around boat launches and docks.
- 17 ■ Never release plants, fish, or animals into a body of water unless they originally came from that
18 particular body of water. This also includes performing these precautionary procedures after a
19 fishing trip: dispose of all bait into trash bins, empty and dry any buckets used for bait, and
20 clean and dry all live-wells used for bait and caught fish on boats.
- 21 ■ Any requirements for cleaning fire-fighting equipment at a vehicle wash station should be
22 implemented before transferring equipment to new fire staging areas.
- 23 ■ Avoid staging equipment and resources in areas infested with invasive weeds and ensure that
24 fire-fighting equipment and personal gear and clothing are free of invasive weeds before being
25 brought into a staging area.
- 26 ■ Clean hides, legs, and hooves of pack animals by brushing prior to moving them into a fire-
27 disturbed area. Ensure that the pack animals have previously cleared their digestive system of
28 invasive weed seed over a period of 3 to 5 days while being fed weed-free forage.
- 29 ■ Use certified weed-free seed in burned areas and also require use of locally chipped/shredded
30 woody materials for mulch or, if necessary, use certified weed-free mulch.
- 31 ■ Prior to seeding, a certified seed laboratory should test each seed mix lot for purity, viability, and
32 noxious weed seed according to Association of Official Seed Analysts standards.
- 33 ■ Incorporate weed prevention into all new mining operation permits, plans, and reclamation
34 projects.
- 35 ■ Encourage public land users to inspect and clean motorized and mechanized trail vehicles of
36 weeds and their seeds before recreating on public lands. If practical, provide facilities for
37 cleaning contaminated vehicles and equipment.
- 38 ■ Ensure that vehicles and equipment used in rights-of-ways of roads and utility corridors on
39 National Forest System lands are power-washed of all mud, dirt, and plant parts before moving
40 into the project area.
- 41 ■ Ensure that gravel, dirt, asphalt, and other materials are stockpiled away from areas infested by
42 invasive weeds. Maintain stockpiled materials in a weed-free condition.

- 1 ■ Use only clean fill material from a weed-free source rather than borrowing fill from a weed-
2 infested stockpile, road shoulder, or ditch line. Inspect material sources on site, and ensure that
3 they are weed-free before use or transport.
- 4 ■ Avoid and remove sources of weed seed and propagules in riparian areas and waterbodies when
5 feasible.

6 Management Approaches

- 7 ■ To effectively manage invasive species populations, it is important to coordinate with other
8 agencies, counties, local governments, grazing permittees, and adjacent landowners in efforts for
9 prevention and control. Coordinate with other agencies to capitalize on outside funding
10 opportunities, and pursue partnership opportunities to treat invasive species on National Forest
11 System lands, such as soil and water conservation districts which often have personnel certified
12 for public pesticide application.
- 13 ■ Strategies to prevent the spread of nonnative, invasive species include education, inventory, and
14 control guidelines. Educational programs that increase awareness are critical to effectively
15 manage nonnative, invasive species. Treatments focus on those species that have the potential to
16 permanently alter historical fire regimes or pose the greatest threat to biological diversity and
17 watershed condition.
- 18 ■ While management that provides for interconnected habitats is desirable for many native wildlife
19 species, in some circumstances, such as springs, connectivity can also provide vectors for
20 nonnative species to spread (for example, water and vehicles used in fire suppression). The use
21 of best management practices can minimize and prevent the spread of nonnative invasive
22 species.
- 23 ■ The Noxious Weeds Management Act (76-7D-1-6) directs the New Mexico Department of
24 Agriculture to develop a noxious weed list for the state, identify methods of control for
25 designated species, and educate the public about noxious weeds. NMDA coordinates weed
26 management among local, state, and federal land managers as well as private land owners. The
27 "Noxious Weed Memo and List" and other noxious weed resources are available at
28 <http://www.nmda.nmsu.edu/apr/noxious-weed-information/>. The Cibola NF should work with
29 NMDA to ensure that special management consideration be given to all the species on the
30 noxious weed list in order to limit, and hopefully eradicate, any noxious weeds on the Cibola
31 NF.
- 32 ■ Coordinate with university research and programs such as the Cooperative Extension Service
33 through New Mexico State University.

34 Threatened and Endangered Species and Species of Conservation 35 Concern

36 Background and Description

37 Threatened and endangered species are those listed under the Endangered Species Act of 1973. There
38 are four federally endangered, three threatened, and two proposed species relevant to the Cibola
39 Mountain Districts at the time of Plan implementation. Not all of these species are known to exist on
40 the Cibola. For example, the Chiricahua leopard frog and the Alamosa springsnail have been
41 recorded immediately off the Forest boundary, but are within the same watershed as the Forest and
42 are affected by management actions on the Forest. Likewise, the southwestern willow flycatcher is
43 not currently occupying any territories on the Cibola, but it has been documented here in the past.

1 The western yellow-billed cuckoo potentially uses the Cibola only as migrant and has not been
2 documented here. Other species, including the Mexican wolf and the northern Aplomado falcon are
3 not presently documented to den or breed on the Cibola, but they routinely use the Forest for
4 foraging. Mexican spotted owl, Zuni fleabane, and Zuni bluehead sucker are known residents on the
5 Cibola, and there are long-standing records documenting their presence here. The primary needs for
6 threatened and endangered species are addressed through law, regulation, and policy (such as
7 recovery plans and conservation agreements).

8 Species of conservation concern are those species, other than federally recognized threatened,
9 endangered, proposed, or candidate species, known to occur in the Plan area and for which the
10 regional forester has determined that the best available scientific information indicates substantial
11 concern about the species' capability to persist over the long term in the Plan area.

12 For many species of conservation concern, essential ecological conditions may be provided for
13 through "coarse filter" Plan components such as desired conditions, standards, and guidelines for
14 specific vegetation types. These may be adequate to ensure persistence of those species and maintain
15 viable populations within the Plan area. For other species, fine-filter Plan components that are
16 species-specific (timing restrictions, etc.) may be required to ensure persistence.

17 The Bald and Golden Eagle Protection Act, as amended, provides specific direction for those two
18 species. As a result, this Plan provides the framework for implementing the recommendations from
19 these higher-level laws, regulations, policies, plans, and agreements for these species, with limited
20 needed additional (below) direction.

21 **Desired Conditions**

- 22 ■ Threatened and endangered species have the necessary ecological conditions to contribute to
23 their recovery and maintain or restore critical habitats.
- 24 ■ Proposed and candidate species are provided ecological conditions to conserve populations and
25 maintain or restore habitats in the Plan area to contribute to preventing them from becoming
26 federally listed.
- 27 ■ Provide ecological conditions necessary to maintain a viable population of each species of
28 conservation concern in the Plan area.

29 **Standards**

- 30 ■ Project activities and special uses occurring within federally recognized species habitat shall
31 integrate habitat management objectives and species protection measures from the most recent
32 approved recovery plans.
- 33 ■ Activities occurring near areas used by bald and golden eagles shall follow recommendations
34 identified in the National Bald Eagle Management Guidelines and will be in accordance with
35 provisions of the Bald and Golden Eagle Protection Act.
- 36 ■ Habitat management objectives and aquatic/riparian species protection measures from approved
37 recovery plans will be applied to activities and special uses occurring within federally listed
38 species habitat.
- 39 ■ *Additional species-specific standards are under development for Threatened and Endangered*
40 *species as well as for species of conservation concern.*

1 **Guidelines**

- 2 ■ Active raptor nests for at-risk species should be protected from treatments and disturbance
3 during the nesting season to provide for successful reproduction.
- 4 ■ Human presence should be minimized during the nesting season for northern goshawk nest areas
5 from March 1 through September 30.
- 6 ■ Human presence should be minimized during nesting season for peregrine falcon from March 1
7 through August 15.
- 8 ■ When designing or maintaining bridges, project coordinators should consider incorporating
9 design elements that allow for the use of structures by bats or improve the potential for roost
10 habitat. Bat surveys should be conducted prior to any maintenance work.
- 11 ■ *Additional species-specific guidelines are under development for Threatened and Endangered*
12 *species as well as for species of conservation concern.*

13 **Management Approaches**

- 14 ■ The Cibola National Forest maintains strong partnerships between the State, other Federal
15 agencies, academia, and nongovernment organizations to provide for federally-recognized
16 species and species of conservation concern. Emphasis is placed on the protection and
17 replacement of key habitats that contain threatened, endangered, and/or species of conservation
18 concern plants and animals. The Cibola works with the U.S. Fish and Wildlife Service and other
19 partners to develop conservation measures (for example, public education to reduce human
20 impacts) to prevent listing and to aid in the recovery and delisting of federally listed species. For
21 10(j) species, such as the Mexican wolf, this applies inside and outside the designated
22 experimental range.
- 23 ■ To effectively manage at-risk species populations, it is important to coordinate with other
24 stakeholders, including county and local governments, permitted entities, and adjacent
25 landowners, in efforts for management and recovery. As new information and/or changing
26 conditions regarding federally-recognized species or critical habitat become available, it should
27 be communicated efficiently, effectively, and consistently to affected parties.

28 **Air**

29 **Background and Description**

30 Air quality and its effects on the Cibola National Forest Mountain Districts can be described in three
31 ways:

32 Does ambient air quality on and near the Forest meet State and Federal regulations?

33 Is visibility at scenic vistas impaired by anthropogenic pollution sources?

34 Does atmospheric deposition of pollutants, such as nitrogen, sulfur, and mercury compounds,
35 contribute to impaired ecosystem structure or function?

36 While there are no air quality monitoring stations on the Forest, nearby monitors indicate that
37 ambient measurements of criteria pollutants are in attainment. However, there is some concern in the
38 future regarding particle pollution (particulate matter PM₁₀ and PM_{2.5}) which is expected to increase
39 from windblown dust and fires. Fugitive dust emanating from off the Forest, as a result of land use
40 practices and travel on county roads, occasionally occurs and may worsen during droughts or