

Designated and Eligible Wild and Scenic Rivers

See appendix A, map 3.

General Description and Background for Designated and Eligible Wild and Scenic Rivers

The National Wild and Scenic Rivers Act was passed in 1968, with the purpose of implementing a governmental program to study and protect [free-flowing](#) river segments. Protected segments are considered part of the National Wild and Scenic River System and are designated by Congress. Eligible segments are free-flowing and have at least one [outstandingly remarkable value](#), but have not yet been designated by Congress. Outstandingly remarkable values are scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values that make a river eligible for designation as a wild or scenic river. For additional information on the outstandingly remarkable values for each eligible river segment, consult the inventory and eligibility reports prepared by the Coconino NF and the Prescott NF (USDA Forest Service 2010c, USDA Forest Service 2015).

River segments are classified as wild, scenic, or recreational based on the level of development and access along the river corridor. Wild segments are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. Scenic segments are also free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads. Recreational segments are readily accessible by road or railroad, may have some development along their shorelines, and may have undergone some impoundment or diversion in the past.

There are both designated and eligible wild and scenic river segments on Coconino NF (table 8).

Table 8. Designated and eligible wild and scenic river segments on the Coconino NF

Category	River/Segment	Total Segment Length* (miles)	Classification
Designated	Verde River	2.6	Wild
Designated	Verde River	18.4	Scenic
Designated	Fossil Creek, Segment 1	7.7	Recreational
Designated	Fossil Creek, Segment 2	9.6	Wild
Eligible	Barbershop Canyon	13.5	Wild
Eligible	East Clear Creek	38.6	Scenic
Eligible	Leonard Canyon	23.5	Recreational
Eligible	Oak Creek, Segment 1	13.2	Recreational
Eligible	West Fork of Oak Creek	10.5	Wild
Eligible	Sycamore Creek	4.1	Wild
Eligible	Upper Verde River, Segment 4	6.7	Recreational
Eligible	West Clear Creek, Segment 1	32.6	Wild
Eligible	West Clear Creek, Segment 2	6.3	Scenic
Eligible	Wet Beaver Creek, Segment 1	13.6	Wild
Eligible	Wet Beaver Creek, Segment 2	5.0	Recreational

*Distances are within the administrative boundary of the Coconino NF. Some reaches within the administrative boundary may not be located on lands managed by Coconino NF.

Each congressionally designated wild and scenic river is required to have a comprehensive river management plan. The comprehensive river management plan establishes the river corridor boundary; includes detailed descriptions of the outstandingly remarkable values; and addresses goals and desired conditions, development of lands and facilities, user capacities, water quality, instream flow, and monitoring strategy. It may also include plan components (desired conditions, objectives, standards, guidelines, and monitoring). These plan components are equivalent to and have the same weight as direction in this plan.

Designated Wild and Scenic Rivers

Fossil Creek Wild and Scenic River Segment 1 and Segment 2

Fossil Creek Wild and Scenic River was designated by Congress in spring 2009. This designation included approximately 17.3 miles from the confluence of Sand Rock and Calf Pen Canyons to the confluence with the Verde River. The river is managed jointly by the Tonto and Coconino NFs.

The Fossil Creek Wild and Scenic River is currently managed under a comprehensive river management plan (CRMP) developed by the Coconino and Tonto NFs. The Fossil Creek Wild and Scenic River CRMP was approved and signed on October 1, 2021. The specific management direction for Fossil Creek from its plan is added as Appendix G of this Coconino Forest Plan.

Verde Wild and Scenic River

The Verde Wild and Scenic River was designated by the Arizona Wilderness Act of 1984 (P.L. 98–406) on August 28, 1984. Beginning south of Camp Verde at Beasley Flat, the Verde Scenic River flows for approximately 18 miles, where it connects with the Verde Wild River west of Ikes Backbone and north of the confluence with Fossil Creek. The Verde Wild River then flows for 2.6 miles until it reaches the southernmost point of the Coconino NF. The segment then continues off-forest for an additional 19.6 miles into the Tonto NF. The wild and scenic river designation applies to both sides of the river and generally totals one-half mile wide (one-quarter mile on each side of the river). The area overlaps with a portion of Mazatzal Wilderness.

The Verde Wild and Scenic River is currently managed under a comprehensive river management plan developed by the Coconino, Prescott, and Tonto NFs.

Eligible Wild and Scenic Rivers

Barbershop Canyon

Barbershop Canyon is a 13.5-mile-long segment that starts near the Mogollon Rim and runs to the confluence of East Clear Creek. This segment has been identified as potentially eligible for inclusion in the National Wild and Scenic Rivers System under the wild classification. This segment has outstandingly remarkable values in the form of fish habitat and scenery.

East Clear Creek

East Clear Creek is a 38.6-mile-long segment that starts at the crossing of Forest Road 96 and runs northeast to the forest boundary. This segment has been identified as potentially eligible for inclusion in the National Wild and Scenic Rivers System under the scenic classification. This segment has outstandingly remarkable values in the form of fish habitat and scenery.

Leonard Canyon

Leonard Canyon is a 23.5-mile-long segment that starts at the Knoll Lake Dam and runs to the confluence of East Clear Creek. This segment has been identified as potentially eligible for inclusion in the National Wild and Scenic Rivers System under the recreational classification. This segment has outstandingly remarkable values in the form of fish habitat.

Oak Creek, Segment 1

Oak Creek – Segment 1 is a 13.2-mile-long segment that starts at the Sterling Springs Fish Hatchery and runs until the segment reaches private land. This segment has been identified as potentially eligible for inclusion in the National Wild and Scenic Rivers System under the recreational classification. This segment has outstandingly remarkable values in the form of scenery, recreation, geology, fish habitat, riparian, and ecology.

West Fork of Oak Creek

West Fork of Oak Creek is a 10.5-mile-long segment that starts at the headwaters of the creek and runs to the confluence with Oak Creek. This segment has been identified as potentially eligible for inclusion in the National Wild and Scenic Rivers System under the wild classification. This segment has outstandingly remarkable values in the form of scenery, recreation, geology, heritage, riparian, and ecology.

Sycamore Creek

Sycamore Creek is a 4.1-mile-long segment that starts at Parson Springs and runs to the confluence of the Verde River. This segment has been identified as potentially eligible for inclusion in the National Wild and Scenic Rivers System under the wild classification. This segment has outstandingly remarkable values in the form of recreation, fish habitat, and riparian.

Upper Verde River, Segment 4

Upper Verde River, Segment 4, is a 6.7-mile-long segment that starts at the confluence with Sycamore Canyon and the Verde River and runs south to the boundary of the Prescott NF near Clarkdale, Arizona. The Coconino NF shares a boundary with the Prescott NF along 6.7 miles of this segment. This segment is administered under Prescott NF Forest Plan direction. This segment has been identified as potentially eligible for inclusion in the National Wild and Scenic Rivers System under the recreation classification. This segment has outstandingly remarkable values in the form of scenery, recreation, heritage, wildlife, fish habitat, and botany.

West Clear Creek, Segment 1

West Clear Creek, Segment 1, is a 32.5-mile-long segment that starts at the headwaters for West Clear Creek and runs west to the western boundary of the West Clear Creek Wilderness. This segment has been identified as potentially eligible for inclusion in the National Wild and Scenic Rivers System under the wild classification. This segment has outstandingly remarkable values in the form of scenery, recreation, geology, heritage, wildlife, fish habitat, riparian, and ecology.

West Clear Creek, Segment 2

West Clear Creek, Segment 2, is a 6.3-mile-long segment that starts at the western boundary of the West Clear Creek Wilderness and runs west to the Clear Creek dispersed camping area. This segment has been identified as potentially eligible for inclusion in the National Wild and Scenic

Rivers System under the scenic classification. This segment has outstandingly remarkable values in the form of recreation, heritage, wildlife, fish habitat, and riparian.

Wet Beaver Creek, Segment 1

Wet Beaver Creek, Segment 1, is a 13.6-mile-long segment that starts at the headwaters for Wet Beaver Creek and runs west to the western boundary of the Wet Beaver Wilderness. This segment has been identified as potentially eligible for inclusion in the National Wild and Scenic Rivers System under the wild classification. This segment has outstandingly remarkable values in the form of scenery, recreation, geology, heritage, fish habitat, riparian, and ecology.

Wet Beaver Creek, Segment 2

Wet Beaver Creek, Segment 2, is a 5.0-mile-long segment that starts at the western boundary of the Wet Beaver Wilderness and runs west until the segment reaches private land. This segment has been identified as potentially eligible for inclusion in the National Wild and Scenic Rivers System under the recreation classification. This segment has outstandingly remarkable values in the form of scenery, recreation, heritage, riparian, and ecology.

Desired Conditions for Designated and Eligible Wild and Scenic Rivers (see Appendix G for the Desired Conditions specific to the Fossil Creek Wild and Scenic River)

SA-WSR-DC

- 1 Designated and eligible wild and scenic river segments retain their free-flowing condition and their outstandingly remarkable values (that is, archaeological, scenic, fishery, wildlife, recreational, and botanical). Eligible classifications remain intact until further study is conducted or designation by Congress.
- 2 Activities in designated and eligible rivers and associated corridors are primarily nature-based, are consistent with the river's classification, and maintain the outstandingly remarkable values.
- 3 For designated wild and scenic rivers, roads and trails provide access consistent with the river segment classifications while protecting and enhancing the river's outstandingly remarkable values.
- 4 Educational materials and interpretation of designated and eligible wild and scenic rivers encourage widespread and common understanding of and support for values, philosophy, resources, and benefits. Consequently, residents and visitors not only appreciate and learn about wild and scenic rivers, but understand their role in protecting wild and scenic river values. This results in increased stewardship, ecological awareness, partnerships, and volunteerism.
- 5 The Verde Wild and Scenic River and associated corridor provide a variety of wildlife-based recreation opportunities. Visitors learn about native wildlife resources; understand species protection requirements and applicable laws and regulations; and are aware of the various recreation opportunities.
- 6 The Verde Wild and Scenic River offers river-related recreation opportunities that emphasize non-motorized recreation.

Guidelines for Designated and Eligible Wild and Scenic Rivers (see Appendix G for the Standards and Guidelines specific to the Fossil Creek Wild and Scenic River)

SA-WSR-G

- 1 Recreation and other activities at designated and eligible rivers and associated corridors should be managed to occur at appropriate locations and intensities to protect and enhance the free-flowing condition, and the outstandingly remarkable values, consistent with the classification.

Management Approaches for Designated and Eligible Wild and Scenic Rivers (see Appendix G for the Objectives and Management Approaches specific to the Fossil Creek Wild and Scenic River)

Collaborate with neighboring forests and agencies on the management of designated and eligible wild and scenic rivers.

Coordinate with the Arizona Game and Fish Department, U.S. Fish and Wildlife Service, and the statewide Native Fish Conservation Team regarding maintenance of habitat for listed and native species, including the identification of refugia and the establishment or removal of fish barriers for management of native fish.

National Trails

See appendix A, map 2.

General Description and Background for National Trails

There are three national trails on the Coconino NF: the Arizona National Scenic Trail, General George Crook National Recreation Trail, and Wilson Mountain National Recreation Trail.

National Scenic Trails and National Recreation Trails are authorized under the National Trails System Act of 1968 (Public Law 90-543). These trails provide for increasing recreation needs for an expanding population and promote public access, travel and enjoyment of open-air outdoor areas of the Nation. Trails are established near urban areas and within scenic areas in more remote locations.

National Scenic Trail is a designation for protected areas that consist of trails of particular natural beauty and are designated by an act of Congress. These are extended trails that provide for maximum outdoor recreation potential and to promote the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the lands through which such trails may pass. A National Scenic Trail is to be managed to provide for its nature and purposes. Activities that would substantially interfere with the purposes for which the trail was designated should be avoided to the extent practicable (16 U.S.C. 1246). The overarching management direction for a National Scenic Trail is outlined in the Comprehensive Plan prepared for the trail. Motorized vehicle use by the general public is prohibited on National Scenic Trails, unless such use is consistent with the applicable policy set forth in the Comprehensive Plan. In general, established motorized uses, both summer and winter, are allowed to continue, but new motorized uses will not be designated on the trail.

National Recreation Trails provide a variety of outdoor opportunities in or near urban areas. The Secretary of Agriculture may establish and designate national recreation trails.

Connecting or side trails provide additional points of public access to national recreation and national scenic trails or provide connections between these trails.

The San Francisco Peaks RNA preserves the characteristics of the transition zone between mixed conifer and alpine tundra with populations of bristlecone pine.

This plan proposes two new RNAs: West Clear Creek and Rocky Gulch, and a proposed expansion of the existing San Francisco Peaks RNA. The 1,007-acre West Clear Creek proposed RNA is an example of riparian communities associated with hanging gardens and springs in a steep canyon setting. The 926-acre Rocky Gulch proposed RNA is an example of old-growth ponderosa pine, and it is a control for research in the Beaver Creek watershed. The 141-acre proposed expansion to the east of the San Francisco Peaks RNA is an example of alpine tundra, a rare feature in the Southwestern Region.

Botanical and geological areas are designated for a special feature such as a rare plant community or exemplary geological formation. There are five botanical areas and two existing geological areas.

The 1,209-acre Verde Valley Botanical Area preserves a unique, limestone-dependent desert community containing the federally endangered Arizona cliffrose and an assemblage of other endemic plants.

The 339-acre Mogollon Rim Botanical Area preserves a representative portion of a white fir/bigtooth maple community. This community represents a unique vegetation community in Arizona and is found only at a few locations along the Mogollon Rim.

The 24-acre Fossil Springs Botanical Area preserves a highly diverse riparian deciduous forest associated with a large and complex spring system and travertine geology.

The 186-acre Fern Mountain Botanical Area preserves a unique high-elevation riparian scrub community dominated by Bebb's willow. This is one of the southernmost extents of this community.

The 1,201-acre Red Mountain Geological Area preserves the exposed and eroded internal structure of a symmetrical cinder cone within the San Francisco Peaks volcanic field.

The 763-acre Cottonwood Basin Geological and Botanical Area preserves cone-shaped geological formations that developed from physical and chemical weathering of fumeroles (old gas vents) in the Towel Creek Tuff. Towel Creek Tuff is volcanic ash deposited in Cottonwood Basin by the Hackberry Volcano 8 million years ago. The Cottonwood Basin Botanical Area preserves botanical diversity that is associated with the tuff, and that is approximately three times greater than typical semi-desert grassland. The area also contains a perennial spring. The designation of the Cottonwood Basin Geological and Botanical Area will be final with the signing of the Record of Decision associated with this plan.

Desired Conditions for Established and Proposed Research Natural Areas and Designated Botanical and Geological Areas

SA-RNABotGeo-DC

Established and Proposed Research Natural Areas

- 1 Established and proposed research natural areas have excellent examples of the ecological features for which they were designated, with little evidence of human activity or

disturbance. Visitor access and use occurs at levels that maintain the research, education, and biodiversity values of the established and proposed RNAs.

- 2 Established and proposed research natural areas function as reference areas to study natural ecological processes and as baseline areas for measuring long-term ecological change. Natural conditions and processes are maintained.
- 3 Genetic diversity in established and proposed research natural areas is preserved and maintained.
- 4 Established and proposed research natural areas provide opportunities for research, study, observations, monitoring, and for those educational activities that do not modify the conditions for which the areas were established.

Designated Botanical and Geological Areas

- 5 The unique characteristics of botanical and geological areas are protected and maintained. The inherent physical and biological processes of botanical areas and geological areas are sustained, and not negatively impacted from human activities or permitted uses. Natural processes continue to shape and define the unique features, characteristics, and formations of these areas.
- 6 Botanical areas and geological areas provide opportunities for study, monitoring, and interpretation.

Objectives for Established and Proposed Research Natural Areas and Designated Botanical and Geological Areas

SA-RNABotGeo-O

- 1 Within 2 years of plan approval, prepare establishment reports for Rocky Gulch, West Clear Creek, and the eastern expansion of the San Francisco Peaks RNAs.

Standards for Established and Proposed Research Natural Areas and Designated Botanical and Geological Areas

SA-RNABotGeo-S

- 1 Overnight camping and recreation campfires are prohibited in established RNAs.
- 2 Prohibit permitted commercial tours except in support of approved research or education in established RNAs.

Guidelines for Established and Proposed Research Natural Areas and Designated Botanical and Geological Areas

SA-RNABotGeo-G

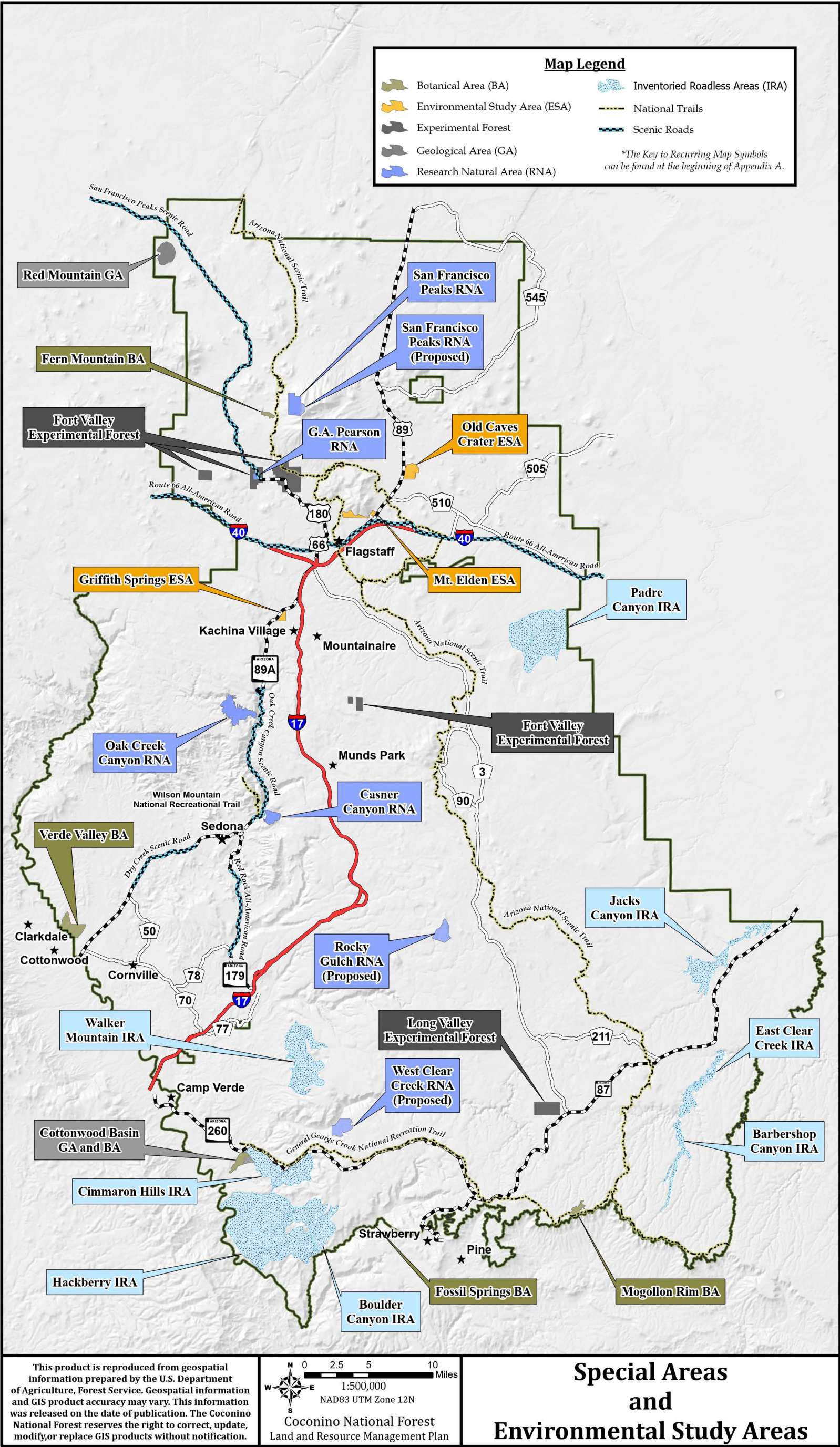
- 1 To support the area's purpose, human activities, permitted uses, and types and levels of access should be managed to protect the uniqueness and/or ecological condition of these special areas, and the values for which they were designated, established, or proposed.

- 2 In established and proposed research natural areas, fire management activities should be designed and implemented to mimic natural fire processes and should be compatible with ongoing research.
- 3 Fire should be managed using minimal impact suppression tactics or other appropriate suppression tactics to protect the resources for which research natural areas, botanical areas, and geological areas were designated, established, or proposed.
- 4 Allotment management plans should have provisions to protect the uniqueness and/or ecological condition of these designated, established, or proposed special areas that occur within an active grazing allotment.
- 5 Special use permits should be designed and implemented to retain the values for which the research natural area was established or proposed and to ensure that the area continues to function as a reference area to study natural ecological processes and as a baseline area for measuring long-term ecological change.
- 6 A permit should be required for noncommercial groups greater than 25 persons in Casner RNA and greater than 12 persons in the Oak Creek Canyon RNA to retain the values for which the research natural area was established or proposed and to ensure that the area continues to function as a reference area to study natural ecological processes and as a baseline area for measuring long-term ecological change.
- 7 Access within the Cottonwood Basin Geological and Botanical Area should be managed to limit access to foot traffic to protect the unique geological features, plant community, and ecology for which the area was designated.
- 8 Collection of rocks in geological areas should be only for approved scientific purposes and carried out under the appropriate authorization (such as a permit or agreement) to preserve the unique geological formations and to maintain the values for which the area was designated.
- 9 Access within the Red Mountain Geological Area should be limited to non-motorized recreation to protect the unique geological formations and other values for which the area was designated.

Management Approaches for Established and Proposed Research Natural Areas and Botanical and Geological Areas

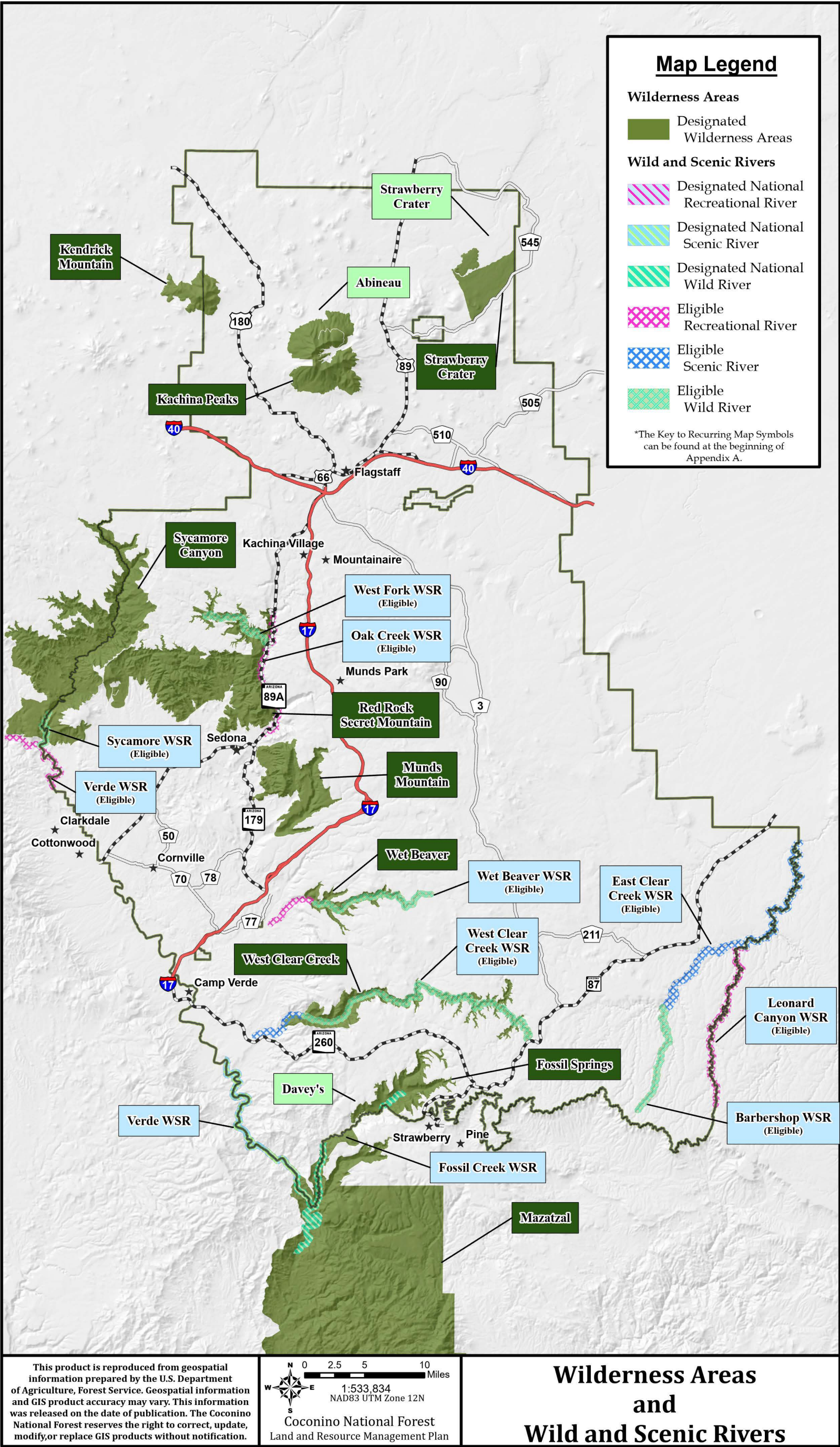
Following plan approval, proposed RNAs will be evaluated by a regional committee. After compiling the necessary documentation, if this committee does not recommend that the Regional Forester and Station Director establish any proposed RNA or proposed addition, then these plan components will no longer apply to the proposed areas.

Encourage partnerships with interested parties to provide interpretation and monitoring for botanical areas and geological areas.



Map 2. Special Areas and Environmental Study Areas

Coconino NF Amendment #1 11/13/2023



Map 3. Wilderness Areas and Wild and Scenic Rivers

Coconino NF Amendment #1 11/13/2023

Appendix G. Management Direction for the Fossil Creek Wild and Scenic River (from Chapter 3 of the Fossil Creek Comprehensive River Management Plan)

This appendix provides the management direction that must be followed when managing the Fossil Creek Wild and Scenic River (WSR) special area. Management direction includes desired conditions, standards, guidelines, objectives, and management approaches for Fossil Creek's river values and other resources and uses occurring in the area. This management applies to all future projects and activities within the Fossil Creek WSR special area. Additional information about Fossil Creek's WSR designation, river values, user capacity, and monitoring can be found in the Comprehensive River Management Plan (CRMP).

Special areas are identified and managed to maintain their unique special character or purpose and may be designated by statute or administratively. The Fossil Creek CRMP establishes a formal boundary for the Fossil Creek WSR special area (figure G-1). This boundary coincides with the Fossil Creek WSR corridor described in Chapter 1 [of the CRMP] and includes approximately 5,192 acres.

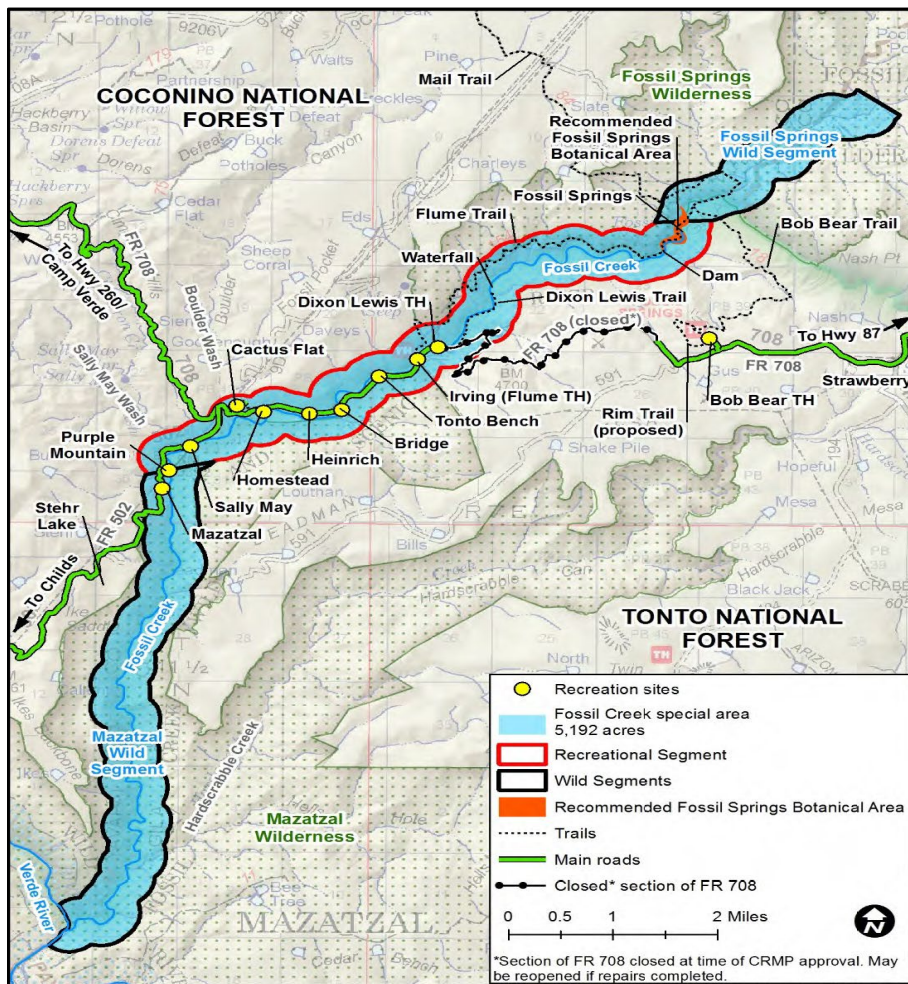


Figure G-1. Fossil Creek special area boundary

In addition to the management direction included in this appendix, forest-wide Coconino and Tonto forest plan components and management direction in the Verde Valley Management Area (in the Coconino Forest Plan) apply to the Fossil Creek WSR special area. When plan components conflict, the more restrictive plan components generally prevail. A project- or activity-level evaluation, however, may be required to resolve the conflict. For those portions of the Fossil Creek WSR corridor that overlap with the Verde WSR corridor,¹ the Verde WSR CRMP direction prevails, in order to ensure management continuity of the Verde WSR corridor.

While some direction applies generally across the corridor, most is organized by resource area or use. Most management direction applies both to the recreational segment and the two wild segments. When direction applies only to the wild segments or recreational segment, this is noted in **bold text**.

General Management Direction

Desired Conditions

SA-WSR-Fossil-DC

- 1 The character and integrity of Fossil Creek and the wild and scenic river corridor associated with the Wild and Scenic Rivers Act designation are maintained, with special emphasis on the protection and enhancement of Fossil Creek's river values (free flow, water quality, and outstandingly remarkable values).
- 2 Upland and riparian areas outside of recreation sites, construction footprints, and designated roads and trails are managed to serve as relatively undisturbed habitat (refugia) for wildlife, fish, and plants. In refugia areas, the effects from visitor use are so minor as to be negligible, and there is no use of heavy machinery or development of infrastructure except as needed to maintain recreation sites and designated roads and trails.
- 3 Other uses² within and around the Fossil Creek WSR corridor do not adversely impact the river values and are consistent with river segment classifications.
- 4 Activities in **wild segments** are primarily nature-based and are consistent with the characteristics that merit the wild classification.
- 5 The primary emphasis of the portion of the **recreational segment** between ¼-mile upstream of the waterfall to ¼-mile downstream of the historic dam is protection of travertine formations, riparian and aquatic habitat, and soil productivity.
- 6 A variety of recreation opportunities are available throughout the Fossil Creek corridor.

¹ The Verde WSR corridor overlaps with the Fossil Creek WSR corridor for a distance of 1/4 mile upstream of the confluence of Fossil Creek and the Verde River.

² The Interagency Wild and Scenic Rivers Coordinating Council defines "other use" as "use within a WSR corridor other than public use, such as federally authorized mining, forestry, grazing, subsistence hunting and fishing, road use and management, administrative use for other than WSR purposes, and use on non-federal lands in a WSR corridor that have a potential to affect river values. Other use also includes any use on federal or non-federal lands that border upon or are adjacent to a WSR corridor that may substantially interfere with public use and enjoyment of river values" (IWSRCC 2018).

Recreation opportunities provide for a spectrum of river-related or river-dependent user experiences within the capacity of forest resources to support them. As population in the region continues to grow and new forms of recreation and/or use increases, recreational use does not adversely impact river values.

- 7 Constructed features, facilities, and management activities facilitate sustainability of recreation sites so that use of these sites does not adversely impact river values.
- 8 “Leave No Trace,” “Tread Lightly,” fire prevention, safe hiking practices, wildlife awareness (such as lead reduction, Be Bear Aware, Animal Inn, etc.) and archaeological resource protection principles are promoted and practiced by the visiting public.

Standards

SA-WSR-Fossil-S

- 1 River values shall not be degraded.
- 2 Monitoring is used to determine management impacts on river values and inform implementation of the CRMP, including adaptive management actions.
- 3 Forest orders are issued as necessary to protect and enhance river values and other river-related resources and protect public health and safety.
- 4 Motorized access or development that would compromise the wild classification of the wild segments are not permitted in the wild segments.

Guidelines

SA-WSR-Fossil-G

- 1 Resource protection measures³ should be applied where appropriate to minimize adverse effects of management activities to river values and other resources.

Management Approaches

Develop collaborative relationships with partners and local communities that create opportunities for volunteers and partners to work with the Forest Service to manage recreation, implement projects, provide conservation education programs, and conduct research and monitoring.

Work with local law enforcement, medical, and other relevant officials to ensure safety of visitors and to improve timely emergency access where possible.

Phased development of additional parking and visitor facilities may occur at Cactus Flat, Heinrich, and Bridge, if consistent with river value protection, to support increased visitor capacity. Improvements at other recreation sites should focus on supporting use at and sustainability of those sites. New trails for hiking, bicycling, and equestrian use may be established to enhance recreational opportunities.

³ Relevant resource protection measures (often referred to as best management practices and mitigation measures) are listed in Appendix A of the Fossil Creek CRMP.

Free Flow, Water Quality, and Water Quantity

Desired Conditions for Free Flow, Water Quality, and Water Quantity

SA-WSR-Fossil-FF-DC

- 1 Fossil Creek exists in a free-flowing condition with a natural range of flows. Flows provide optimum conditions for native fish and wildlife, travertine formation and maintenance, riparian vegetation recruitment and maintenance, and human enjoyment.
- 2 Volumes and rates of spring recharge and discharge remain robust. Stream flows, including peak flows and flood events, occur within the range of natural variability and are not affected by human disturbances. Groundwater flow paths are within their natural range of variability and continue to contribute to base surface flows in Fossil Creek.
- 3 Fossil Creek's water quality maintains Arizona Department of Environmental Quality (ADEQ) standards. Water quality is protected or enhanced to conform to the creek's classification as an Outstanding Arizona Water and to protect and enhance its outstandingly remarkable values.

Standards for Free Flow, Water Quality, and Water Quantity

SA-WSR-Fossil-FF-S

- 1 All proposals for water resources projects are subject to a Wild and Scenic Rivers Act Section 7 review process.⁴
- 2 Water quality shall be managed for non-degradation of ADEQ standards and to support Fossil Creek's designation as an Outstanding Arizona Water.
- 3 All public water systems on national forest system (NFS) lands that use groundwater shall comply with the Environmental Protection Agency's groundwater rules. Proposed wells on NFS lands or that transport groundwater across NFS lands within the river corridor shall comply with regional and national groundwater policy.

Guidelines for Free Flow, Water Quality, and Water Quantity

SA-WSR-Fossil-FF-G

- 1 Ecological processes and biodiversity of groundwater-dependent ecosystems should be protected. Adverse impacts to groundwater-dependent ecosystems should be minimized by (1) maintaining natural patterns of recharge and discharge and minimizing disruption to groundwater levels that are critical for ecosystems; (2) not polluting or causing significant changes in groundwater quality; and (3) rehabilitating degraded groundwater systems where possible. Preferential consideration should be given to groundwater-dependent resources when conflicts among land use activities occur.
- 2 Maintenance or modification of existing structures (e.g., the permanent fish barrier, gabion, and abutments of the Fossil Creek Bridge) should preserve or improve their integrity and function to protect river values. Temporary impediments to free flow, such as temporary fish barriers, should remain within the ordinary high water mark for as short a time as possible to minimize impacts to free-flow of the river.

⁴ More guidance on the Section 7 determination process can be found in the Interagency Wild and Scenic Rivers Coordinating Council technical report *Wild & Scenic Rivers Act: Section 7* (IWSRCC 2004).

- 3 Sanitary and trash facilities should be provided or other strategies should be used, where needed, to minimize impacts from human waste and trash and to protect Fossil Creek's water quality.

Objectives for Free Flow, Water Quality, and Water Quantity

SA-WSR-Fossil-FF-O

- 1 Quantify stream flows needed to protect Fossil Creek's outstandingly remarkable values and claim a federal reserved water right to protect these flows within five years of plan approval.
- 2 Block and rehabilitate trails leading to Switchback Spring within five years of plan approval.

Management Approaches for Free Flow and Water Quality

Continue to measure and record Fossil Creek's stream flow.

Secure a federal reserved water right for stream flows needed to protect Fossil Creek's outstandingly remarkable values.

Claim water rights on springs within the Fossil Creek corridor, with priority given to springs that support populations of Fossil springsnails and other sensitive wildlife species.

Seek opportunities to restore the structure and function of springs and seeps that support populations of Fossil springsnails and other sensitive wildlife species as needed.

Coordinate with ADEQ to assess, monitor, and adjust (as needed) management actions in order to meet state water quality standards.

Develop working relationships with local and state agencies with jurisdiction related to zoning of private property and/or use of groundwater and surface water.

Provide input to local and/or state planning processes that may impact Fossil Creek's water quantity, such as groundwater development to supply water to local communities.

Protect stream access by developing recreation sites and a sustainable trail system using appropriate best management practices (BMPs); in particular, designate armored (bedrock or extremely rocky surfaces) stream access points.

Increase vegetation canopy and soil litter by rehabilitating disturbed or denuded areas where recreational infrastructure, including unauthorized trails, campsites, parking lots, day use areas, and forest and spur roads, are not needed. Allow denuded areas located in stream floodplains or with sensitive resource concerns that could be negatively affected by rehabilitation activities to recover naturally.

Riparian Function

Desired Conditions for Riparian Function

SA-WSR-Fossil-RF-DC

- 1 Riparian areas and associated stream courses, wetlands, and springs in the Fossil Creek corridor are functioning properly or making improvements toward proper function and

are resilient to natural disturbances and changing climate conditions.

- 2 Stream bank stability and sedimentation levels fluctuate within natural range of variability and unplanned impacts from human use are rehabilitated.
- 3 Stream channel and bank stability are supported by native herbaceous species cover within the site's capability.
- 4 Road and trail crossings and other recreation impacts are minimized in springs, seeps, and wetlands. Where the existence of trails and roads over these areas is unavoidable, springs, seeps, and wetlands and their surrounding soil and vegetation are protected and function naturally.

Standards for Riparian Function

SA-WSR-Fossil-RF-S

- 1 An aquatic management zone (AMZ) is established 100 feet from either edge of the perennial portion of Fossil Creek.
- 2 An AMZ is established 100 feet from either edge of intermittent stream reaches (including the intermittent portion of Fossil Creek and Sally May and Boulder washes).

Guidelines for Riparian Function

SA-WSR-Fossil-RF-G

- 1 To minimize effects to riparian function, management practices within the AMZ should be planned and implemented in a manner that protects water quality, aquatic wildlife, and terrestrial and aquatic habitats.
- 2 Erosion and impaired conditions (loss of vegetation, reduced plant vigor, and impaired soils) should be reduced by removing trails from wetted soils and reducing trailing on fine, erosive soils.
- 3 Management activities and educational efforts should minimize human-caused damage to riparian trees, shrubs, herbaceous cover, and protective soil litter that may occur through trampling, rope swing construction, shelter construction, and "dead and down" and live wood collection.

Management Approaches for Riparian Function

Determine riparian function using the best available technique to assure the measurable indicators of riparian function are maintaining or making progress toward desired conditions.

Through coordination with other disciplines, restore or maintain riparian vegetation along Fossil Creek for moderating water temperature, protecting bank stability, and other important functions. Where necessary, investigate and implement cost-effective biological remediation measures to control channel erosion.

Vegetation

Desired Conditions for Vegetation

SA-WSR-Fossil-Veg-DC

- 1 A broad diversity of native plants representing all plant groups (bryophytes, ferns and

their allies, and seed plants, including grasses and other monocots, forbs, vines, shrubs, and trees) is present within site capability. Native vegetation is able to naturally reproduce. Special-status species, endemic species, and species of interest persist where suitable habitat occurs and are not negatively impacted by human activities.

- 2 The composition of native vegetation species reflects potential as defined by the Terrestrial Ecological Unit Inventory or best available information. The density and vertical and horizontal canopy cover of native woody riparian tree species increases where not already at potential capability.
- 3 Riparian vegetation is at reference conditions for structure and species composition. Outside of recreation sites or creek access areas, vegetation is not trampled and human impacts to seedling and sapling riparian woody species are minimal.
- 4 Upland and riparian vegetation prevents accelerated soil erosion and sedimentation into downstream aquatic habitat. Vegetation within the AMZ serves as a natural filter to keep sediment out of the stream, reduce soil erosion, and buffer the stream from damage.
- 5 Mesquite bosque stands support productive and diverse understory conditions and remain intact and undeveloped.
- 6 Evergreen or live oaks (species known to be present are Emory oak, *Quercus emoryi*; Palmer oak, *Quercus palmeri*; and netleaf oak, *Quercus rugosa*) occur in shrub or tree forms where conditions allow and are sustainable across the landscape. Large live oak trees provide food, roosts, and hibernation sites for wildlife and contribute to culturally important settings.
- 7 Invasive plants rarely occur in the Fossil Creek corridor, and where they exist their populations are declining or limited to regularly disturbed areas.

Guidelines for Vegetation

SA-WSR-Fossil-Veg-G

- 1 Stream vegetative cover should be managed toward potential natural vegetation outside of recreation sites, as defined by the Terrestrial Ecological Unit Inventory or best available information.
- 2 Existing invasive plant species targeted for removal should include, but are not limited to, tamarisk (*Tamarix chinensis*), giant reed (*Arundo donax*), and Himalayan blackberry (*Rubus armeniacus*).

Objectives for Vegetation

SA-WSR-Fossil-Veg-O

- 1 Obtain baseline inventory of plant species in Fossil Creek within 10 years of plan approval. When possible, obtain vouchers (or duplicates) through collection efforts and ensure they are curated in Forest Service Herbariums (either Tonto Herbarium or Coconino Herbarium).

Management Approaches for Vegetation

Encourage tree savers⁵ for hammock use.

Increase collaboration among botanists, biologists, and ecologists experienced in Arizona/Southwest floristics, rare and invasive plants, and plant systematics in order to better document the flora within the corridor; population status of the special status species, endemic species, and species of interest, including possible new, previously unknown cryptic species that may be detected through further investigation; and to better understand plants and their role in the ecology of Fossil Creek.

Soil Condition

Desired Conditions for Soil Condition

SA-WSR-Fossil-S-DC

- 1 Soil conditions in the Fossil Creek corridor support ecological function. Human-created bare areas outside of recreation sites are minimal, particularly in the AMZ and on connected upper stream terraces.

Guidelines for Soil Condition

SA-WSR-Fossil-S-G

- 1 Erosion, sedimentation into Fossil Creek, impacts to soil productivity, or other adverse impacts originating in recreation sites, roads, or trails should be mitigated through the use of BMPs, site re-design, or restoration.
- 2 If denuded or compacted areas are detected outside of recreation sites, designated trails, or roads, these areas should be evaluated for restoration, with priority given to areas that are hydrologically connected to Fossil Creek.

Geology

Desired Conditions for Geology

SA-WSR-Fossil-G-DC

- 1 Formation of travertine dams and other natural travertine features occurs at varying rates, patterns, and locations consistent with Fossil Creek's natural free flow, water quality, and water quantity.
- 2 In the travertine-dominated reaches of Fossil Creek, the deposition of travertine impounds sediments and forms terraces or dams that support a variety of submergent, floating, emergent, herbaceous, and shrubby habitat components. The presence of travertine increases the diversity of pools, riffles, glides, runs and backwaters, all of which provide an array of habitats for numerous plant, wildlife and fish species.
- 3 Travertine formations in areas with creek access recover during the lower visitor use periods if impacts to these formations have occurred.

⁵ Tree savers are straps that go around trees to minimize hammock damage to the tree bark and cambium.

Guidelines for Geology

SA-WSR-Fossil-G-G

- 1 Management activities and recreational use should limit disturbance to the relict and contemporary travertine deposits in the corridor. Recreation sites and armored creek access points should be located to limit physical disturbance of travertine and sediment inputs that affect travertine deposition rates.

Management Approaches for Geology

Collaborate with recreational user groups, particularly boaters, for stewardship, protection, user community learning, and site design planning in order to protect travertine formations and deposition.

Encourage research, including long-term studies of travertine dam formation and recreation management, to provide a basis for determining whether human disturbances are influencing travertine deposition.

Wildlife, Fish, and Aquatic Species

Desired Conditions for All Wildlife, Fish, and Aquatic Species

SA-WSR-Fossil-WFA-DC

- 1 Wildlife, fish, and aquatic species are diverse and abundant, and populations are viable where suitable habitat exists. Native wildlife, particularly special-status species, demonstrate high reproductive success rates.
- 2 Refugia from human-caused disturbance are abundant and accessible to wildlife, fish, and aquatic species.
- 3 Diminished populations of native species remain stable or increase over time to ensure population viability.
- 4 Habitat conditions contribute to the survival and recovery of listed species, allow for repatriation of extirpated species, contribute to the delisting of species under the Endangered Species Act, and contribute to keeping common native species common.
- 5 The status of special-status species is improving, contributing to recovery of these species. Special-status species populations are not adversely affected by land use or land management activities.
- 6 In Middle Fossil, stretches of relatively undisturbed habitat exist outside of recreation sites. These less-disturbed areas provide aquatic and riparian obligatory terrestrial species refugia from human disturbance. Unauthorized trails and other denuded areas do not become established between recreation sites.
- 7 Information about the consequences of introduction and spread of non-natives (plants, fish, crayfish, mussels, and diseases) is available to visitors and visitors take measures to inspect, remove, and clean equipment before entering Fossil Creek to prevent spread of exotic species. New invasive exotic species are prevented from being introduced or established in the Fossil Creek corridor through public education, signage, and law enforcement.

- 8 Known invasive species are contained, their spread is controlled, and populations are declining. Species that are the most invasive and pose the greatest threat to biological diversity, forest health, and watershed condition are eradicated. Natural population dynamics and predator-prey relationships previously damaged by non-native species are re-established, such as between native leopard frogs, garter snakes, and fish.

Desired Conditions for Wildlife

SA-WSR-Fossil-WFA-DC

- 9 Baseline conditions for major wildlife taxa (reptiles, amphibians, mammals, birds, and terrestrial invertebrates) are known.
- 10 Pollinators are diverse in Fossil Creek and food plants, larval host plants, nesting sites, and over-wintering sites are available throughout the river corridor. Fossil Creek serves as a nectar corridor connecting the Verde River corridor to the Mogollon Rim.
- 11 Human activities do not result in common black-hawk nest site abandonment. No detections of nesting mortalities or nest failures attributed to human influences occur. Black-hawks continue to have high nesting success. Native prey constitutes the majority of black-hawks' diets.
- 12 Lowland leopard frogs colonize suitable habitat,⁶ and population numbers reflect site potential. Non-native species or human activities do not contribute to population declines.
- 13 A diverse assemblage of bats is present in healthy populations, and a diversity of roosting structure is present. Disturbance of bat roosts within the river corridor is minimal.
- 14 Populations of predators (jays, ravens, grackles, skunks, ringtails), nest parasites (cowbirds), and nuisance wildlife (skunks, rodents, squirrels, and ants) do not increase as a result of garbage or human food.

Desired Conditions for Fish and Aquatic Invertebrates

SA-WSR-Fossil-WFA-DC

- 15 Fossil Creek supports a diverse assemblage of native fish and aquatic invertebrates. Species and population abundances reflect the diversity, quantity, quality, and capability of habitats in the Fossil Creek corridor.
- 16 In the **recreational segment**, stretches of relatively undisturbed aquatic habitat (refugia) exist between recreation sites. These refugia represent all types of habitat present in Fossil Creek and support the ability of native fish to successfully survive and reproduce.
- 17 Baseline conditions for fish taxa, especially imperiled taxa, are known.
- 18 New and existing instream water rights are procured or maintained to ensure enough water is available to provide for habitat needs of special-status aquatic species.

⁶ From Irving to the permanent fish barrier, crayfish are present and likely contribute to lowland leopard frogs not colonizing that section. From the permanent fish barrier downstream to the confluence with the Verde River, it is unlikely lowland leopard frogs will become established and persist due to the presence of non-native fish and crayfish.

- 19 Human-caused sources of sediment input to Fossil Creek are minimized. Sediment and ash delivery to Fossil Creek resulting from wildfire is rare.
- 20 Re-introduced populations of native fish species are self-sustaining and future re-introductions of native fish and other native species support population viability.
- 21 Non-native fish are absent in Fossil Creek above the permanent fish barrier.
- 22 Fossil Creek supports an abundant and diverse aquatic macroinvertebrate community and rare species are present within the ecosystem's capability.
- 23 State fishing rules and regulations are enforced in Fossil Creek.

Standards for Wildlife, Fish, and Aquatic Species

SA-WSR-Fossil-WFA-S

- 1 When invasive non-native fish are detected upstream of the permanent fish barrier, efforts shall occur to contain and eliminate the non-native fish.
- 2 To prevent the introduction and spread of terrestrial or aquatic pathogens or invasive plants and animals, approved methods shall be followed to decontaminate equipment (such as machinery, monitoring equipment, or footwear) that will come into contact with water or wetted soils in the Fossil Creek corridor.

Guidelines for Wildlife, Fish, and Aquatic Species

SA-WSR-Fossil-WFA-G

- 1 To minimize noise and disturbance that may result in nest abandonment or hinder reproductive success, road maintenance and other non-emergency construction and maintenance activities such as power or transmission line vegetation maintenance involving loud heavy machinery or other loud activities (such as blasting) should occur only between September 1 and March 14 to avoid the breeding season for special status nesting bird species. Refer to Appendix A for sound levels for equipment and activities. Activities in the high, very high, and extremely high range should not occur during the breeding season (March 15 through August 31).
- 2 To minimize abandonment of occupied black-hawk nests sites, a 300-yard buffer around occupied nests should be largely free from visual and aural disturbance during the breeding season (March 15-August 30).
- 3 Seasonal closures, such as of trails, roads, or portions of Fossil Creek, should be implemented as needed in order to protect rare wildlife species during critical seasons.
- 4 To limit effects to Fossil springsnail populations, known springsnail sites should be protected from human-caused disturbance.
- 5 To maintain or augment Fossil springsnail populations, springs interrupted by man-made features such as roads should be restored to the furthest extent possible and should be made compatible with Fossil springsnail survival, if springsnails are found to be present at the location of such features.
- 6 Visitation to cliff dwellings, caves, and tunnels should be discouraged to reduce disturbance to roosting bats.
- 7 To limit and eradicate invasive species populations, treatment of known populations of

highly invasive non-native terrestrial and aquatic species in the Fossil Creek corridor should continue.

- 8 The existing fish barrier should be inspected at least once a year (preferably in the fall) to ensure proper function at both base and elevated flows.
- 9 Recreation sites and new facilities within mesquite bosques should be limited to prevent habitat fragmentation for Bell's vireo, yellow-billed cuckoo, and other bosque-dependent species.
- 10 To promote refugia between recreation sites, human use outside of recreation sites, roads, and trails within the riparian area should be discouraged through natural barriers, revegetation, signage, or other actions anticipated to be effective.
- 11 Species recovery actions should be implemented for species with approved recovery plans or conservation strategies.
- 12 To augment or establish populations of native species where suitable habitat exists, re-introductions of extirpated native species should occur when scientifically supported and re-introductions are likely to be successful.

Objectives for Wildlife, Fish, and Aquatic Species

SA-WSR-Fossil-WFA-O

- 1 Obtain baseline inventory of the major wildlife taxa (reptiles, amphibians, mammals, birds, and terrestrial invertebrates) in Fossil Creek within 10 years of plan approval.
- 2 Obtain baseline inventory of aquatic invertebrate taxa (including IBI or a similar measure) with at least three surveys within 10 years of plan approval.

Management Approaches for Wildlife, Fish, and Aquatic Species

Cooperatively manage the native fishery through existing policy and agreements between the Forest Service and Arizona Game and Fish Department.

Continue cooperation with entities such as U.S. Fish and Wildlife Service, Arizona Game and Fish Department, Bureau of Reclamation, and academia to monitor species populations and habitat, identify threats, and propose adaptive management actions necessary to alleviate threats.

If invasive non-native fish are discovered in the stream above the fish barrier, collaborate with Arizona Game and Fish Department, U.S. Fish and Wildlife Service, Bureau of Reclamation, and other agencies to remove the non-native fish using timely means appropriate to the situation. This may include a rapid response using mechanical methods for isolated, small non-native populations up to a temporary barrier with piscicide treatments for larger populations of non-native fish.

Coordinate with search and rescue agencies to record the frequency and location of emergency helicopter landings in the Fossil Creek corridor. Compare landing locations to black-hawk nest sites in order to track whether emergency landings result in changes to black-hawk occupancy and/or nest success.

Through collaborative efforts with Arizona Game and Fish Department and the U.S. Fish and Wildlife Service, track re-routed flows at Irving spring, conduct surveys for Fossil springsnails in wetted areas, and evaluate opportunities to restore or create habitat for

spring snails.

Construct temporary fish barriers as needed to contain non-native fish. Treatment may include various methods such as use of piscicides or mechanical removal.

Restore denuded areas such as unauthorized roads, trails, campsites, and pullouts that have been created outside of recreation sites. Prioritize areas in the AMZ, especially denuded areas that have hydrologic connectivity with Fossil Creek. Obliterate unauthorized trails to cliff dwellings, caves, and tunnels in order to reduce disturbance to roosting bats (and archeological sites).

Traditional Cultural Practices

“The Tribe through the Elders Council has developed Four Traditional Guiding Principles used to manage our Tribal lands. The principles are based on Tribal Ecological Knowledge built from a local knowledge base through experience and observation from our Elders:

“Respect all aspects of the natural world. The base of traditional Apache culture is maintaining strong and healthy relationships with all of the elements of the natural world; with one's friends, relatives, and community; and with one's self. This requires an in-depth ecological education, whether traditional, Anglo-European, or both.

“All activities must ensure the long-term health of the natural world. The traditional guidelines governing land-management practices – such as agriculture, hunting, wild food and natural resource harvesting, and obtaining water for drinking and irrigation – emphasize minimizing impacts on the natural world, and preserving the most natural state of the land as possible. This includes, above all, ensuring the long-term health of all natural resources. In our view, we must resolve to utilize and profit from natural resources without harming them.

“All activities must benefit the entire community. We all belong to the land. All activities impact the natural world, and affect us all. We must ensure that our activities are for the benefit of all, by working openly together as a community.

“Economic activities must be broad-based and varied. Apaches have survived all kinds of extremes, both environmental and economic, by depending on a multitude of economic endeavors – even when neighbors have perished. Traditional culture emphasizes distributing economic sustenance over a broad range of practices - such as agriculture, hunting and gathering, and trading - rather than emphasizing just one. This creates a healthy buffer to environmental and economic crises.” – San Carlos Apache Tribe⁷

Desired Conditions for Traditional Cultural Practices

SA-WSR-Fossil-Trbl-DC

- 1 The corridor looks, sounds, and feels as natural and untrammelled as possible, while allowing for some concentrated recreational use and continued use of existing infrastructure at compatible locations along Middle Fossil and limited backcountry recreational use focused around the creek and adjacent banks. Trash and human waste are uncommon in the environment and do not impact the perceived traditional cultural

⁷ Letter from San Carlos Apache Tribe to Coconino National Forest, April 29, 2019.

value of sites. Use outside of recreation sites, particularly outside of the active flood channel where site density is higher, is uncommon. Overstory vegetation grows in a natural state (mesquite trees are not heavily trimmed, for instance).

- 2 To avoid cultural resource impacts, recreation use is limited to established recreation sites, system trails, and sustainable creek access areas.
- 3 Heritage resource sites remain unaffected by visitation.
- 4 The river corridor upstream and downstream of Middle Fossil appear in a natural, unmodified condition without evidence of non-system trails, human-caused denuded areas, or other evidence of recreational use.
- 5 Traditional practitioners have access to areas that provide an opportunity to practice traditional activities, such as plant gathering and ceremonies that are essential to maintaining their cultural identity and the continuity of their culture, with reasonable limitations consistent with resource protection, public safety and multiple uses by other forest users.
- 6 Forest products used for traditional practices continue to be available. Collection of culturally important plants does not negatively affect the presence and distribution of those species on the forest.
- 7 Traditional practitioners have a suitable area (such as Homestead) available for ceremonial use when requested, and access for traditional activities continues to be protected throughout the corridor. Privacy of traditional practitioners is protected through temporary or limited area closures for ceremonial uses. Traditional practitioners do not feel crowded, except possibly at developed recreation sites.
- 8 Fossil Creek provides a setting for the education of tribal youth in culture, history, and land stewardship and for the exchange of information between tribal elders and youth.

Guidelines for Traditional Cultural Practices

SA-WSR-Fossil-Trbl-G

- 1 To maintain a corridor that looks, sounds, and feels as natural and untrammled as possible, only infrastructure that helps protect and enhance river values should be constructed.
- 2 Visitation to traditional cultural sites that correlate with prehistoric and/or protohistoric activities should not result in visible changes to the site surface, such as the establishment of new trails. Direct and indirect recreational impacts to archaeological resources related to the cultural values ORV should not diminish the information potential of the resources. Soil is retained in place within site boundaries so that surface artifacts are not transported by runoff and the integrity of archaeological deposits is preserved.
- 3 Recreational access to cliffs and caves in the uplands should be restricted if necessary to protect heritage resources.

Management Approaches for Traditional Cultural Practices

Maintain open and regular communication with tribes regarding the perceived condition of traditional sites.

Develop interpretation in partnership with tribes that conveys the cultural significance of Fossil Creek to visitors and fosters a public interest in cultural resource preservation.

If recreational use near traditional sites becomes a concern of tribes, improve interpretation to encourage responsible recreational use in sensitive areas, increase management presence, support additional tribal presence through volunteerism or partnerships, or consider adjusting the amount, duration, or type of the recreational use occurring near sites where this concern exists.

Heritage Resources

Desired Conditions for Heritage Resources

SA-WSR-Fossil-Hrtg-DC

- 1 Prehistoric, historic, and traditional/sacred places are protected and preserved. Consultation with affiliated tribes continues.
- 2 Subsurface archaeological deposits remain intact and aspects of integrity (location, design, setting, materials, workmanship, feeling, and association) are not degraded. Soils within site boundaries are stable and retained in place. Movement and/or loss of artifacts due to unauthorized collection, which affects site integrity, does not take place. No vandalism of cultural resources occurs.

Guidelines for Heritage Resources

SA-WSR-Fossil-Hrtg-G

- 1 Recreation, fire, and other management activities and permitted uses in the Fossil Creek corridor should employ techniques that minimize ground disturbance because of the high density of historic, prehistoric, and traditional/sacred sites.

Management Approaches for Heritage Resources

Continue consultation with the Yavapai-Apache Nation and other interested tribes to inform ongoing management of the Fossil Creek corridor.

Focus conservation and preservation efforts on sites susceptible to imminent risks or threats, or where elements are rare or unique.

Enhance heritage resources through research and partnerships. Encourage partnerships with tribal communities, volunteers, museums, and universities for documenting, preserving, interpreting, and managing sites and to evaluate and develop creative management opportunities.

Recreation

Desired Conditions for Recreation

SA-WSR-Fossil-Rec-DC

- 1 Diverse visitors, including family groups, have opportunities to engage in a variety of wild and scenic river-dependent recreation activities. Abundant opportunities exist to view, learn about and appreciate the river values of Fossil Creek. A mixture of

unstructured and managed recreation opportunities exists that is compatible with protection of river values.

- 2 The spatial and temporal distribution of visitors within the Fossil Creek corridor is consistent with the capacity of the river corridor.
- 3 Hunting and fishing opportunities are available in coordination with Arizona Game and Fish Department and do not conflict with resource protection and recreation management needs.
- 4 Most visitors are satisfied with their recreation experience. Visitors normally do not experience a sense of crowding or congestion, and do not encounter a lack of recreation opportunities. Infrastructure exists that supports the permitted number of visitors and adds to visitor satisfaction.
- 5 Wilderness character is preserved or enhanced in the two **wild segments**. These areas provide a high-quality wilderness recreational experience with outstanding opportunities for solitude, primitive and unconfined recreation, physical and mental challenge, and inspiration.
- 6 Interpretation and education support visitor understanding and appreciation of Fossil Creek's river values and stewardship of the land.

Standards for Recreation

SA-WSR-Fossil-Rec-S

- 1 Capacities for visitor uses are consistent with protection and enhancement of river values.
- 2 Group size in the **wild segments** is limited to 12 persons.
- 3 Toilets and developed camping shall be located outside of the 100-year floodplain and AMZ and away from Fossil springsnail habitat.
- 4 Dispersed campsites shall be located outside of the AMZ, except for backcountry camping where topography is limiting. Dispersed camping sites shall be located away from Fossil springsnail habitat.
- 5 Trails within the riparian area that parallel Fossil Creek and connect recreation sites shall not be constructed or adopted. The established Dixon Lewis (Waterfall) Trail is an exception.
- 6 No new trails shall be constructed to or across springs within the Fossil Creek corridor.
- 7 Except in designated locations and for emergency, permitted, or administrative use, parking is prohibited throughout the river corridor and in the vicinity of trailheads.
- 8 Motorized and mechanized vehicles, such as mountain bikes, shall remain on designated roads and trails, where such uses are authorized.
- 9 Motorized watercraft are prohibited within the Fossil Creek corridor.
- 10 Discharging a firearm is prohibited within the Fossil Creek corridor except as part of a legal hunting activity.
- 11 Campfires, stove fires, and charcoal fires (with the exception of pressurized liquid or gas

burners) are prohibited within the Fossil Creek corridor and Stehr Lake, except for tribal use.

- 12 Glass containers are prohibited within the Fossil Creek corridor.
- 13 Rope swings are prohibited within the Fossil Creek corridor.
- 14 Public motor vehicle travel on the 4-mile section of Forest Road 708 between the canyon rim east of Strawberry and the gate near the Dixon Lewis (Waterfall) trailhead is prohibited until road repair is complete and public motor vehicle use on this section of road can be managed for protection of river values.
- 15 Off-road motor vehicle use is prohibited.

Guidelines for Recreation

SA-WSR-Fossil-Rec-G

- 1 Promote, serve, and retain diversity in users, including by providing information and signage in multiple languages.
- 2 Manage portions of the corridor to provide a more remote, backcountry experience. In these areas, social encounters and evidence of human use should be more consistent with a primitive ROS setting. This guideline applies to the full **wild segments** and the **recreational segment** between 1/4-mile upstream of the waterfall to 1/4-mile downstream of the historic dam.
- 3 Within refugia areas, recreational use should be dispersed and of low intensity so that the refugia characteristics are not noticeably impacted.
- 4 Boating should be managed in a way that limits damage to travertine formations in the river corridor in the reach between 1/4-mile upstream of the waterfall to 1/4-mile downstream of the historic dam.
- 5 Recreation should be managed in a way that avoids known and potential Fossil springsnail sites.
- 6 To allow recreational opportunities in the river corridor while limiting possible adverse impacts to river values, camping in Middle Fossil and at trailheads within the recreational segment should be allowed in designated areas only once designated areas are established, except for special events authorized on a case-by-case basis.
- 7 To provide for unique recreational opportunities while minimizing potential effects to riparian vegetation, water quality, and other wildlife and botanical resources, camping in the Fossil Springs area should be allowed only at designated sites once designated sites are established.
- 8 To provide for unique recreational opportunities in a more primitive setting, dispersed camping should be allowed in the **wild segments**, beginning 1/4-mile upstream of the Bob Bear Trail (previously Fossil Springs Trail) in the Fossil Springs wild segment and 1/4-mile downstream of the Mazatzal recreation site in the Mazatzal wild segment.
- 9 Instead of building new trails, existing trails should be considered for designation where compatible with river management objectives and sustainable trail design principles can be achieved. Designated trails should be stabilized using BMPs and/or constructing

adequate drainage away from stream courses and into adjacent vegetation filter strips.

- 10 To minimize effects to soils and water quality, designated trails should be primarily located on soils with low erosion hazard, outside of the AMZ, and away from areas with special-status species concerns and heritage resources. Where they occur within the AMZ or terminate in the Fossil Creek floodplain, designated trails should be designed to terminate in armored areas and to incorporate stabilized tread or other appropriate features.
- 11 To minimize the establishment of unauthorized trails, creek access paths from parking areas and designated trails should be delineated and signed to direct visitors to areas along Fossil Creek resistant to recreational impacts.
- 12 To minimize effects to soils and water quality, unauthorized trails should be eliminated and rehabilitated, with priority placed on those that lead to denuded and compacted riparian areas or are hydrologically connected to Fossil Creek.
- 13 To minimize effects to water quality in springs and Fossil springsnails, no trails should be constructed or adopted that access upland springs.
- 14 When access or exclusive use for tribal ceremonial purposes is requested, public access should be managed or limited to areas important to the ceremonial activities.
- 15 To minimize noise and disturbance to wildlife and maintain a natural sounding and feeling environment for a unique recreational experience, no helicopter landings should occur in the corridor except for emergency and limited administrative purposes.
- 16 To minimize noise and disturbance to wildlife and maintain a natural sounding and feeling environment for a unique recreational experience, use of generators or other loud equipment should be discouraged within the river corridor except as needed for administrative purposes, particularly during the high-use season.
- 17 Temporary closures of trails or portions of Fossil Creek should be used to protect resources and public safety when hazardous conditions such as extreme heat or fire danger or wet weather are present.

Objectives for Recreation

SA-WSR-Fossil-Rec-O

- 1 Issue forest orders to facilitate implementation and enforcement of the standards for recreation within one year of plan approval.

Management Approaches for Recreation

Develop a recreation site plan that promotes consistent site design that is compatible with Fossil Creek's unique character, enhances visitor experience, and promotes protection of river values.

Determine and implement recreation fees to support management activities such as facility maintenance and operation, staffing, restoration, parking and road maintenance, monitoring, and interpretive programming in the river corridor.

Use educational messaging, management presence, and the design and distribution of roads, trails, and recreation sites to enhance river value protection and the recreational experience.

Encourage visitors to take responsibility for their actions by picking up trash, using restrooms, and parking and recreating in established recreation sites.

If needed to manage visitor capacity, managed entry (such as a permit system) may be used to restrict visitor access to the Fossil Creek corridor. When used, the duration of (whether limited to a portion of the year, certain days, or in place year-round) or locations subject to (whether in place corridor-wide or for specific sites) managed entry may be adjusted to accommodate changing resource protection or management needs.

Promote equal opportunities for all segments of the population, including youth and underrepresented groups, to recreate at and experience Fossil Creek. Tools may include, but are not limited to, making in-person or reduced cost/free permits available when permits are used and outreach to underrepresented communities.

Work with partners to overcome cultural, administrative, and financial barriers that impair equal opportunity to experience Fossil Creek.

Concentrate recreational use at designated recreation sites through site design, signage, and education.

Limit boating impacts to travertine features through education, partnerships, and collaborative site design.

Use an alert system, such as portable signs, phone hotline, social media, and internet messages, to provide visitors information on capacities, closures, and safety.

Recreation/Lands Special Uses

Special use permits authorize a variety of activities on National Forest System lands and can be divided into two broad categories: recreation and lands. Recreation special use permits authorize activities that support the Forest Service mission and meet the recreational needs of the public. These permits are a partnership between the Forest Service and private businesses to provide services such as guided activities and recreational events. Land special uses include authorizations associated with utility lines, road use, research, water resources, and related access.

Desired Conditions for Recreation/Lands Special Uses

SA-WSR-Fossil-SpecUse-DC

- 1 Recreation special use activities support protection and enhancement of river values (such as by providing a wild and scenic rivers-related educational component or services that reduce visitor impacts) and are compatible with the access and enjoyment of other visitors to Fossil Creek.
- 2 Existing utility infrastructure provides for public services and meets utility requirements for safe and reliable operations while minimizing visual impacts in the WSR corridor. Access to maintain and repair existing utilities is available.

Standards for Recreation/Lands Special Uses

SA-WSR-Fossil-SpecUse-S

- 1 Commercial filming/photography shall be limited and approved on a case-by-case basis.

- 2 Commercial filming/photography in the **wild segments** shall be consistent with Forest Service Wilderness filming policy.
- 3 Commercial recreation events within the **recreational segment** and Middle Fossil are prohibited during the high-use season and are limited during the remainder of the year and approved on a case-by-case basis. Commercial recreation events are prohibited in the **wild segments** outside of Middle Fossil year-round.
- 4 Authorizations for management of power lines and utilities shall comply with federal avian (raptor) protection guidelines.

Guidelines for Recreation/Lands Special Uses

SA-WSR-Fossil-SpecUse-G

- 1 Recreation special use permit holders should provide an educational component to their programs in Fossil Creek so clients understand the value of wild and scenic rivers and become familiar with Fossil Creek's river values.
- 2 Commercial filming/photography within the corridor should have the primary objective of disseminating information about wild and scenic rivers, river values, or other features of scientific, educational, or historical/cultural value.
- 3 Research related to wild and scenic rivers, river values, and other unique aspects of Fossil Creek should be authorized where it can further scientific knowledge or information relevant to land management goals.
- 4 To maintain scenic values, equipment used by permit holders should coincide with scenery objectives.
- 5 Group size limits should be determined based on available facilities and protection of river values.
- 6 No new communication sites should be authorized within the Fossil Creek corridor.
- 7 No new aerial utilities should be constructed within the Fossil Creek corridor.
- 8 Existing utility corridor rights-of-way within the Fossil Creek corridor should not be widened.
- 9 Management of utility corridors within the Fossil Creek corridor, such access and vegetation removal, should be performed in such a way that minimizes impacts to visitors, wildlife, and soils.
- 10 To limit effects to visitors, wildlife, scenery, and soils over the long-term, infrastructure and equipment related to research activities should be removed upon completion of data collection. Impacts from research activities should be fully restored to pre-research conditions once research is completed.
- 11 Research activities should not interfere with recreation management, opportunities, or access.
- 12 Research activities in the **wild segments** should be consistent with Wilderness values and policies.
- 13 To limit effects to visitors, wildlife, scenery, and soils while still providing for traditional cultural practices, removal of mineral materials from within the Fossil Creek corridor

should be prohibited. Free-use permits for collection of minor amounts of rock and mineral materials may be issued to tribal members for ceremonial purposes.

Objectives for Recreation/Lands Special Uses

SA-WSR-Fossil-SpecUse-O

- 1 Work with the Bureau of Land Management to pursue locatable mineral withdrawal of the **recreational segment**⁸ of the Fossil Creek corridor within 10 years of plan approval.

Management Approaches for Recreation/Lands Special Uses

Determine the suitability of future commercial services (outfitters, guides, and concessionaires) and complete an outfitter-guide needs assessment. Authorize future commercial services based on the need for services and the ability of such services to protect or enhance river values.

Use recreation special use permits to facilitate resource protection, provide livery services to address parking issues, and improve public safety.

Support research and monitoring with citizen science projects and other efforts.

Roads and Facilities

Desired Conditions for Roads and Facilities

SA-WSR-Fossil-RdsFac-DC

- 1 The arrangement and amount of roads and facilities in the Fossil Creek corridor contribute to protection and enhancement of river values.
- 2 Roads and parking areas possess adequate drainage and/or water retention features so as not to deliver excessive sediment and water into connected stream courses.
- 3 Unauthorized roads are not present in the Fossil Creek corridor.
- 4 Developed facilities, such as parking areas, welcome sites, signs, kiosks, and toilets promote a sense of place and embody a rustic appearance where feasible. Facilities promote use by a diverse array of visitors through accessibility features.

Standards for Roads and Facilities

SA-WSR-Fossil-RdsFac-S

- 1 Construction and maintenance activities in the Fossil Creek corridor shall implement BMPs and develop design features to minimize resource impacts.
- 2 Where possible given site-specific environmental constraints, all developed recreation sites shall be designed to meet accessibility requirements of the Forest Service Outdoor Recreation Accessibility Guidelines and Forest Service Trail Accessibility Guide, or similar current guidance.

⁸ The wild segments of the Fossil Creek WSR corridor are automatically withdrawn from mineral entry through designation under the Wild and Scenic Rivers Act.

Guidelines for Roads and Facilities

SA-WSR-Fossil-RdsFac-G

- 1 No new system roads should be constructed in the Fossil Creek corridor unless needed to access recreation sites, for authorized special uses, or administrative needs to protect river values.
- 2 To maintain and improve water quality, unauthorized roads in the Fossil Creek corridor should be obliterated, with priority given to roads that are hydrologically connected to streamcourses or springs.
- 3 To minimize effects to soils, vegetation, and scenery, parking lots should be designed with features to prevent overflow parking outside of designated spots.
- 4 All facilities and roads should minimize disturbance to springs and seeps.
- 5 To protect riparian vegetation and water quality and promote public safety, all facilities except signs, designated trails, and other minor improvements should be located outside of the AMZ.
- 6 Toilets should be provided to manage human waste in order to prevent water quality impacts.
- 7 To protect wildlife and minimize human-wildlife conflicts, trash receptacles should be located and designed to prevent attracting predators, nest parasites, and nuisance wildlife.
- 8 Recreation infrastructure, such as parking and campsites, should be located outside of areas with special-status species concerns or heritage resources.

Scenery

Desired Conditions for Scenery

SA-WSR-Fossil-Scenic-DC

- 1 A diversity of scenic viewing opportunities is present, where views are mostly of natural-appearing, undeveloped river and canyon settings with a few places where well-designed facilities are incorporated into the natural environment. Fish, wildlife, birds, and a diverse assemblage of native vegetation enhance scenic quality. Unique features such as the scarp of the Mogollon Rim and the travertine in formations are preserved.
- 2 The Wild and Scenic River corridor has natural-appearing scenery that promotes a unique sense of place and rustic appearance. Visitors enjoy the riverine landscape, including clear, blue-green water and travertine formations and healthy streamside vegetation in the canyon bottom and contrasting desert scrub and pinyon juniper vegetation as elevation increases.
- 3 Recreation settings and forest resources are free from human litter, graffiti and vandalism.
- 4 Recreation use occurs at designated locations and on designated trails/paths. Unwanted user-created campsites, parking pullouts, and trails are rehabilitated. Where the potential

exists, vegetation and woody debris stabilize and protect banks, edges, and shorelines of riparian areas from disturbances.

- 5 The Fossil Creek corridor is characterized by high or very high scenic integrity objectives. Visitors experience a high quality scenic landscape as seen from areas such as the Fossil Creek corridor, FR 502 and 708, and developed recreation sites and trails. One of the main attractions of this area is the natural beauty and opportunity to experience nature. Vistas to the creek are managed for high scenic quality. Native vegetation buffers are used to soften views of developed recreation areas and minimize view of development from the river corridor or roadway to the extent possible.
- 6 Invasive species are not a noticeable component of the landscape.
- 7 Communication sites and utilities are not visible from recreation sites and trails within the corridor, where possible.

Guidelines for Scenery

SA-WSR-Fossil-Scenic-G

- 1 New projects should be assessed for scenic quality impacts and be consistent with high or very high scenic integrity objectives.
- 2 Facilities should incorporate natural materials when possible and be designed to blend with the natural environment while providing critical cues to visitors. If human-made materials are used, they should use color, form, texture and scale appropriate to Fossil Creek with a rustic natural design theme. Buildings and structures should be designed to be subordinate to the surrounding landscape with an emphasis on non-obtrusive design.
- 3 Design guidelines should be developed to guide consistent design sensitive to the valued sense of place and unique character of the corridor by defining unifying architectural themes, elements and palettes for use within the corridor. Scale and context should guide development with an emphasis on rustic design principles and in support of the Forest Service image.
- 4 Regulatory and interpretive signage should be incorporated such that it causes the least visual disruption without compromising effectiveness. A unique design theme with a unifying palette of colors, fonts and architectural elements should be developed and followed.
- 5 Native vegetation buffers should be used to soften views of developed recreation areas and minimize views of development from the river corridor or roadways.
- 6 To reduce impacts to scenery, unplanned bare ground areas detected outside of recreation sites, designated trails, and roads should be rehabilitated. Rehabilitation measures should be visually unobtrusive, especially near the creek or in view of visitors.
- 7 Infrastructure used for research and monitoring should be visually unobtrusive, especially near the creek or in view of visitors.
- 8 Where existing constructed features like utilities impact scenic integrity, these features should be managed to minimize scenery impacts.
- 9 Invasive species should be treated for long term benefit to overall scenic quality.

Management Approach for Scenery

Continue to work with power companies on utility corridor management plans to minimize impacts to scenery and recreation resulting from utility corridor management.

Designated Areas

Fossil Springs Botanical Area

The Fossil Springs Botanical Area was established to protect the unique characteristics and processes of the highly diverse riparian deciduous forest in the Fossil Springs area. The Botanical Area surrounds a large and complex spring system that is the headwaters for an unusual travertine system. In order to better encompass the vegetation communities in the Fossil Springs area, the CRMP recommends and expansion of the Botanical Area. Plan components listed here, as well as those provided in the Coconino Forest Plan, apply to this expanded area. Additionally, plan components in the vegetation section above apply to the Fossil Springs Botanical Area.

Desired Conditions for Fossil Springs Botanical Area

SA-WSR-Fossil-Bot-DC

- 1 The integrity of native species and natural ecological processes is maintained in the Fossil Springs Botanical Area.
- 2 Vegetation communities and soil productivity in the Fossil Springs Botanical Area are largely free of impact from human activities.

Guidelines for Fossil Springs Botanical Area

SA-WSR-Fossil-Bot-G

- 1 Projects treating invasive plants in the Fossil Springs Botanical Area should be staggered in order to avoid excessive erosion and to allow for recovery of treated areas before additional areas are treated.
- 2 Horse camping should not be permitted within the Fossil Springs Botanical Area.

Mazatzal and Fossil Springs Wilderness Areas

Desired Conditions for the Mazatzal and Fossil Springs Wilderness Areas

SA-WSR-Fossil-Wild-DC

- 1 Ecosystems within wilderness are functioning within their historic range of variability. Other ecological features (e.g., biophysical features, geological resources, aquatic systems) are functioning properly. Native species are present and invasive plants and animals do not occur at levels that disrupt ecological functioning. Disturbances, including fire and flooding, are able to play their natural role, consistent with public health and safety concerns.

Standards for the Mazatzal and Fossil Springs Wilderness Areas

SA-WSR-Fossil-Wild-S

- 1 Any conflict between the provisions of the 1964 Wilderness Act and the 1968 Wild and Scenic Rivers Act shall be resolved in favor of the more restrictive provisions.

Guidelines for the Mazatzal and Fossil Springs Wilderness Areas

SA-WSR-Fossil-Wild-G

- 1 Proposed activities with the potential to affect Wilderness character should be evaluated using the interagency minimum requirements analysis process.

Interpretation and Education

Desired Conditions for Interpretation and Education

SA-WSR-Fossil-InterpEd-DC

- 1 Environmental education and interpretation enhance public enjoyment of Fossil Creek, help visitors learn first-hand about the natural processes and cultural features that make Fossil Creek special, and support protection and enhancement of river values. Well-designed environmental messaging instills in visitors an active stewardship ethic, builds a connection between visitors and the natural world, and instills the importance of natural areas for present and future generations.
- 2 The Fossil Creek corridor provides a setting for tribal youth education related to culture, history, and land stewardship, and for the exchange of information between tribal elders and youth.
- 3 Interpretive information in multiple languages is available at recreation sites, with topics that may include:
 - The native plants, wildlife, fish, and aquatic species and their habitats present in and around Fossil Creek, particularly special-status species such as common black-hawks, lowland leopard frogs, native fish, and Fossil springsnail. This knowledge encourages visitors to minimize disturbance of native species.
 - The impacts of disease and non-native plant, fish, and aquatic species on ecosystems and how to prevent their introduction and spread.
 - The prehistory, history, and contemporary tribal values associated with Fossil Creek. Information about archaeological site etiquette is readily available, and visitors gain an understanding of the tribal cultural history of the area, learning about tribal values and the importance of the corridor to living tribes and the need to approach Fossil Creek with respect. Information is available about the development, use, and decommissioning of the Childs/Irving power system, including how the Apache and Yavapai people were part of, and affected by, the power system.
 - Resource protection related to visitor behavior, such as wilderness self-reliance; minimizing unauthorized trails; tree protection; not feeding wildlife; Leave No

Trace; Pack-It-In, Pack-It-Out; and proper disposal of trash, human waste, ant killer, food remains, soap, oil, and other cooking wastes.

- The Wild and Scenic Rivers Act and national wild and scenic rivers system.
- Other topics related to Fossil Creek's river values and regionally-unique features, such as the Fossil Springs Botanical Area, geology/travertine, water processes, night sky, nocturnal species, wilderness, wild and scenic rivers, and Fossil Creek's designation as an Outstanding Arizona Water.
- Restoration activities and their role in promoting ecosystem function.
- The reasons for management activities, rules, and regulations and how visitors can help achieve the CRMP's management objectives.

Guidelines for Interpretation and Education

SA-WSR-Fossil-InterpEd-G

- 1 Any commercial uses (such as tours) of heritage-based sites should be limited to activities that are consistent with tribal interests, enhance the public's understanding of the resource, and protect or enhance the resource.

Management Approaches for Interpretation and Education

Develop an interpretive plan for the Fossil Creek corridor as soon as possible after plan approval.

Use interpretative signage near the travertine dam formation reaches of Fossil Creek to describe the travertine dam depositional processes and explain how travertine dams have shaped the geomorphology and biology of Fossil Creek. Travertine interpretation is meant to protect and enhance travertine as a key component of the geology river value. Collaborative relationships for stewardship, protection, user community learning, and site design planning (such as for kayak put in/take out) can be used to protect and enhance travertine formations.

Environmental education activities related to biological resources may include snorkeling/snooping, wading, fishing, scenery viewing, hiking, wildlife viewing, bird watching, plant identification, and boating.

Interpret cultural resources in partnership with the Yavapai-Apache Nation and other interested tribes.

Provide interpretation related to Forest Service-supported and citizen science projects by youth and adults.

Outfitter and guide services may augment Forest Service and tribal public education efforts.

Provide interpretation and educational messaging using various types of media and in multiple languages. Emphasize portable components and adaptability to allow for maximum flexibility of use and location. Focus interpretation and education programs around facilities such as interpretive trails, viewing platforms, displays, signs, and audio hiking tours. Scheduled public tours and outreach programs may serve as methods of public engagement.