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Arizona National Scenic Trail

Comprehensive Plan

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Executive Summary

The Arizona National Scenic Trail Comprehensive Plan is a long-term programmatic plan that fulfills the legislative requirements described in Section 5(e) of the National Trails System Act (Pub.L. 90-543, as amended) (NTSA) (see table 1). This plan is designed to provide guidance and recommendations for future actions that will be pursued through agency and unit-specific land and resource management plans; project-specific National Environmental Policy Act (NEPA) analyses; and agreements with landowners, land managers, non-governmental organizations, and volunteers. The comprehensive plan does not authorize site-specific prohibitions or activities.

The Arizona National Scenic Trail (AZNST) crosses lands under the jurisdiction of multiple Federal, State, and local agencies, as well as private lands. The goal of the comprehensive plan is to provide a uniform approach to the administration and management of the AZNST, while also recognizing the differences in management between the jurisdictions that make them unique and lends diversity to the recreation opportunities the trail provides. The comprehensive plan guides the many entities involved in trail administration and management on how to provide for the "Nature and Purposes" (chapter 3) and protect the "Trail Values" for which the trail was designated through their land management plans, projects, operations and maintenance, and other activities.

This comprehensive plan identifies that the managed uses of the AZNST are (1) hiking with an emphasis on long-distance backpacking and day hiking, (2) bicycling, and (3) pack and saddle stock use. More information on these uses is found in chapter 3 - Trail Values.

The "Nature and Purposes" statements for the AZNST were developed by drawing from the basic intent of the National Trails System Act, subsequent executive orders, elements of legislative history, and public sensing. These statements are found in chapter 3 where AZNST trail values are described.

Roles and Responsibilities

Congress identified the Secretary of Agriculture as responsible for administering the AZNST. The Secretary has delegated most administrative responsibilities to the Chief of the Forest Service, including the responsibility to approve the comprehensive plan to meet the requirements in the National Trails System Act, Section 5(e) (table 1). The Chief has delegated to the regional forester of the Southwestern Region (Region 3) responsibility to prepare the comprehensive plan (see chapter 2). The Chief of the Forest Service is responsible for approving and submitting this comprehensive plan to the Committee on Interior and Insular Affairs of the House of Representatives and the Committee on Energy and Natural Resources of the Senate (16 U.S.C.1244 (e)). Forest supervisors would be responsible for initiating NEPA analyses for trail-related forest-level projects on National Forest System lands to determine potential effects and consider any necessary mitigation measures.

In addition to the Forest Service, other federal agencies, tribes, state, county, local governments, non-governmental organizations (including the Arizona Trail Association), and private landowners will also have roles and responsibilities. Collectively, these entities serve as the stewards of the AZNST in a collaborative management model.

Collaborative Management Model

A unique cornerstone of the National Trails System Act is collaborative management among the mosaic of public and private interests relevant to long-distance trails and recognition of the contributions made by volunteers and private, nonprofit organizations who plan, develop, manage, and maintain the nation's trails. As the lead administrator for the AZNST, the Forest Service works collaboratively with many non-governmental partners, and local, state, federal, and tribal governments with land management responsibilities. The various managing agencies and landowners develop and manage segments of the AZNST on lands under their jurisdiction unless management authority has been conveyed elsewhere through agreement. Trail managers should manage the AZNST to provide for its nature and purposes and other trail values (chapter 3). A central component of the collaborative management model for the AZNST is engagement of diverse communities, with the goal of ensuring inclusive public access across all segments of the trail.

Trail Location

The AZNST was officially designated as a national scenic trail by Congress in 2009, however the majority of the AZNST was already in existence and has long been in use since its inception in the 1980s. The history and location of the trail is described in chapter 4.

Chapter 4 of the comprehensive plan introduces the concepts of the national trail planning corridor and national trail management corridor. In the context of the National Trails System Act, the national trail right-of way is the area selected for the general location of a national scenic trail or national historic trail. Throughout this comprehensive plan, and in implementation of the plan, the term national trail planning corridor will be used instead of "right-of-way."

The recommended national trail planning corridor for the AZNST is generally a minimum of one mile in width (0.5 miles on either side of the trail's congressionally designated route). The minimum width is based on the Forest Service's Scenery Management System (chapter 5) and includes the immediate foreground and foreground distance zones as the minimum area that should be included. The recommended national trail planning corridor follows the congressionally designated route as determined by the Forest Service, and partner organizations based on the legislative map (see appendix A), the legislative history of the AZNST, and agency and partner organization data (such as geospatial data for trails and roads).

The national trail planning corridor and the national trail management corridor are related but distinct concepts. The national trail management corridor for a section of a national scenic trail or national historic trail is established by the Federal managing agency through its land management planning process and policies. A corridor width greater than the minimum of one mile wide could be selected through the land management planning process to protect the relevant scenic resources in the middle ground and background for that area.

Trail relocations must be based on the results of an "optimal location review" process outlined in chapter 4. The purpose of the optimal location review is to identify the trail location that best provides for the AZNST's nature and purposes into the future and satisfies other requirements of the National Trails System Act. The optimal location review has been used successfully to guide the development of other national scenic trails, such as the Continental Divide Trail and Pacific Crest Trail.

Objectives and Practices for Trail Management

Chapter 5 addresses several of the National Trails System Act requirements related to "specific objectives and practices to be observed in management" of the AZNST. This includes trail-wide objectives, desired conditions and management practices, and several items that are more fully covered in the appendices such as, the acquisition and protection plan (appendix F), carrying capacity (appendix C) which includes limiting factors, and an adaptive management section that relies on monitoring and thresholds for managing visitor use and trail conditions (appendix D).

Any site-specific activities will follow Federal and State laws and regulations, including, where applicable, National Environmental Policy Act, Endangered Species Act, land management plan direction, and additional Tribal and State Historic Preservation Office (SHPO) consultations.

Implementation and Monitoring

Chapter 6 provides context for implementation of the plan. It emphasizes the need for collaboration across ownerships and managing agencies to implement the general and site-specific development plans outlined in chapter 5, adaptive management and monitoring of visitor use and trail conditions (appendix D), and recommended priority actions that may be undertaken within the first five years of the comprehensive plan's adoption (appendix E). The adaptive management toolbox in appendix D is intended to aid monitoring efforts so that trail management can respond to changes over time. The specific timing for implementation of these actions will depend on subsequent coordination between the Forest Service, the managing agencies, and relevant partner organizations. For all these actions, the Forest Service and other federal and state managing agencies should undertake consultation and collaboration with affected tribal nations and seek to incorporate tribal expertise and indigenous knowledge.

How to Use this Comprehensive Plan

This comprehensive plan addresses requirements outlined in Section 5 (16 U.S.C. 1244(e)) of the National Trails System Act of 1968 (Public Law 90-543 as amended) (NTSA) for the Arizona National Scenic Trail (AZNST).

Table 1. Required items in a national scenic trail comprehensive plan

Required components	Location in comprehensive plan	NTSA Reference
"…specific objectives…to be observed in the management of the trail…"	chapter 5	SEC. 5(e)(1) [16USC1244]
"specific…practices to be observed in the management of the trail…"	chapter 5	SEC. 5(e)(1) [16USC1244]
"identification of all significant natural, historical, and cultural resources to be preserved"	chapter 3 and chapter 4	SEC. 5(e)(1) [16USC1244]
"…details of any anticipated cooperative agreements to be consummated with other entities…",	chapter 6	SEC. 5(e)(1) [16USC1244]
"…detailed explanation of anticipated necessary cooperative agreements for any lands not to be acquired…"	chapter 6 appendix F	SEC. 5(e)(2) [16USC1244]
"…an identified carrying capacity of the trail and a plan for its implementation…"	chapter 5 and chapter 6 appendix C	SEC. 5(e)(1) [16USC1244]
"…an acquisition or protection plan, by fiscal year for all lands to be acquired by fee title or lesser interest."	chapter 5 appendix E appendix F	SEC. 5(e)(2) [16USC1244]
"…general…development plans including anticipated costs…"	chapter 5 and chapter 6	SEC. 5(e)(3) [16USC1244]
"…site-specific development plans including anticipated costs…"	chapter 6 and appendix E	SEC. 5(e)(3) [16USC1244]

Successful implementation of this plan will require coordination, cooperation, collaboration and partnerships among the many jurisdictions and partners associated with the Arizona National Scenic Trail.

Chapter 1. Background and Planning Framework

About this Comprehensive Plan

This comprehensive plan is a long-term programmatic plan that establishes the administrative objectives, policies, processes, and management guidance necessary to fulfill the legislative requirements for Arizona National Scenic Trail (AZNST) under the National Trails System Act (NTSA). This document is designed to provide guidance and recommendations for future actions that will be pursued through agency and unit-specific land and resource management plans, project-specific National Environmental Policy Act (NEPA) analyses, and agreements with landowners, land managers, non-governmental organizations, and volunteers. The comprehensive plan does not authorize site-specific prohibitions or activities.

About the Arizona National Scenic Trail

The AZNST stretches more than 800 miles across Arizona to connect deserts, mountains, canyons, wilderness, history, communities, and people. This nonmotorized trail showcases the State's diverse geology, vegetation, and wildlife. The route provides unparalleled opportunities for hikers, mountain bikers, equestrians and other nonmotorized trail users. The authorizing legislation (Public Law 111-11) identifies "a route of approximately eight hundred and seven miles extending from the U.S.-Mexico international border to the Arizona-Utah border, as generally the map entitled 'Arizona National Scenic Trail' and dated December 5, 2007."

Starting at the U.S. – Mexico border, the AZNST climbs and descends one "sky island" mountain range after another. It passes through wilderness areas and gains and loses thousands of feet in elevation while traversing biomes ranging from desert to alpine forest. Leaving the mountains, the AZNST continues through the Sonoran Desert and crosses the Gila River. From there it winds into some of the most rugged and beautiful country in Arizona, crossing the Superstition, Four Peaks, and Mazatzal Wilderness areas. It then passes under the Mogollon Rim on the Highline National Recreation Trail before ascending to the ponderosa pine clad Coconino Plateau. Continuing north, the route skirts the majestic San Francisco Peaks, followed by rolling hills and open ranchland, then enters pine forests again before arriving at the edge of the Grand Canyon. The AZNST's descent into the canyon takes it through billions of years of geologic history. Topping out on the North Rim, conifer forests dominate the Kaibab Plateau. This landscape eventually gives way to pinyon-juniper woodlands, and views of picturesque red cliffs and mesas as one nears the Utah border and the AZNST's northern terminus.

Historic Overview and Development of the Trail

Indigenous Homelands

Before long-distance recreational trails emerged as a 20th century phenomenon and long before the AZNST was designated as a national scenic trail, the areas the AZNST now passes through were home to many distinct indigenous nations. Indigenous oral histories and traditional stories speak of these homelands from time immemorial.

Federally recognized tribes maintain government-to-government consultation relationships with the Forest Service regarding the administration and management of the AZNST. In alphabetical order, these 21 tribes include: Ak-Chin Indian Community (Ak-Chin O'odham); Cocopah Tribe

(Kwapa); Colorado River Indian Tribes (Mohave, Chemehuevi, Hopi and Navajo); Fort McDowell Yavapai Nation (Abaaja); Fort Yuma Quechan Indians, Gila River Indian Community (Akimel O'odham); Havasupai Tribe (Havasuw `Baaja); Hopi Tribe (Hopi); Hualapai Tribe (Hualapai); Kaibab Band of Paiute Indians (Kai'vi'vits); Navajo Nation (Diné); Paiute Tribe of Utah (Cedar Band -Suh'dutsing; Indian Peaks - Kwee'choovunt; Knosh – *Kawnaw'os*; Koosharem – *Paw goosawd'uhmpuhtseng;* and Shivwits – *See'veets eng)* Salt River Pima-Maricopa Indian Community (Onk Akimel O'odham and Xalychidom Piipaash); San Carlos Apache Tribe (Ndé); San Juan Southern Paiute Tribe (Kwaiantikowkets); Tohono O'odham Nation (Tohono O'odham); Tonto Apache Tribe (Te-go-suk); White Mountain Apache Tribe (N'dee); Yavapai-Apache Nation (Wipuhk'a'bah and Dil'zhe'e); Pascua Yaqui Tribe (Yoeme); and Yavapai Prescott Tribe (Wipuhk'a'bah). These tribes retain active cultures and ties to the area. The Presidential Proclamation that created the Baaj Nwaavjo I'tah Kukveni- Ancestral Footprints of the Grand Canyon National Monument (monument) recognizes and incorporates the profound Tribal historical, cultural, and religious significance among the principal objects and values to be protected within the monument. Thirty-nine miles of the AZNST travel through the southern portion of the monument on the Tusayan Ranger District.

From Mexico to the Utah State Line

The majority of the AZNST was in existence and had long been in use when it became a national scenic trail in 2009. It is the result of a sustained grassroots effort to develop a statewide trail in cooperation with Arizona State Parks, Federal agencies, local governments, and the Arizona Trail Association dating back to the 1990s.

The AZNST was the dream of Dale Shewalter, a Flagstaff schoolteacher, who first envisioned a cross-state trail in the 1970s. In 1985 Dale walked from Nogales, Arizona to the Utah State line to explore the feasibility of a trail traversing the entire state. Immediately thereafter, he began traveling around Arizona giving presentations on his vision of a trail connecting communities, mountains, canyons, deserts, forests, public lands, historic sites, various trail systems, wilderness areas, and other points of interest. The idea was embraced by all types of trail users throughout Arizona, and by Arizona State Parks, Forest Service, Bureau of Land Management, National Park Service, and local governments.

Inventory work was needed to identify the existing trails, and where new trails would need to be built to connect them to traverse Arizona's diverse landscapes. In the late 1980s, Mr. Shewalter was hired by the Kaibab National Forest to be the first paid coordinator for the AZNST. The agencies, with the help of volunteers, began the work of designating, and later building, segments of the AZNST.

The Arizona State Trails Act, passed in 1989, authorized the Arizona State Parks Board to prepare a state trails plan and establish a grant fund. The passage of that Act was indicative of the State's commitment to trails and trail users (1995 Arizona Trail Management Guide, chapter 1).

An intergovernmental agreement was signed in 1993 by the Arizona State Parks Board, Forest Service, Bureau of Land Management, and National Park Service to support the development of the AZNST. Arizona State Parks initially led the effort with assistance from the Federal agencies. In 1994, the Arizona Trail Association was established as a nonprofit corporation as the primary organization supporting the development of the AZNST and the lead for coordination of the project.

In 1995, an Arizona Trail Management Guide was developed as part of an interagency Memorandum of Understanding that provided direction for the planning, development, and management of the trail as part of the State trails system. This guide included a description of a corridor for the trail.

In 2007, when much of the trail was developed and in use, the State of Arizona designated it a State Scenic Trail and established the Arizona Trail Fund (§41-511-15).

While the federal agencies and the State were engaged in developing the trail through agreements, Pima, Pinal, and Coconino Counties became involved and actively developed the trail by acquiring rights-of-way on State Trust Land to build the non-federal sections. The City of Flagstaff incorporated parts of their local trail system to become part of the AZNST. In all locations and with all levels of government, the Arizona Trail Association was a partner, providing thousands of hours of volunteer labor, coordinating, promoting, fund-raising, and sustaining the momentum needed for this monumental effort.

1995 Arizona Trail Management Guide

The Arizona Trail Management Guide was developed in 1995 under an interagency agreement between Forest Service, Bureau of Land Management, National Park Service and Arizona State Parks. It was a coordinated effort between Arizona State Parks and Federal agencies to provide a comprehensive source of information to aid in the development, management, and maintenance of the AZNST. Although the AZNST was not being considered for national trail status at the time, the management guide contains many components of a national trail comprehensive plan. The specific purposes of the trail management guide were to:

- Coordinate the Arizona Trail implementation with Federal, State, local agencies, other trail interests, and the public
- Identify the trail corridor.
- Inventory existing segments of the Arizona Trail.
- Identify Arizona Trail-related issues of statewide importance.
- Establish location criteria for use in planning the trail route.
- Establish general trail design guidelines and standards.
- Promote uniform Arizona Trail signage.
- Describe examples of successful Arizona Trail implementation efforts and assess benefits.
- Develop a timetable and action plan for completing the trail.

The trail management guide provided a framework for the development and management of the AZNST and its immediate corridor. It covered the history of the AZNST, and partnerships established for implementing the AZNST. It identified a general trail corridor suggested by local agencies and volunteers, made specific recommendations about trail alignments, and determined specific trail uses. It defined agency and volunteer roles, included issues of statewide importance, and identified potential funding and labor sources. Elements of the trail management guide, such as the historical background and the vision for the AZNST, were used in developing this comprehensive plan.

Congressional Designation

In 2009, the National Trails System Act (NTSA) was amended through the Omnibus Public Land Management Act (P.L 111- 11) to designate the Arizona Trail a national scenic trail, one of only 11 in the nation. The requirement to produce a feasibility study to support national scenic trail designation was waived in the case of the AZNST. Because the majority of the AZNST is on National Forest System Lands, the Forest Service was designated the administering agency to provide coordination and guidance for the trail system. The national scenic trail designation placed a higher level of responsibility upon the land managing agencies to protect the nationally significant resources, qualities, values, and associated settings and managed uses associated with the AZNST.

Beginning as one person's vision, the final link was built and a connected route across the State was realized on December 16, 2011, and celebrated by the public and government entities who had brought it to fruition.

Planning Framework and Authorities

The National Trails System Act established national scenic trails as…

> "…extended trails so located as to provide for maximum outdoor recreation potential and for the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the areas through which such trails may pass. National scenic trails may be located so to represent desert, marsh, grassland, mountain, canyon, river, forest, and other areas, as well as landforms which exhibit significant characteristics of the physiographic regions of the Nation."

The AZNST traverses lands under the jurisdiction of multiple Federal, State, and local agencies. The Secretary of Agriculture has delegated administrative authority for the AZNST to the Chief of the Forest Service. The Chief has decision-making authority for the comprehensive plan and the regional forester is responsible for the preparation of this plan and submitting it the Chief for approval (Forest Service Manual [FSM] 2300). The goal of the plan is to provide a uniform approach to the administration and management of the AZNST, regardless of the many underlying jurisdictions. Components of the comprehensive plan reflect the nature and purposes of the AZNST and protect the values for which the AZNST was designated, while also recognizing the differences in management between the jurisdictions that makes them unique and leads to a diverse trail experience.

The comprehensive plan works in concert with local land management plans to provide guidance for managing the AZNST. Determination of the need to change individual agency land management plans will depend on agency specific laws, regulations, and policies as well as the compatibility of existing land management plans with the comprehensive plan. Any needed changes to land management plans will be addressed by the appropriate land managing agencies upon completion of this comprehensive plan in accordance with their own directives.

National Trails System Act and Other Authorities

National Trails System Act of 1968

The National Trails System Act (Public Law 90-543 as amended) established the national trails system "to provide for the ever-increasing outdoor recreation needs of an expanding population and to promote the preservation of public access to, travel within, and enjoyment and appreciation

of the open air, outdoor areas and historic resources of the Nation." The national trails system includes national scenic, historic, and recreation trails. These trails are comprised of not only physical trails, but are also linear landscapes that contain resources, qualities, values, and associated settings important to the nature and purposes of the trails.

Comprehensive plans for national scenic trails provide purpose and guidance based on the National Trails System Act. Section 5 (16 U.S.C. 1244) of the National Trails System Act requires the lead Federal agency for each national scenic trail or national historic trail named in subsection (e)[1] to develop a comprehensive plan for the acquisition, management, development, and use of the trail, including but not limited to:

- Specific objectives and practices to be observed in the management of the trail, including the identification of significant natural, historical, and cultural resources to be preserved (16 U.S.C. 1244 (e)(1))
- Details of any anticipated cooperative agreements to be consummated with other entities (16 U.S.C. 1244 (e)(1))
- An identified carrying capacity and plan for its implementation (16 U.S.C. 1244 (e)(1))
- An acquisition or protection plan, by fiscal year, for all lands to be acquired by fee title or lesser interest, along with detailed explanation of anticipated necessary cooperative agreements for any lands not to be acquired (16 U.S.C. 1244 (e)(2))
- General and site-specific development plans including anticipated costs (16 U.S.C. 1244 (e)(3))

Table 1 identifies the location of each of these requirements in this comprehensive plan. There are additional requirements for national scenic trails described in the National Trails System Act. These requirements include provisions on connecting and side trails, administration and development, selection of a **national trail right-of-way**[2], cooperative agreements, and volunteer assistance. These requirements will be addressed as appropriate throughout this comprehensive plan.

Executive Order (EO) 13195, Trails for the 21st Century

Executive Order 13195 was signed by President Clinton on January 8, 2001, with the intent of furthering the purposes of the National Trails System Act and other statutes related to establishing and operating the National Trails System. Among other important components, EO 13195 identifies the need to protect trail corridors surrounding national scenic trails to preserve the values for which each trail was established.

Other Federal Laws, Regulations, Executive Orders and Presidential Memoranda

In addition to the National Trails System Act, other federal laws apply to trail management. All trail resources must be managed in compliance with legal and policy requirements intended to protect the nation's natural and cultural heritage and opportunities for the enjoyment of that

[1] Sec. 5(e) applies to most national scenic trails, including the AZNST. Two national scenic trails (the Continental Divide and North Country National Scenic Trails) and all national historic trails fall under Sec. 5(f).

[2] As discussed in chapter 4, in this comprehensive plan and its implementation, this will be referred to as the "national trail planning corridor."

heritage. The principal laws, regulations, executive orders, and other authorities for administration of National Forest System trails, including national scenic trails administered and managed by the Forest Service, are identified in agency directives in Forest Service Manual (FSM) 2300 – Recreation, Wilderness, and Related Resource Management, Chapter 2350 – Trail, River, and Similar Recreation Opportunities (FSM 2353.01a-d). Agency directives and other authorities may be subject to change in the future and subsequently could impact the administration and management of the AZNST.

Relationship between the Comprehensive Plan, Agency Land Management Plans, and Special Area Plans

This long-term, programmatic comprehensive plan is designed to provide guidance and recommendations for future actions that will be pursued through agency land management plans, project-specific environmental analyses, and agreements with landowners and land managers. This plan was developed under the authority of the National Trails System Act.

The comprehensive plan works in concert with local land management plans to provide guidance for management of the AZNST; however, it does not replace or supplant land management plans. The relevant land management plan(s) continue to apply to the AZNST and the lands around it. The comprehensive plan and federal land management plan(s) must be compatible[3]. Together, they inform project planning as well as day-to-day trail management and operations.

- A **land management plan** addresses management of the land (including the trail and the land around the trail) within the area in which the land management applies, such as a specific national forest, national park, or Bureau of Land Management (BLM) district.
- The **comprehensive plan** addresses administration and management of the entire AZNST, across jurisdictions.
- A **project plan** addresses a specific project or activity that supports implementation of the direction contained in both the land management plan and the comprehensive plan. Examples of project plans might include plans to realign a section of trail to reduce resource impacts, construct a new parking area to improve access, or treat vegetation to preserve or enhance views.

Each land management agency is responsible for planning and developing the AZNST in a way that harmonizes with other authorized land uses while ensuring the AZNST and its resources, qualities, values, associated settings, and uses are not degraded.

Federal Land and Resource Management Plans

Executive Order 13195 (Trails for America in the 21st Century, 2001) requires federal agencies to

> "… protect, connect, promote, and assist trails of all types… This will be accomplished by… protecting the trail corridors associated with National Scenic Trails… to the degrees necessary to ensure that the values for which [the] trail was established remain intact."

[3] Determining the need to change individual agency land management plans will depend on agency-specific laws, regulations, and policies as well as the compatibility of existing land management plans with the comprehensive plan. Any needed changes to land management plans will be addressed by the appropriate managing agencies upon completion of this plan in accordance with their own directives.

All land management direction applied to an identified corridor associated with the AZNST must be determined through local land management planning processes under the appropriate laws and policy. BLM Manual 6250 and 6280, Forest Service Handbook (FSH) 1909.12 chapter 20 and Forest Service Manual (FSM) 2353 guide the agencies in incorporating national scenic trails in land management planning at the local level. For National Park Service see Management Policy 9.2.2.7 and Director's Order Number 45.

Forest Service Land Management Plans

The AZNST crosses four national forests, each of which have a land management plan in place in accordance with the National Forest Management Act 1976 (P.L. 94-588). The forests and the dates for plan revisions are Coronado (2018), Coconino (2018), Kaibab (2014), and Tonto (2023). All four land management plans include specific management direction for the AZNST.

Forest plans must reference the identified national trail right-of-way[4] (see chapter 4), if established, or otherwise may identify a corridor or geographic area around the trail, or use other means to identify where trail management direction applies (FSH 1909.12, chapter 20, section 24.43(1)(b)). Land management plan components must provide for the management of the national trail right-of-way and for the nature and purposes of the trail. Plan components should be compatible with the objectives and practices identified in this comprehensive plan, including the identification of resources to be preserved and the trail's carrying capacity (FSH 1909.12 section 24.43 (b), (c), (e)). After this comprehensive plan is complete, the AZNST administrator will work with each national forest to identify any changes to forest plans that may be needed for compatibility with the comprehensive plan and to provide for the nature and purposes of the AZNST.

Bureau of Land Management Resource Management Plans

The AZNST crosses two BLM management units. Each field unit has a resource management plan, in accordance with the Federal Land Policy and Management Act (43 U.S.C. 1712): the Arizona Strip Field Office Resource Management Plan (2008) and the Phoenix Resource Management Plan (1988).

The **national trail right-of-way**[5] is a key consideration in establishing a national scenic trail management corridor in resource management plans. BLM Manual 6280 guides the agency in establishing national trail management corridors, and in inventorying national trail resources, qualities, values, and associated settings for consideration in project analyses, whether or not the national trail right-of-way has been selected. BLM Manual 6280.4.1 describes multiple options for incorporating designated national trails into resource management plans, including through a resource management plan amendment or revision, or a state-wide trails management plan. The BLM will coordinate with the US Forest Service as the administering agency during land use planning that involves the AZNST.

[4] As discussed in chapter 4, the national trail planning corridor will serve as the national trail right-of-way for the AZNST.
[5] As discussed in chapter 4, the national trail planning corridor will serve as the national trail right-of-way for the AZNST.

National Park Service Foundation Documents and Management Plans

The AZNST crosses four National Park Service units, each of which has a general management plan or foundation document[6]. These planning documents include Grand Canyon National Park General Management Plan (1995), Grand Canyon National Park Foundation Document (2017), Walnut Canyon General Management Plan (2007), Walnut Canyon Foundation Document (2015), Coronado National Memorial General Management Plan (2004), Saguaro National Park General Management Plan (2008), Saguaro National Park Foundation Document (2014) and Saguaro National Park Comprehensive Trails General Management Plan (2009), and Rincon Mountain Wilderness and Saguaro Wilderness Plan (1992). Agency-wide direction for managing national trails can be found in Management Policy 9.2.2.7, Reference Manual #45 National Trails System, and Director's Order #45. The NPS will coordinate with the US Forest Service as the administering agency during land use planning that involves the AZNST.

Other Designated Areas Plans

The AZNST passes through various special areas designated by Congress, the President (Executive Order), or recognized by entities for their special characteristics and the opportunities they offer. These designated areas include national scenic and historic trails, a national monument, a corridor preservation program, wilderness areas, and other special management areas (research natural areas, wildlife management areas, and an experimental forest). Management of the AZNST will be compatible with federal planning documents for these and other future designated areas where the trail intersects them.

Congressionally Designated National Scenic and Historic Trails

On January 5, 2023, Congress amended the National Trails System Act, and designated the Butterfield Overland Trail as a national historic trail. It crosses the AZNST near Tucson within Pima County's Cienega Creek Preserve. The Trail encompasses the Butterfield Overland Mail route that operated between the eastern termini of St. Louis, Missouri and Memphis, Tennessee, and the western terminus of San Francisco from 1858 to 1861. A Butterfield station was formerly located near the AZNST route through Pima County's Cienega Creek Natural Preserve, and the potential exists for interpretation. At the time of this writing, the Butterfield Overland National Historic Trail is the only other Congressionally designated component of the National Trail System that intersects the AZNST.

In recognition of the significance of Route 66 to America's heritage, Congress passed an Act in 1999 (reauthorized in 2009) to create the Route 66 Corridor Preservation Program. Administered by the National Park Service, National Trails Intermountain Region, the program preserves the special places and stories of this historic highway. AZNST Passage 33 (Flagstaff Urban Route) crosses Route 66 north of Interstate 40 as it winds through McMillan Mesa and north through Flagstaff. Passage 32 (Elden Mountain) comes in close proximity to Route 66 north of I-40, between San Francisco Wash and Forest Road 510E.

Public Law 101-400, enacted in 1990, authorized the National Park Service to study options for preserving and commemorating the nationally significant Route 66. As part of this broad review of options, the National Park Service also conducted a feasibility study that determined that Route 66 met the criteria for designation as a National Historic Trail. Congress, however, declined to

[6] Foundation documents present a shared understanding of the purpose, significance, fundamental resources and values, desired conditions, primary interpretive themes, and special mandates for each unit.

designate Route 66 as a National Historic Trail at that time, and opted instead to create the Route 66 Corridor Preservation Program. In 1991 H.R. 3600, the Route 66 National Historic Trail Designation Act was introduced. Recent public support for National Historic Trail status is substantial (National Park Service statement before the House Natural Resources Subcommittee concerning H.R. 3600).

Wilderness

The AZNST crosses seven wilderness areas with 117 miles of its length lying within designated wilderness (See maps in appendix A). The management of the AZNST must be compatible with wilderness management direction.

Table 2 lists the seven wilderness areas within the national trail planning corridor, the total acreage of each wilderness area, and the number of miles of trail that pass through each wilderness area. It also identifies by name the trail passage section or sections and identifies the federal agency that has jurisdiction for the trail within that wilderness.

Table 2. Designated wilderness

Wilderness	Acres	Miles of Trail	Trail Passage Number and Name	Jurisdiction
Miller Peak	20,238	11.6 miles	1 - Huachuca Mountains	Forest Service Coronado National Forest
Saguaro	70,905	15.3 miles	8 – Rincon Valley	National Park Service Saguaro National Park
Rincon Mountain	36,928	2.2 miles	9 – Rincon Mountains	Forest Service Coronado National Forest
Pusch Ridge	56,919	11.6 miles	11 – Santa Catalina Mountains	Forest Service Coronado National Forest
Superstition	160,200	18.2 miles	19 – Superstition Wilderness	Forest Service Tonto National Forest
Four Peaks	60,740	10.4 miles	20 – Four Peaks	Forest Service Tonto National Forest
Mazatzal	252,500	47.4 miles	22 – Saddle Mountain 23 – Mazatzal Divide 24 – Red Hills 25 – Whiterock Mesa	Forest Service Tonto National Forest

Wild and Scenic Rivers

The Wild and Scenic Rivers Act of 1968 created the National Wild and Scenic Rivers System to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. The Wild and Scenic Rivers Act encourages river management that crosses political boundaries and promotes public participation in developing goals for river protection.

There are no designated wild and scenic rivers along the AZNST. However, within the recommended one-mile national trail planning corridor, there are approximately 11 miles of eligible wild and scenic river segments. These include Romero Canyon, Sabino Creek, East Verde River, and the Colorado River. These areas are typically managed to retain the river's eligibility and suitability for future designation. Management direction may be found in agency policy (for example, FSH 1909.12, Chapter 80, 84.3 Interim Protection Measures for Eligible or Suitable

Rivers) or the relevant land management plan(s). Where the national trail planning corridor may intersect designated or determined eligible wild and scenic river corridors in the future, the management of the AZNST must be compatible with wild and scenic river management direction.

Baaj Nwaavjo I'tah Kukveni - Ancestral Footprints of the Grand Canyon National Monument

In addition to the National Park Service-managed national monuments listed above, the AZNST also traverses 39 miles within the jointly managed (Forest Service and BLM) Baaj Nwaavjo I'tah Kukveni - Ancestral Footprints of the Grand Canyon National Monument-as established by Presidential Proclamation 10606, August 8, 2023. Baaj Nwaavjo (Baahj-Nuh-Waahv-Joh) means "where Indigenous peoples roam" in the Havasupai language, and I'tah kukveni (Ee-Tah Kook-Venny) means "our ancestral footprints" in the Hopi language. The name reflects the importance of the Grand Canyon area, to not just one, but to many tribal nations. The monument protects cultural and sacred sites that are precious to tribal nations in the Southwest. The proclamation mentions the Havasupai Tribe, Hopi Tribe, Hualapai Tribe, Kaibab Band of the Paiute Indians, Las Vegas Paiute Tribe, Moapa Band of Paiutes, Navajo Nation, Paiute Indian Tribe of Utah, San Juan Southern Paiute Tribe, Yavapai-Apache Nation, Pueblo of Zuni, and the Colorado River Indian Tribes.

The monument spans 917,618 acres of public lands managed by the Interior Department's BLM and the Department of Agriculture's U.S. Forest Service. The monument is made up of three distinct areas to the south, northeast, and northwest of Grand Canyon National Park. The 39 miles of AZNST within the monument are entirely within the southern portion of the monument, specifically on the Tusayan Ranger District, Kaibab National Forest (See appendix A, special management area and passages maps, Passage 36).

The proclamation determined the Secretary of the Interior, and the Secretary of Agriculture (Secretaries) shall manage the monument through the BLM and Forest Service, respectively, in accordance with the terms, conditions, and management direction provided by the proclamation. The Forest Service shall manage the portion of the monument within the boundaries of the National Forest System and the BLM shall manage the remainder of the monument. The lands administered by the Forest Service shall be managed as part of the Kaibab National Forest. The lands administered by the BLM shall be managed as a unit of the National Landscape Conservation System.

For purposes of protecting and restoring the objects identified in the proclamation, the Secretaries shall jointly prepare a management plan for the monument and shall promulgate such rules and regulations for the management of the monument as they deem appropriate for those purposes. The Secretaries, through the BLM and Forest Service, shall consult with other Federal land management agencies or agency components in the local area, including the National Park Service, in developing the management plan. In promulgating any management rules and regulations governing National Forest System lands within the monument and developing the management plan, the Secretary of Agriculture, through the Forest Service, shall consult with the Secretary of the Interior, through the BLM.

Special Management Areas

The AZNST crosses several special management areas within National Forest System lands, including research natural areas, wildlife management areas, and an experimental forest. These

special management areas are described below and listed by national forest. Specific management direction for these areas can be found in the respective national forest's management plan.

The AZNST also crosses National Park Service and Bureau of Land Management special management areas. Specific management direction for those portions of trail can be found in their respective agency management plans.

Coronado National Forest

- **Santa Catalina Research Natural Area**. The Nation's first research natural area which was designated for the study of flora as well as for appreciations of the outdoors and for other purposes.
- **Bighorn Sheep Management Area**: This special management area is in the Santa Catalina Mountains within the Pusch Ridge Wilderness. This area was established to maintain bighorn sheep habitat. One management emphasis for this area is to manage the risk of disease transmission from domestic sheep and goats to bighorn sheep. The use of pack goats is prohibited in this area.

Tonto National Forest

- **Picketpost Mountain Research Natural Area**. The vicinity around Picketpost Mountain contains fine examples of Sonoran Desert in many of its varied plant community associations on foothills and piedmont topography. Management of the area has been coordinated with the Boyce Thompson Arboretum and the Desert Botanical Garden. Many of the ecosystems exist under conditions that are reasonably undisturbed by man or his livestock and mining activities.

Coconino National Forest

- **Fort Valley Experimental Forest** is managed by the Rocky Mountain Research Station – under the jurisdiction of the station director and Coconino National Forest supervisor for research related to the regeneration of ponderosa pine. It was established in August 1908 as the Coconino Experiment Station, the first Forest Service research facility in the nation. The site was established after two lumbermen, the Riordan brothers, from Flagstaff, Arizona, asked the first Chief of the Forest Service, Gifford Pinchot, to determine why the area's ponderosa pine forest was not regenerating after logging.

Kaibab National Forest

- **Kaibab Squirrel National Natural Landmark.** In 1965, 278,495 acres of ponderosa pine forest within the North Kaibab Ranger District and Grand Canyon National Park were designated as the Kaibab Squirrel National Natural Landmark. This area was designated for the Kaibab squirrel and for its largely intact example of the western climax community of ponderosa pine.
- **Grand Canyon Game Preserve**. The Grand Canyon Game Preserve was established by Theodore Roosevelt in 1906 to protect game species and their habitat on the Kaibab Plateau. The Game Preserve encompasses the North Kaibab Ranger District and small portions of the Tusayan Ranger District.

Consultation, Coordination, and Collaboration with Tribes

Treaties with Tribal Nations

The government-to-government relationship between the United States and federally recognized tribes is unique and distinct from that of other interests and constituencies served by the Forest Service and the other federal agencies that have roles in administering and managing the AZNST. For the Forest Service, agency policy contained in Forest Service Manual 1500 – External Relations, Chapter 1560 – State, Tribal, County, and Local Agencies; Public and Private Organizations describes treaty rights and the federal trust responsibility:

> The United States entered into over 300 treaties with Indian tribes prior to 1871. Under these treaties, Indian tribes ceded significant portions of their aboriginal lands to the United States. Each of these treaties is unique but, generally speaking, Indian tribes reserved separate, isolated reservation homelands under the treaties and sometimes retained certain rights to hunt, fish, graze, and gather on the lands ceded to the United States. These rights retained on ceded lands are known as "off-reservation treaty rights" or "other reserved rights." … Trust responsibility arises from the United States' unique legal and political relationship with Indian tribes. It derives from the Federal Government's consistent promise, in the treaties that it signed, to protect the safety and well-being of the Indian tribes and tribal members. The federal trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal treaty rights, lands, assets, and resources, as well as a duty to carry out the mandates of federal law with respect to all federally recognized American Indian and Alaska Native tribes and villages. [FSM 1563.01b]

Tribal consultation, coordination, and collaboration is also guided by federal laws, regulations, executive orders, and other authorities, as identified in Forest Service Manual 1500 – External Relations, Chapter 1560 – State, Tribal, County, and Local Agencies; Public and Private Organizations (FSM 1563.01c).

Joint Secretarial Order on Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters

On November 15, 2021, Secretary of the Interior Deb Haaland and Secretary of Agriculture Thomas J. Vilsack issued Order No. 3403, Joint Secretarial Order on Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters. It affirms principles the Departments will incorporate in making management decisions for federal lands or waters, or for wildlife and their habitat, that impacts the treaty or religious rights of Indian tribes. Among these principles are the sovereignty of Indian tribes, collaboration with Indian tribes to ensure that tribal governments play an integral role in decision making related to the management of federal lands and waters, meaningful consultation with Indian tribes at the earliest phases of planning and decision-making, and consideration of tribal expertise or indigenous knowledge, or both, as part of federal decision making related to federal lands. The Forest Service has amplified commitments to tribes with the February 2023 publication of Strengthening Tribal Consultations and Nation-To-Nation Relationships, A USDA Forest Service Action Plan. This action plan is organized under the following focus areas (each has corresponding action items):

1. Strengthen relationships between Indian tribes and the Forest Service
2. Fulfill trust and treaty obligations
3. Enhance co-stewardship of the nation's forests and grasslands

4. Advance tribal relations within the Forest Service

Involvement of Partner Organizations and Volunteers

One of the purposes of the National Trails System Act, as stated in section 2 of the Act, is "to encourage and assist volunteer citizen involvement in the planning, development, maintenance, and management, where appropriate, of trails" (16 U.S.C. 1241(c)). Section 11 authorizes the Secretary of the Interior and Secretary of Agriculture, as well as the heads of Federal land management agencies, to encourage and assist volunteers and volunteer organizations in planning, developing, managing, and maintaining trails that are components of the National Trails System (such as the AZNST) or that, if developed, could qualify as components of the National Trails System (16 U.S.C. 1250).

Partner organizations and volunteers hold valuable knowledge about the AZNST and the areas it goes through. Some have special knowledge and skills based on their personal experiences, professional background, or long-term knowledge of the AZNST or the areas it goes through. Partner organizations and volunteers can provide information to aid planning such as how different types of trail users use the AZNST, on-the-ground conditions that affect trail users, and resources and values significant to the nature and purposes of the trail and their locations. Because partner organizations and volunteers play a critical role in developing, maintaining, and managing the trail, it is particularly important to involve them in planning, both in developing this comprehensive plan and in future planning for the AZNST such as agency's land management planning efforts for areas the AZNST goes through and in project-level planning.

Application to Non-federally Managed Lands

Approximately 16 percent of the AZNST is located on lands that are not managed by Federal land management agencies but are instead managed by state, county, or municipal governments, or private landowners[7]. The comprehensive plan is not binding on state, county, or municipal governments or private landowners. However, the objectives and practices, monitoring plan, and other guidance in this plan (see chapter 5 and chapter 6) may serve as best management practices that can help guide AZNST management on non-federal lands. Cooperative agreements for managing the AZNST on non-federally managed lands provide a framework of communication and coordination through which non-federal entities can take voluntary actions to provide for the nature and purposes of the AZNST and other trail values (see chapter 3). As appropriate, guidance in this plan may be used to inform the provisions included in a cooperative agreement (see appendix F)

The Forest Service should ensure that pertinent local government plans are taken into consideration in AZNST administration and should coordinate with state, county, and municipal agencies to include consideration of the AZNST in local planning and project implementation efforts, as appropriate.

State Plans

Arizona State Trails Plan

The purpose of the Arizona State Trails Plan is to gather information and recommendations to guide Arizona State Parks and Trails, other land management agencies and stakeholders in the

[7] This figure includes segments of the AZNST that are currently located on public or private roads through areas of land that are not managed by Federal land management agencies.

management of, and resource distribution related to, motorized and non-motorized trails. It guides the distribution of resources related to trails, including the expenditure of funds from the Federal Recreational Trails Program (23 U.S.C. 206) and Off-Highway Vehicle Recreation Fund (A.R.S. § 28-1176). The plan's information can also be used to: 1) promote a common understanding of statewide, regional, and local issues, and the potential solutions affecting all trail interests; 2) recommend funding priorities and actions to improve and maintain Arizona's trails and routes; and 3) provide a framework for strengthening the roles of trail advocates, managers, and elected officials to be more effective in sustaining Arizona's trail heritage. The Arizona Trails Plan is prepared by Arizona State Parks and Trails and is updated every five years.

The Arizona Trails Plan includes the Arizona Trail Fund (A.R.S. §41.511.15), which is continuously appropriated for the sole purpose of maintaining and preserving the AZNST. It also mentions specific AZNST projects to be funded by the Recreational Trails Program funds and sections of the AZNST that are of special interest.

Local Government Management Plans and Strategies

Approximately 13 percent of the AZNST is under state and local government management. As AZNST projects are developed, the national trail administrator will ensure that all pertinent local government plans and initiatives are taken into consideration. The following local plans include the AZNST and connectors:

- Pima Regional Trail System Master Plan (2012)
- Pinal County Comprehensive Plan (2019)
- Pinal County Open Space and Trails Master Plan (2001, amended 2007)
- Coconino County Comprehensive Plan (2015)
- Maricopa County Regional Trail System Plan (2004)
- Flagstaff Regional Plan (includes Flagstaff Urban Trails System) (2014)
- Flagstaff Trails Initiative Regional Trails Strategy (2020)
- Flagstaff Area Open Spaces and Greenways Plan (1998)

Federal Agency Guidance

Forest Service

Specific direction on the planning and management of system trails located on National Forest System lands can be found in:

- Forest Service Manual (FSM) 2350 Trail, River, and Similar Recreation Opportunities
- Forest Service Handbook (FSH) 2309.18 Trails Management Handbook
- FSH 1909.12 – Land Management Planning, Ch. 20
- FSM 2300 – Recreation, Wilderness, and Related Resource Management, Chapter 2310 – Sustainable Recreation Planning[8]

[8] https://www.fs.fed.us/im/directives/fsm/2300/wo_2310_Amend-2020.docx

Bureau of Land Management

Direction on the planning and management of trails and trail resources associated with federal lands administered by the Bureau of Land Management is located in:

- BLM Manual MS-6250—National Scenic and Historic Trail Administration
- BLM Manual MS-6280— Management of National Scenic and Historic Trails and Trails under Study or Recommended as Suitable for Congressional Designation
- BLM Handbook H-8320-1— Recreation and Visitor Services Planning
- BLM Handbook H-1601-1 – Land Use Planning
- BLM-WO-GI-06-020-6250—National Scenic and Historic Trails Strategy and Workplan

National Park Service

Policies, procedures, and responsibility for the management of national scenic and historic trails associated with the National Park Service is located in:

- Director's Order #45 National Trails System
- Reference Manual #45 National Trails System
- Management Policy 9.2.2.7-- National Trails

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Chapter 2. Roles and Responsibilities

Roles

The various roles and responsibilities critical to the administration, management, and operation of the AZNST are described below.

Forest Service as Administering Agency

Congress designated the Secretary of Agriculture as the administrator of the AZNST, responsible for overall administration of the entire length of the AZNST as one unit. With very limited exception, all actions prescribed by the National Trails System Act have been delegated to the Chief of the Forest Service. Administering agency responsibilities involve trail-wide coordination, guidance, technical assistance, and consultation with AZNST managers who have physical site management responsibility.

The Chief of the Forest Service is responsible for entering into agreements with other agencies related to trail management and approving and submitting the comprehensive management plans to Congress (16 U.S.C. 1244 (e)). The Chief of the Forest Service has delegated the overall administration and planning of the trail to the regional forester of the Southwestern Region. Responsibilities of the regional forester include (FSM 2353.04g):

- Preparing and revising a comprehensive plan for the AZNST and submitting it to the Chief of the Forest Service for approval;
- Approving trail locations within the recommended national trail planning corridor (on Forest Service managed lands);
- Coordinating with and entering into cooperative agreements with states, counties, local agencies, non-governmental organizations, and private landowners to facilitate the management and development of the trail;
- Engaging in government-to-government consultation with affected Indian tribes (on matters that pertain to Forest Service lands or that have trail-wide implications); and
- Consulting with agencies, partners, and interested members of the public.

Trail Administrator

The administering agency has a designated full-time national trail administrator who provides trail-wide leadership, supports planning efforts, assists with partnership development, and provides guidance for trail-wide stewardship of the AZNST. The trail administrator works closely with Federal, State, and local agencies, non-governmental organizations; and volunteers to maximize benefits to the public and protect the AZNST's scenic, natural, historic, and cultural resources. The trail administrator is also responsible for the development of a trail-wide comprehensive plan and coordination of its implementation.

Forest Service, in the administering agency role, is responsible for taking actions which relate to overall administration of the trail. Other Federal agencies, the State, local governments, and private interests develop and manage the trail on lands under their jurisdiction, unless management authority has been conveyed elsewhere through an agreement.

State and Other Federal Agencies

The National Trails System Act directs the Secretary of Agriculture to consult with the heads of all other affected Federal agencies (16USC1246 (a)(1)(A)). The trail crosses National Park Service units and Bureau of Land Management public lands. These and other Federal Departments and agencies, including the U.S. Department of Transportation and Federal Highway Administration, signed a memorandum of understanding (MOU) on the national trails system in 2016 to facilitate, encourage, and assist interagency cooperation at the national, trail-wide, regional, state, and local levels to implement the National Trails System Act. The MOU identifies roles and responsibilities of the agencies and reaffirms their responsibility to administer and manage the trail seamlessly across jurisdictional boundaries.

State and Federal agencies are responsible for the management of sections of the AZNST that cross lands under their jurisdictions.

National Park Service

Director's Order 45 in Section 3.7 Cooperation and Consultation states, "National Park Service will ensure that its administration of national scenic and historic trails will be in close consultation and collaboration with all appropriate Federal, State, and local agencies, tribal groups, and nonprofit organizations." The National Park Service Reference Manual 45 that complements Director's Order 45 states, "The lands and resources associated with national trails are almost always affected by planning and actions of multiple jurisdictions. The intent of the National Trails System Act is that these actions be coordinated so as not to impair the values of the trails and, at the same time, not create hardship through arbitrary changes to economically important land uses. Often, after a comprehensive management plan for a national scenic trail or national historic trail is conducted, the local land managers (National Park Service, National Forest Service, Bureau of Land Management) conduct more site-specific planning which may or may not refer to the significance and importance of the segments of national trail within their study area. It is important that the trail-wide plans (such as comprehensive management plans) and the local area plans dovetail and reinforce each other."

Bureau of Land Management

Bureau of Land Management Manual 6280 notes that, "through the land use planning process, where a designated trail is within the planning area, the BLM establishes (a) National Trail Management Corridor, and will set forth allocation decisions, management actions, and necessary restrictions for resources and resource uses within that National Trail Management Corridor to effectively manage the nature and purposes of the National Trail and the resources, qualities, values, and associated settings and the primary use or uses."

Indian Tribes

The AZNST crosses ancestral lands of many tribes that are rich in cultural resources and values. Consultation with Indian tribes must be government-to-government. This comprehensive plan is a federal undertaking subject to compliance with Section 106 of the National Historic Preservation Act (16 U.S.C 470), which requires Federal agencies to consider the effects of a proposed undertaking on historic properties eligible for the National Register of Historic Places in consultation with affected tribes, State Historic Preservation Offices, Tribal Historic Preservation Offices, and interested parties.

Managing Agency

The National Trails System Act directs the Secretary of Agriculture to consult with the heads of all affected state agencies (16USC1246 (a)(1)(A)) and to coordinate with local jurisdictions. This plan was developed in consultation with the State of Arizona, the State Historic Preservation Office, Arizona State Parks and Trails, the Arizona State Land Department, and managing local agencies.

Forest Service and other federal agencies may enter into cooperative agreements with states and local agencies to operate, develop, and maintain any portion of the trail within or outside of a federally administered area. These agreements may include provisions for limited financial assistance to encourage participation in the acquisition, protection, operation, development, or maintenance of the trail (16 U.S.C. 1246 (h) (1)).

Many sections of the AZNST are located on public lands (federal, state, local), or within fully executed rights-of-way areas or easements, and were developed prior to its national scenic trail designation. They became part of the AZNST in the absence of an agreement with an administering agency. They are part of municipal or county trails systems and managed under local management plans, with the help of partner organizations. In these cases, Forest Service coordinates with the local governments and encourages management to align with the nature and purposes of the AZNST. Assistance may be offered as outlined above but, otherwise, the role of these local governments is unchanged by the national scenic trail designation.

Private Landowners

The National Trails System Act encourages coordination and collaboration with private landowners to manage national trails. With just over three percent of the AZNST crossing private lands, private landowners play a relatively minor role in the management of the AZNST when compared to many other national trails. State and local governments may enter into written cooperative agreements with private landowners or acquire such lands or interests from landowners to facilitate land management (16 U.S.C. 1251). Federal agencies may also enter into written agreements with private landowners or acquire lands or interests in lands from private landowners, to facilitate administration and management of the AZNST.

The Forest Service may enter into cooperative agreements with private landowners to operate, develop, and maintain any portion of the trail within or outside a federally administered area. These agreements may include provisions for limited financial assistance to encourage participation in the acquisition, protection, operation, development, or maintenance of the trail (16 U.S.C. 1246 (h) (1)). Alternatively, private landowners may also work with the Arizona Trail Association or other entities working on behalf of the AZNST.

Partners and Volunteers

The National Trails System Act recognizes the valuable contributions volunteers and private and nonprofit trail groups have made to the development and maintenance of the nation's trails and encourages "volunteer citizen engagement in the planning, development, maintenance, and management, where appropriate, of trails" (16 U.S.C. 1246 Sec. 2 (a)).

Roles of partners and volunteers can include monitoring; maintenance; construction; trail-wide partner coordination; planning; signing; conducting trail-wide resource inventories; mapping - including collecting global positioning system information and using geographic information

systems to produce maps; assisting with interpretation and education; assisting agencies with land acquisition and providing financial assistance to Federal, State, and local agencies; landowners; interest groups; and individuals.

The Forest Service and other agencies with jurisdiction over lands on and adjacent to the trail may enter into cooperative agreements with non-governmental organizations and volunteers to operate, develop, and maintain any portion of the trail within or outside federally administered lands. These agreements may include provisions for limited financial assistance to encourage participation in the acquisition, protection, operation, development, or maintenance of the trail (16 U.S.C. 1246 (h) (1) and 16 U.S.C.1250).

Arizona Trail Association

Established in 1994, the Arizona Trail Association is the primary private partner for the trail and is a long-standing champion for and steward of the Arizona National Scenic Trail with a mission to "protect, maintain, enhance, promote and sustain the Arizona Trail as a unique encounter with the natural environment." The ATA is closely engaged with Forest Service and other managing jurisdictions on all aspects of trail development, maintenance, and volunteer training and management. The ATA's programs engage volunteers, youth, veterans, other partner organizations, in addition to outreach, promotion and advocacy.

Chapter 3. Trail Values

This chapter describes the AZNST's nature and purposes (16 U.S.C. 1246(c)); the managed uses that occur in some sections of the trail; the unique opportunity the trail provides for long-distance recreation experiences; and the significant natural, historical, and cultural resources and values[9] (16 U.S.C. 1244(e)(1)) that support the trail's nature and purposes. Collectively, these fundamental attributes of the AZNST are referred to throughout this plan as the AZNST's trail values. The trail values are unique to the AZNST, based on its legislation and history, but they also reflect its status as a component of the National Trails System. The trail values convey resources and opportunities that are integral to the AZNST's nature and purposes and its identity as a national scenic trail. The trail values are therefore foundational considerations in all aspects of administration and management of the AZNST, including future planning, development, maintenance, and uses along the trail.

Nature and Purposes

The nature and purposes of the AZNST define the ideal trail setting, breadth of recreation opportunities, and the context for what types of uses and activities are appropriate for the trail and its corridor. The nature and purposes are critical to the proper protection and management of national scenic trails and can be derived, in part, from Sec. 3(a)(2) and Sec. 7(c) of the National Trails System Act.

Sec. 7(c) of the National Trails System Act states:

> "National scenic or national historic trails may contain campsites, shelters, and related-public use facilities. Other uses along the trail, which will not substantially interfere with the **nature and purposes** of the trail, may be permitted by the Secretary charged with the administration of the trail. Reasonable efforts shall be made to provide sufficient access opportunities to such trails and, to the extent practicable, efforts be made to avoid activities incompatible with the **purposes** for which such trails were established."

In developing the nature and purposes of the AZNST, consideration has been given to the basic intent of the National Trails System Act, subsequent executive orders, and elements of legislative history. It is also informed by the original vision for the AZNST described in the 1995 Arizona Trail Management Guide, as well as by results of public meetings that occurred prior to the development of this plan.

The legislative history includes House Report No. 90-1631, which accompanied the National Trails System Act. The report clarified the intent of specific wording in the Act and therefore the intent of Congress:

> "….selection of routes for National Scenic Trails – Such rights-of-way shall be (1) of sufficient width and so located to provide the maximum retention of natural conditions, scenic and historic features, and primitive character of the trail area, to provide campsites, shelters, and related public-use facilities, and to provide reasonable public access; and (2) located to avoid, insofar as practicable, established highways, motor roads, mining areas,

[9] Preserving not only resources but "resources and values" is part of the mission of the National Park Service, and this approach is reflected in its guidance for implementing its responsibilities under the National Trails System Act (Director's Order #45 and Reference Manual #45). Bureau of Land Management policy for national scenic trail management addresses resources and values, as well as a trail's qualities, associated settings and primary use or uses (Manual 6280).

> power transmission lines, existing commercial and industrial developments, range fences and improvements, private operations, and any other activities that would be incompatible with the protection of the trail in its natural condition and its use for outdoor recreation.... National scenic trails shall be administered, protected, developed, and maintained to retain their natural, scenic, and historic features; and provision may be made for campsites, shelters, and related public-use facilities; and other uses that will not substantially interfere with the nature and purposes of the trails may be permitted or authorized, as appropriate: Provided, That the use of motorized vehicles by the general public along any national scenic trail shall be prohibited... (1968 U.S. Code Cong. and Admin. News 3855, 3863-3864, 3867)."

Executive Order 13195, Trails for America in the 21st Century, 2001, directs Federal agencies to:

> "… protect, connect, promote, and assist trails of all types… This will be accomplished by… protecting the trail corridors associated with National Scenic Trails… to the degree necessary to ensure that the values for which [the] trail was established remain intact."

Nature

The AZNST is a primitive, non-motorized, long-distance, continuous route through rugged and spectacular landscapes. The trail corridor is defined by open space and magnificent scenery, encompassing Arizona's dramatic topography, biodiversity, and rich cultural history. The trail experience is a blend of opportunities for quality recreation, self-reliance, stewardship, community building, discovery, self-reflection, and intimate connections with nature surrounded by breathtaking beauty and natural quiet.

Purposes

- Sustaining a premier, continuous, nonmotorized, primitive pathway across the State of Arizona from Mexico to Utah.
- Conserving and showcasing the diverse scenic, natural, historic, and cultural resources along the trail corridor in a setting that supports quiet recreation, where the sights and sounds of nature are prevalent.
- Promoting multiple non-motorized, human or animal-powered trail uses, primarily hiking, mountain biking, horseback riding, and cross-country skiing along a single shared pathway. Connecting deserts, mountains, forests, wilderness, canyons, communities, and people.
- Providing educational experiences for Arizona's residents and visitors that includes the cultural history of the Native Americans whose ancestral lands are traversed by the trail.
- Fostering land stewardship in the development and use of the trail to cultivate appreciation for and protection of the associated natural and cultural resources as a legacy for future generations.
- Valuing wildness, remoteness and solitude while providing opportunities to experience short excursions as well as extended adventures.

An adaptive management approach helps managers ensure that desired objectives are achieved, and the intent of the plan continues to be realized as future conditions change. This adaptive management and monitoring plan defines the indicators, thresholds, and resulting adaptive management actions that will govern long-term management and potential adjustments needed to ensure desired conditions are being met. An adaptive management strategy allows for the monitoring of physical, social, and managerial resource objectives.

The AZNST crosses multiple jurisdictions and passes through a variety of ecosystems. Monitoring and adaptive management approaches will range from site-specific issues to regional or trail-wide conditions and trends. In most cases, selection of appropriate indicators and thresholds, monitoring, and implementation of adaptive management actions will be done at the local level by local land managers. Overall monitoring trends will be shared with the trail administrator.

Figure 1 is a color map of the State of Arizona showing the route of the Arizona National Scenic Trail. The route, shown in red, spans from the U.S. and Mexico border to its northern terminus at the Utah state border.

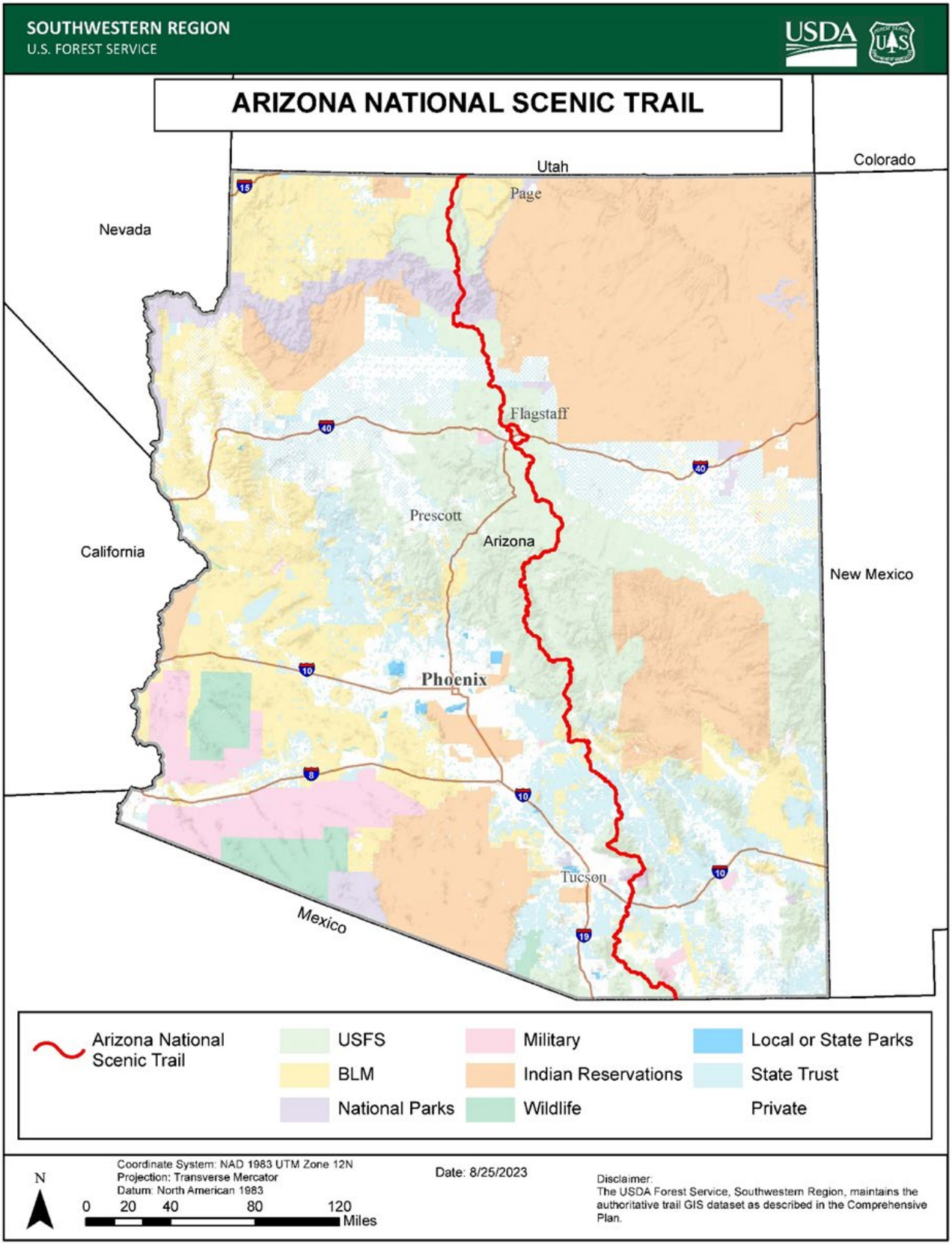

Figure 1. Arizona National Scenic Trail vicinity map

Managed Uses

The AZNST offers diverse and superlative nonmotorized recreation opportunities on one trail, including hiking and trail running, horseback riding and mountain biking (where permissible outside wilderness and by land management agencies), and, in winter, cross-country skiing and snowshoeing. It connects communities to the outdoors and invites recreationists to explore some of the most remote and rugged landscapes in the Southwest.

The AZNST is located near gateway communities that offer a variety of opportunities for exploration and access to goods and services that trail users may find important. The Arizona Trail Association maintains a list of the gateway communities on their website. Currently, the website includes more than 19 gateway communities and information about the types of opportunities available to trail users.

Hiking

Among the managed uses of the AZNST that guides its administration and management is hiking, with an emphasis on not only long-distance backpacking, but day hiking as well. The Arizona Trail Association has responded to popular demand and created the Arizona Trail Day Hiker's Guide for people who are interested in hiking the Arizona Trail in smaller sections. Following the guide, day hikers can complete the entire AZNST in 89 day hikes ranging from 3.8 miles to 13.8 miles in length, with an average distance of around nine miles per hike (Day Hiker's Guide – Explore the Arizona Trail aztrail.org).

The AZNST is administered and managed to ensure it provides a nationally significant opportunity for continuous end-to-end travel to complete the entire AZNST on foot (thru-hiking[10]). It also provides opportunities for shorter trips on foot, ranging from day hiking to multi-day backpacking trips on sections of the AZNST. Some hikers complete the entire AZNST by hiking different sections (passages) over the course of multiple trips and years (section or passage hiking).

Thru-hiking use constitutes only a small fraction of overall use of the AZNST relative to day-use and short multi-day trips. The thru-hiking opportunity is central to the nature and purposes of the AZNST. Protecting and enhancing this opportunity requires attention to the particular needs and constraints of thru hikers in the context of the AZNST.

Thru-hiking is also a trail use with unique logistical considerations and challenges, such as weather, water availability, permits for backcountry overnight travel in the national parks, the availability of campsites and other overnight accommodations, trail conditions, and the impacts of temporary trail closures.

Consistent with 36 CFR 212.1, FSM 2353.05, and Title V, Section 507(c), of the Americans With Disabilities Act, wheelchairs and mobility devices, including those that are battery powered, that are designed solely for use by a mobility-impaired person for locomotion and that are suitable for use in an indoor pedestrian area are allowed on all National Forest System lands that are open to

[10] "Thru-hiking" is the widely accepted term used to describe a long-distance hike completed in its entirety from end-to-end in one season. "Thru-travel", "thru-riding", and other derivative terms have similar, related meanings that refer to other forms of travel in addition to, or other than, hiking alone. "Section hiking" refers attempting to hike the entirety of a long-distance trail section by section, which may or may not occur in a linear sequence, over the course of multiple seasons or years.

foot travel." The agency will continue to work with partners to identify trail segments best suited for wheelchairs or mobility devices.

Bicycling

From the inception of the AZNST, non-motorized bicycling, especially mountain bicycling, has been among the managed uses of the trail. This trail is one of a few national scenic trails in the country that encourages mountain biking. Much of the trail design outside national parks and wilderness areas was accomplished with consultation from mountain bikers; recently constructed segments of trail were informed by International Mountain Biking Association (IMBA) specifications; and many of the volunteers who helped build the trail were members of the mountain biking community.

While mountain bikers are encouraged to explore and enjoy the AZNST, there are a number of segments that are off limits to bicycles due to restrictions within Congressionally designated wilderness areas, National Park Units, or recommended wilderness areas (36 CFR 4.30, 36 CFR 261.16, and 43 CFR 6302). Bicycle use is allowed on many segments of the AZNST, including considerable mileage of the AZNST that is on single-track trails.

The AZNST provides opportunities for day and overnight trips ("bikepacking") by bicycle. The AZNST is informally listed among the "Triple Crown of bikepacking" (Arizona Trail—800 miles [some of this mileage includes bypass routes that avoid trail segments that are not legally available to mountain bike travel and may not be on the actual national trail planning corridor], Great Divide Mountain Bike Route—2,800 miles, and Colorado Trail—500 miles) (https://aztrail.org/). Due to terrain, resource protection, or other local conditions, some sections of the AZNST may not be passable by bicycle, or the managing agency may not allow bicycle use in that location, or both.

Electronic bicycles (E-bikes) are bicycles that contain an electronic motor to provide power assistance to the rider and reduce the physical exertion required to propel the bike forward. All Federal agencies have defined e-bikes (including pedal-assist models) as motorized, and the AZNST was designated by Congress as a non-motorized trail. As such, e-bikes are prohibited on the AZNST. The only exception is on dirt roads and some paved sections where e-bike use is allowed.

The BLM published Instruction Memorandum (IM) 2023-051 which establishes policy concerning the use of e-bikes on BLM -managed trails where mechanized use is allowed, and off-road vehicle use is otherwise prohibited. This follows BLM's 2020 rule which created an authority by which authorized officers may allow e-bike use on trails where motorized vehicles are otherwise prohibited by excluding class 1, class 2, and class 3 e-bikes from the definition of off-road vehicle. However, in the BLM Instruction Memorandum there is a requirement for all decisions excluding e-bikes from the definition of off-road vehicles be elevated to the Assistant Director, National Landscape Conservation System (NLCS) for careful consideration before obtaining concurrence for the decision. Because the AZNST was Congressionally designated as non-motorized, any decision to exempt e-bikes from the off-road vehicle definition would be denied concurrence on any segment of the AZNST on BLM-managed lands.

Pack and Saddle Stock Use

Horseback riding is a popular use in certain sections of the AZNST. Equestrian groups have also played a role in the development and stewardship of the AZNST through the work of volunteer organizations and individual volunteers.

Pack and saddle stock use is recognized as an important and valued managed use of the AZNST to be considered in its administration and management. While it is not possible to "thru-ride" the entire AZNST on horse (or bicycle), the AZNST provides outstanding opportunities for backcountry trips by these means through identification of alternate and suitable routes.

The AZNST provides opportunities for day and overnight trips using stock for riding or packing. Due to terrain, resource protection, or other local conditions, some sections of the AZNST may not be passable by pack and saddle stock or the managing agency may prohibit stock in that location, or both.

There are other segments of the AZNST where the managing agency allows pack and saddle stock use with restrictions, such as season of use, or the type of stock allowed. Additionally, there may be places where the trail is not passable for stock due to the conditions on the ground, such as areas with steep rock slabs.

Significant Natural, Cultural, and Historic Resources to be Preserved

The Arizona Trail was the dream of Dale Shewalter who envisioned a cross-state trail in the 1970s, and in 1985, while he was working as a Flagstaff schoolteacher, walked from Nogales to the Utah state line to explore the feasibility of a trail traversing Arizona. Immediately thereafter, Dale began traveling around the state giving presentations on his vision of a trail connecting communities, mountains, canyons, deserts, forests, public lands, historic sites, various trail systems, wilderness areas, and other points of interest. The idea was embraced by all types of trails users throughout Arizona, and by Arizona State Parks and the Kaibab, Coronado, Coconino, and Tonto National Forests, the Bureau of Land Management, and National Park Service (aztrail.org).

When Congress designated the AZNST a national scenic trail in 2009, they described it as:

> "…extending approximately 807 miles across the State of Arizona from the U.S.-Mexico International border to the Arizona-Utah border, as generally depicted on the map entitled 'Arizona National Scenic Trail' and dated December 5, 2007" (16 USC 1244 (27).

See chapter 4 for a more detailed description of the AZNST's location and affected jurisdictions.

Significant natural, historical, and cultural resources and values are those determined to warrant special consideration in trail management and planning processes because they are essential to achieving the nature and purposes of the AZNST. One of the most important responsibilities of the Forest Service and the managing agencies is to ensure the conservation and public enjoyment of the resources, qualities, values, settings, and opportunities that are essential and fundamental to achieving the nature and purposes of the AZNST and maintaining its significance as a component of the National Trails System. The managing agency's policies (see chapter 1) and supporting tools or references may provide guidance for how to inventory, assess, or otherwise identify specific instances and locations of these resources and values along the trail in order to monitor

and safeguard them. The following significant natural, historical, and cultural resources and values have been identified for the AZNST:

Exceptional Scenic Beauty and Variety

The AZNST's south-north route travels through some of the most spectacular, biodiverse and scenic terrain in the United States. The trail alignment was developed to emphasize the wide range of geologic and ecological diversity found in the state, and to link mountain ranges, wilderness, and other special places (1995 Arizona Trail Management Guide, p. 15). Additionally, the trail was located to maximize the use of public lands as well as to incorporate existing trails into one continuous trail.

As detailed in Chapter 4, the AZNST has been divided into four major regions based upon scenic character zones (1) Sky Islands, (2) Arizona Sonoran uplands, (3) Volcanic field and ponderosa pine plateau, and (4) Plateaus and canyons). The trail travels through basin and range mountains in the Sky Islands region, lush stands of saguaro cactus and desert vegetation through the Sonoran Desert uplands, high plateaus with towering ponderosa pines and views of the highest peaks in the state through the volcanic field and ponderosa pine plateau region, and traverses plateaus, and canyons (through the Grand Canyon National Park) before finally reaching the Utah border at the doorstep of the Grand Staircase Escalante National Monument to the north. Within and surrounding the national trail planning corridor are astonishing examples of exceptional scenic beauty and biodiversity unique to Arizona. Highlights from each zone include views of the Miller Peak Wilderness in the upper elevations of the Huachuca Mountains; views of the San Rafael Valley a largely undeveloped 60,000 acre natural landscape that extends from the headwaters of the Santa Cruz River into Mexico; views of the iconic Superstition Wilderness; expansive wilderness views, Mogollon Rim, San Franscisco Peaks; and stunning views of the Grand Canyon and beyond. Significant scenic resources are described in greater detail in Chapter 4-Regions of the Trail.

Wilderness and Backcountry Settings

From its early conceptual vision, development of the AZNST has strived to maximize the amount of the trail located on public lands, in particular undeveloped settings such as wilderness and backcountry. The AZNST crosses seven Congressionally designated wilderness areas with 117 miles of its length within those areas, six managed by the Forest Service (Miller Peak, Rincon Mountain, Pusch Ridge, Superstition, Four Peaks, and Mazatzal) and one managed by the National Park Service (Saguaro). Wilderness and remote backcountry areas along the AZNST are characterized by their rugged and stark beauty, outstanding opportunities for solitude or primitive and unconfined recreation, and challenging physical conditions. The largest continuous stretch of the AZNST that passes through wilderness is in the Mazatzal Wilderness (approximately 47 miles), which is characterized by brush or pine-covered mountains broken by narrow, vertical-walled canyon. Opportunities to experience wilderness and remote backcountry areas is a major focus of the AZNST experience as it spans vast expanses of the state.

Diverse Ecological Communities and Valued Plant Species

The four major regions that the AZNST traverses not only represent a broad-spectrum of scenic beauty, but also diverse ecological communities including valued plant species. Similarly, each region has wildlife species that depend on those plants and related habitats. Thanks to the variety of habitats along the trail and state, Arizona is one of the most biologically diverse states in the nation, ranking third in the number of native bird species, second for reptiles, fifth for mammals,

and eighth overall for vertebrate diversity. Arizona is home to nearly 4,000 species of native plants, several thousand species of pollinating insects and more than 200 species of native crustaceans and mollusks. These native species play a crucial role in the ecological communities of the state (Arizona Wildlife Conservation Strategy, Arizona Game and Fish Department). The AZNST's extraordinary landscape variability in climates, elevations, landforms, vegetative communities, riparian areas and soil types create many different ecological communities along the route. These communities range from the isolated mountains of the Sky Islands region where steep elevation gradients and changes in aspect resulting in rapid environmental changes over short distances that effectively operate as an isolating mechanism for many plants and animals. Other regions and communities range from hot, dry deserts of southern Arizona, through grasslands and woodlands in mid-elevations, to the cold and wet subalpine forest environments in the higher elevations of the volcanic fields and ponderosa pine plateau region. Additionally, many rare and sensitive plant species occur along the trail, including four federally listed endangered species and their critical habitat: Acuna cactus (*Echinomastus erectocentrus* var. *acunensis*), Arizona hedgehog cactus (*Echinocereus arizonicus* ssp. *arizonicus*), Beardless chinchweed (*Pectis imberbis*), and Huachuca water-umbel (*Lilaeopsis schaffneriana* var. *recurva*).

Wildlife and Fish Species

There is an astonishing diversity of wildlife species in every region of the AZNST. Southeastern Arizona's isolated mountain ranges (The Sky Islands Region) and river corridors are critical pathways for many species that spend part of their life cycle south of the U.S. – Mexico border. The region provides habitat for neotropical species which include jaguar, ocelot, elegant trogon, black-chinned hummingbird (also more species of hummingbirds than anywhere else in the lower 48 states), varied bunting, western yellow-billed cuckoo, vermilion flycatcher, and greater peewee. Also found are Gould's turkey, bighorn sheep, pronghorn, javelina, and the Kaibab squirrel. The Kaibab Plateau on the north rim of Grand Canyon also supports a renowned mule deer herd and goshawk population with historical, ecological, and economic significance.

Places of Importance to Tribes

Every foot of the Arizona National Scenic Trail is on the ancestral lands of Indigenous people and continues to be significant to indigenous first nations. Additionally, all or part of every national forest, national park, and other public and private lands crossed by the AZNST is the ancestral homelands of most if not all, of the Native American tribes identified in chapter 1 and in Executive Order 10606 (which established the Baaj Nwaavjo I'tah Kukveni - Ancestral Footprints of the Grand Canyon National Monument). The cultural landscape surrounding the AZNST was replete with indigenous travel routes preceding Euro-American contact, and tribal members continue to use some of these travel routes to access sacred sites and to exercise treaty rights including hunting, fishing, and gathering food, medicine, and ceremonial materials in open and unclaimed lands within their ceded territories. Federally recognized tribes participate in government-to-government consultation with federal agencies regarding management of their ancestral lands and waters.

Traces of the Past

The first passage of the Arizona Trail begins along the international border with Mexico in the Coronado National Memorial. Francisco Vázquez de Coronado, a Spanish explorer, is believed to have been the first European to enter what is now Arizona in 1539, just east of the monument that now bears his name. Coronado's massive expedition made its way north along the San Pedro

River through eastern Arizona, looking for the fabled Seven Cities of Cibola, which were said to have streets paved with gold. Coronado's expedition located the Grand Canyon and the pueblos of the Hopi and Zuni people during its time in Arizona, but no gold (Preston Sands, aztrail.org).

The cultural landscape through which the AZNST passes still bears the marks of those who came before. Cultural resources are valuable touchstones of our collective national heritage. They include pre-Columbian, archaeological, and architectural sites, structures, places, or objects and traditional cultural properties[11] associated with groups, patterns of land use and other aspects of the history of Arizona. Areas surrounding the AZNST contain hundreds of archaeological sites representing millennia of indigenous use, as well as the more recent historic presence of explorers, ranchers, miners, loggers, and homesteaders. Interpretation and enjoyment of cultural resources enriches the AZNST experience.

Examples of cultural and historical sites along the trail include the Sky Islands region, homeland of the Chiricahua Apache Tribe and the region of the "Apache Wars" (1861 to 1886), which ended with the surrender and removal of Geronimo — Apache leader at that time — and the Chiricahua people from Arizona. The Butterfield Overland Mail Route (designated by Congress as a national historic trail in 2023), also known as the Butterfield Stage Route, connected east Missouri and Tennessee to San Francisco from 1858 to 1861. The AZNST crosses the route on the Cienega Creek Natural Preserve. Numerous mining and ranching operations (historic and currently operating) are spread along the trail, as are camps and military routes such as Kearny's Gila Trail, Picketpost Mountain, and Cooke's Road. The site of the Battle of Big Dry Wash is the location of an 1882 battle between the United States Army's 3rd and 6th Cavalry Regiments and members of the White Mountain Apache Tribe who were led by Na-ti-o-tish; it is considered to be the last major battle between the United States Army and Apache warriors. Walnut Canyon National Monument was established in 1915 to preserve ancient cliff dwellings, which were first occupied by the Sinagua from about A.D. 600 until 1400. The Grand Canyon, with its two billion years of geologic history, has hosted indigenous inhabitants from time immemorial to the present day.

Rivers, Streams, and Riparian Areas

Riparian areas are considered the most productive habitats in North America. In Arizona, these areas include large rivers and streams such as the Colorado and San Pedro Rivers, Oak Creek, and Cherry Creek, as well as ponds and wetlands such as those found at Cienega Creek. In the arid western United States, riparian areas are less than two percent of the total land area. Arizona's estimated riparian land area is 0.4 percent, however 70 percent of the threatened and endangered vertebrates in Arizona depend on riparian areas (Arizona's Riparian Areas). Examples of a few riparian areas within the AZNST are Sonoita Creek, Parker Canyon, Cave Creek, Patagonia-Sonoita Creek Preserve, Cienega Creek Natural Preserve, East Verde River, Gila River, and the Colorado River.

Night Skies

Many passages and regions along the AZNST are areas of low light trespass where night skies have little competition from man-made light sources and provide inspirational nighttime viewing

[11] A traditional cultural property is a property, a place, that is eligible for inclusion on the National Register of Historic Places because of its association with cultural practices and beliefs that are (1) rooted in the history of a community, and (2) are important to maintaining the continuity of that community's traditional beliefs and practices.

opportunities of a sensitive resource. Areas such as these are recognized as a diminishing resource and highly valued for the activity of star gazing.

More information on night skies can be found at: nps.gov/subjects/nightskies/index.htm

Urban Night Sky Place

A DarkSky International Urban Night Sky Place is a municipal park, open space, observing site, or other similar property near or surrounded by large urban environs whose planning and design actively promote an authentic nighttime experience amid significant artificial light. By virtue of their characteristics, these sites do not qualify for designation within any other DarkSky International category. However, they are worthy of recognition for their efforts to educate the public on the benefits of proper outdoor lighting that ensures public safety while minimizing potential harm to the natural nighttime environment (Urban Night Sky Places - DarkSky International (darksky.org).

The City of Flagstaff and the northern Arizona region have achieved worldwide recognition for innovative leadership in the protection of dark skies. On October 24, 2001, Flagstaff was recognized as the world's First International Dark Sky City for its pioneering work balancing preservation of our night sky natural resource with concerns about public safety and economic security. Rather than allow this significant economic and cultural inheritance to be degraded, the region's hard-won reputation and accomplishments are acknowledged as vital assets.

Oracle State Park and Walnut Canyon National Monument were designated as International Dark Sky Parks in 2014 and 2016, respectively, and Saguaro National Park was designated as an Urban Night Sky Place in 2023. Additionally, Tonto National Monument, which lies just east of Passage 19, was designated as an International Dark Sky Park in 2019. As Dark Sky International further develops their landscape category for dark sky designation, the Forest Service should pursue dark sky status for other portions of the AZNST, where practicable, in order to identify and protect this important and diminishing resource which defines the trail experience.

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Chapter 4. Location of the Arizona National Scenic Trail

The AZNST begins at the Coronado National Memorial on the U.S.-Mexico border and ends within the Bureau of Land Management's Arizona Strip District on the Utah border. In between, the AZNST winds through rugged and spectacular scenery. The AZNST crosses the jurisdictions listed below. Where lands are intermingled, each jurisdictional unit is only mentioned once but the AZNST may enter and leave each unit more than once. Jurisdictions are listed from south to north.

Coronado National Memorial

Coronado National Forest – Sierra Vista Ranger District

Rosemont Copper's Sonoita Spring Ranch and Wildlife Corridors LLC private lands

Coronado National Forest – Nogales Ranger District

Arizona State Trust Land on perpetual rights-of-way held by Pima County

Pima County Cienega Creek Preserve

Pima County Colossal Cave Mountain Park

Saguaro National Park

Coronado National Forest – Santa Catalina Ranger District

Oracle State Park

Arizona State Trust Land on perpetual rights-of-way held by Pinal County

Bureau of Land Management Gila District – Tucson Field Office

Arizona State Trust Land on perpetual rights-of-way held by the Bureau of Land Management

Tonto National Forest – Globe Ranger District, Mesa Ranger District, Cave Creek Ranger District, and Payson Ranger District

Coconino National Forest – Mogollon Rim Ranger District, Flagstaff Ranger District

Arizona State Trust Land on perpetual rights-of-way held by Coconino County

Walnut Canyon National Monument

Flagstaff Ranger District, City of Flagstaff (including Picture Canyon Natural and Cultural Preserve), State Trust Land and private land on main route, Elden Mountain Passage 32

Flagstaff Ranger District and City of Flagstaff (including McMillan Mesa Natural Area and Buffalo Park) and private land on Flagstaff Passage 33

Babbitt Ranches' CO Bar Ranch private land mixed with Coconino County lands.

Baaj Nwaavjo I'tah Kukveni-Ancestral Footprints of the Grand Canyon National Monument--Kaibab National Forest – Tusayan Ranger District

Grand Canyon National Park

Kaibab National Forest – North Kaibab Ranger District

Bureau of Land Management Arizona Strip District – Arizona Strip Field Office

The AZNST passes through the city of Flagstaff using an urban route that utilizes a combination of dirt paths and asphalt to wind its way across the city. The route follows several drainages, climbs over small ridges, and passes through an underpass at one of the city's busiest

intersections at Ponderosa Parkway. The AZNST climbs to McMillan Mesa on city streets and the Flagstaff Urban Trails System. This section provides easy access to restaurants, coffee shops, grocery stores, hotels, and gear shops.

History of the Trail Location

The proposed AZNST alignment was endorsed by the Arizona Hiking and Equestrian Trails Committee of the Arizona State Parks Board in 1988. Further work to refine the alignment took place in 1988 and 1989 in a series of public meetings held across the State in coordination with public land agencies. Unlike many other long-distance trails, such as the Pacific Crest, Continental Divide, and Appalachian National Scenic Trails that follow one mountain range or geologic feature, the alignment of the AZNST was developed to emphasize the wide range of geological and ecological diversity in the state, and to link public lands, mountain ranges, wilderness, and other special places (1995 Arizona Trail Management Guide, p. 15). In addition, it was located to maximize the use of public lands as well as to incorporate already existing trails into one continuous trail. The alignment originally envisioned was modified in response to local conditions as connections were developed on the ground.

Regions of the Trail

The AZNST's route travels through some of the most spectacular and scenic terrain in the United States. From south to north the trail traverses southeastern Arizona's Sky Islands (basin and range mountains), through Sonoran Desert uplands with dense stands of saguaro cactus, high plateaus with towering ponderosa pines and views of the highest peaks in the state, traverses plateaus, and canyons (through Grand Canyon National Park) and finally reaches the border with Utah at the doorstep of the Grand Staircase Escalante National Monument to the north. Within and around the AZNST's corridor are astonishing examples of scenic beauty and biodiversity, much of it unique to Arizona.

As the AZNST transects the varied landforms of the state, the biophysical settings change and so does the experience of the trail user. This notion of change is expressed as scenic character, the combination of attributes that imbue an area with its physical identity, or sense of place.

To aid in the description of its scenery, the AZNST has been divided into four major regions based upon scenic character zones. They are:

- Sky islands
- Arizona Sonoran uplands
- Volcanic field and ponderosa pine plateau
- Plateaus and canyons

Figure 2. Arizona National Scenic Trail scenic character zones

These subdivisions were derived from Landscape Character Types of the National Forests in Arizona and New Mexico (USDA Forest Service 1989). While the scenic character zones appear to be neatly discrete when mapped on paper, on the ground they subtly and gradually merge rather than transition abruptly.

Significant scenic resources to be preserved are identified in the geographic region descriptions that follow.

Sky Islands

Figure 3. View into Mexico from the Huachuca Mountains

> *"It is thrilling to think that a place wild enough to support jaguars still exists in the continental United States." M. John Fayhee, "Along the Arizona Trail".*

The sky island character type is a geographic region of striking contrasts. Massive, pine-clad mountain ranges rise abruptly above an ocean of broad desert plains, forming an arid archipelago called the sky islands. The area lies at the intersection of four major biotic and geographic phenomena: the Rocky Mountains, Sierra Madre Occidental, Sonoran Desert, and Chihuahuan Desert. Characteristics of all of these can be found here.

The geology of this area is called basin and range. Faulting pushed some lands upward to create mountains and other lands subsided to create valleys. Erosion then carved mountain canyons and desert arroyos into the landscape.

The sky islands provide a wide variety of scenery and settings from the desert into mountains reaching 9,000 to 10,000 feet in elevation. The lower elevations have their own scenic appeal, with stands of tall saguaro cacti and golden rolling grasslands, such as those in the San Rafael Valley and Sonoita area. Mountaintops with their cool, shady conifer forests and grassy meadows provide a dramatic contrast with the lower elevations. Between the two are rolling foothills, rugged cliffs, and deep canyons. The mosaic of low deserts and high mountains results in an incredible range of plant and animal diversity and awesome scenery.

Vegetation in the sky island landscape is extremely diverse. Low elevation areas are generally desert scrub and grasslands with sparse, short, well-spaced vegetation that is often gray-green to blue-green in color. Foothills and mountainsides are frequently covered in oak woodlands or chaparral with darkly colored, rounded evergreens, which sometimes dot grassy slopes and in

other places provide a continuous tree canopy broken only by rocky outcrops. Higher elevations are usually covered with tall pine and mixed conifer forests, often with grassy or shrubby understory, and occasional aspen stands and meadows. The high elevation peaks are refuges for plants and animals that cannot survive in the deserts. The great variety in habitats created by these mountain ranges is responsible for the huge diversity found in plant and animal species here. The sky island mountain ranges traversed by the AZNST also contain habitat for many species that are federally listed as threatened or endangered. Sky islands host several types of riparian vegetation along waterways, from high elevation maple trees and dogwood to cottonwood trees and mesquite bosques along desert washes.

Some higher elevation springs and streams are perennial. Most are generally seasonal. About half of the annual precipitation falls during the winter rainy season and half during the summer monsoon. Monsoon rain and winter snowmelt flow into creeks, rush down canyon bottoms, and flow into the desert. Artificial stock tanks provide water for wildlife and livestock.

Arizona Sonoran Uplands

Figure 4. Roosevelt Lake

The Arizona Sonoran uplands character type is a geographic region of transition between the Sonoran Desert and the wetter, cooler high country to the north. It encompasses the heavily dissected mountainous areas between the Mogollon Rim and the Gila River canyons. Landforms vary from desert plains and hills to forested plateaus and mountains. The mountains are drained by steep, rocky narrow ravines. The hills are drained by broad dry washes. Several streams and

rivers flow perennially and are located primarily in the mountains. Major watercourses are the Verde and Salt Rivers, and the East Fork of the Verde River in the north.

Some of the most remote sections of the AZNST are in this region. The scenery is predominantly natural appearing. Wilderness areas harbor solitary and primitive settings. Recent wildfires have been uncharacteristically large and severe. In some areas, stand-replacing fires have stimulated a dense brushy shrub layer. Higher elevation areas, in the Superstition and Mazatzal Mountains and mesas below the Mogollon Rim, differ ecologically from lower elevation Sonoran Desert areas.

Between 1,500 and 3,000 feet in elevation, landforms of rolling hills and low mountains dominate the landscape. Areas around Picketpost Mountain and south of the Superstition Mountains are visually stunning and geologically complex. The predominant vegetation in the lower elevations is Sonoran Desert scrub. Interior chaparral dominates higher elevations. Dense stands of saguaro cactus and palo verde are localized. The Salt River has been impounded to create Apache and Roosevelt Lakes.

The Superstition, Four Peaks and Mazatzal Mountains and mesas below the Mogollon Rim, in their lower elevations up to about 5,000 feet, contain diverse vegetation, including desert scrub, semi-desert grasslands, and chaparral communities, with some juniper woodland occurring in the upper reaches. The hilly to mountainous terrain has numerous canyons and valleys, and a variety of rock types. Plants includes mesquite, catclaw acacia, jojoba, turbinella oak, mountain mahogany, ceanothus, skunkbush sumac, and silktassel. Grassy areas are scattered with agaves, yuccas, sotol, and opuntias.

From about 4,200 to 7,000 feet elevation, montane juniper-pinyon-oak woodlands become more dominant. Oak densities vary by aspect. At middle elevations, a chaparral shrub community occurs beneath the trees, composed of desert ceanothus, alderleaf mountain mahogany, turbinella oak, mazanitas, and catclaw mimosa. Other areas are grassy, and park-like with mixed grama grasses and scattered trees. Pinyon, alligator, and one-seed juniper, and Madrean oaks such as Gray and Emory oak occur here. A few areas of ponderosa pine and Madrean oaks occupy the highest elevations. Below the Mogollon Rim, and in scattered high-elevation patches, generally between 5,400 and 7,700 feet, are transitional conifer forests. Those forests are characterized by ponderosa pine with evergreen oaks such as silverleaf oak, netleaf oak, and Emory oak with a dense, brushy understory. The rim country is dynamic, affected by active erosional forces and high ecological gradients.

Volcanic Field and Ponderosa Pine Plateau

Figure 5. Little Elden Mountain

The volcanic field and ponderosa pine plateau character type is defined by two geographic regions: plateau country and the San Francisco volcanic field. The ponderosa pine plateau extends from the Mogollon Rim to the southern edge of the volcanic field. The gently sloping surface of the plateau is dissected by deep canyons that are geologically diverse. The higher elevations between 6,000 to 8,000 feet are characterized by cooler temperatures and a wetter climate. These conditions promote a vast montane coniferous forest characterized by ponderosa pine. Gambel oak is common, along with mountain mahogany, Arizona walnut, sycamore, serviceberry, and bitterbrush. Douglas-fir, southwestern white pine, and white fir occur in a few areas, and blue spruce may be found in cool, moist canyons. Pinyon-juniper occur in the area of Anderson Mesa and Walnut Canyon. Night skies have low light trespass and are heavily valued for star gazing. Outside of Flagstaff, there are few man-made constructions across the vast landscape.

The volcanic field, formed by a geologic hotspot, extends north to the Coconino Plateau. It is a mostly dissected plateau that contains hundreds of volcanos, the highest of which is found in the San Francisco Peaks, including Arizona's highest peak, 12,633-foot Humphrey's Peak. This high, dramatic cluster of peaks reaches into the subalpine and alpine zones. Crossing the foot of these mountains at around 9,000 feet, the AZNST passes through spruce fir forest similar to that found in the Rocky Mountains. The forest includes Engelmann spruce, cork bark fir, white fir and aspen. The understory community contains dwarf juniper, snowberry, currant, willow, and mountain grasses. Douglas-fir and ponderosa pine are found in lower mixed coniferous bands.

Lower elevations north of the San Francisco Peaks, between 5,000 and 7,000-feet elevation are dominated by pinyon-juniper woodlands that transition into dry grasslands and shrublands in the north. The open country allows for far-reaching views. Brilliant night skies have little competition from man-made light sources.

Plateaus and Canyons

Figure 6. Grand Canyon

The plateaus and canyons geographic region feature areas of high forested plateaus separated by the Grand Canyon. The plateaus differ in elevation and ecology from the canyons. The Coconino Plateau, south of the Grand Canyon, has gently rolling terrain mostly between 6,500 to 7,000 feet. The Kaibab Plateau starts at the North Rim of the Grand Canyon at about 8,000 feet. This high block plateau is tilted and gradually declines over the course of 65 trail miles to the Vermilion Cliffs, which are at approximately 5,000 feet. The Colorado River bisects the plateaus with a large, rugged canyon varying from 5 to 15 miles in width and 3,500 to 7,000 feet in depth.

The Coconino Plateau is an area of mostly pinyon-juniper woodland in the south and montane conifer forest in the north. Woodland transitions to forest as it climbs in elevation to the South Rim of the Grand Canyon. Pinyon-juniper woodland contains one-seed juniper, pinyon pine, cliffrose, Apache plume, and Ephedra. It is interspersed with sagebrush openings and species-rich savanna. Montane conifer forest is characterized by ponderosa pine and Gambel oak. There are no perennial water sources. Surface water is typically concentrated in stock tanks.

Open woodlands afford views to the south that include the San Francisco Peaks. As the Coconino Rim starts to break into the Grand Canyon, vantage points provide dramatic vistas. Carved by the Colorado River, the Grand Canyon is an area of extreme relief, rough topography, and diverse vegetation. Its high biological diversity can be attributed to the presence of five of the seven life zones and three of the four desert types in North America, which is equivalent to traveling from Mexico to Canada. Canyon walls are highly dissected and intricate with chasms and deep alcoves. They are composed of a series of terraces with cliff bands a few feet to thousands of feet high. Aspect and elevation dictate vegetation distribution that ranges from woodland to desert scrub. Along the river, willows, mesquite, catclaw acacia, and introduced tamarisk occur. Desert scrub communities exhibit influences from the Mojave, Sonoran, and Chihuahuan Deserts. Grand Canyon National Park serves as an ecological refuge. With relatively undisturbed remnants of

dwindling ecosystems, it is home to numerous rare, endemic (found only at Grand Canyon), and specially protected (threatened or endangered) plant and animal species.

The Kaibab Plateau is a high, broad, flat plateau that is dissected by shallow, open valleys. There are no perennial streams. Seasonally flooded basins and ponds are localized. Forests with ponderosa pine and Gambel oak occupy the North Rim of the Grand Canyon. At the highest elevations around 9,000 feet, subalpine forest grows with Engelmann spruce, corkbark fir and aspen. Patches of high elevation forest diversify the forest. The plateau descends back to montane ponderosa pine forest mixed with aspen. Recent wildfires have removed the coniferous overstory and encouraged aspen growth. A band of sagebrush-juniper woodland circumscribes the lower elevations of the plateau as it drops to the canyon lands of the Colorado Plateau. Views from the AZNST when approaching this area include bare slickrock with vivid red sandstones exposed as escarpments that include the brilliant Vermilion Cliffs, part of the BLM's Grand Staircase-Escalante and Vermilion Cliffs National Monuments.

Passages

The AZNST was divided into a system of 42 passages in the 1995 Arizona Trail Management Guide (USDA Forest Service et al. 1995). Another passage was added later to total 43 passages. Passages were envisioned as segments that could be traveled in relatively short periods of time, such as over a one to three-day period. The passages accommodate the needs of most trail users who want to hike or ride the AZNST in sections and were organized in terms of the presence of trailheads or good access points. The descriptive names of the passages emphasize the diverse and unique geography through which the AZNST passes.

The system of identifying the AZNST by passages is used by the Arizona Trail Association. The passages are adjusted periodically to incorporate the evolving alignment as the AZNST was developed. In recent times, with no formal protocol being followed between the partners for modifying passages, adjustments have been approved by the Arizona Trail Association Board of Directors after consultation with the agencies involved. The adjustments were reflected in public information and on signage during routine replacement. In some cases, beginning and end points were moved to correspond with jurisdictional boundaries, or to redistribute mileage after reroutes shortened or lengthened passages. The Arizona Trail Association also uses the passages system for the purposes of trail stewardship. All passages are divided into segments to make care and maintenance more manageable for AZNST stewards. These segments are listed at https://aztrail.org/explore/trail-stewards/

Passage 11e is an alternative route for bicyclists and equestrians around the Pusch Ridge Wilderness on the Coronado National Forest, Santa Catalina Ranger District. Passage 11e.is identified by the Arizona Trail Association and is signed, but it is not part of the congressionally designated route. The length of each passage may change in the future as realignments are completed. See the Arizona Trail Association website for detailed descriptions about each passage.

National Trail Planning Corridor

National Trail Planning Corridor for the Arizona National Scenic Trail

Section 7(a)(2) of the National Trails System Act requires the trail administering agency to select the national right-of-way for a national scenic or a national historic trail and publish notice of the availability of appropriate maps or descriptions of the right-of-way in the Federal Register (16 U.S.C. 1246 (a) (2)). For the national scenic trails and national historic trails administered by the Forest Service, selecting a national trail right-of-way is an administrative action undertaken by the Chief of the Forest Service (FSM 2353.04b). In contrast to a land management plan, a national trail right-of-way does not involve land use allocations. In contrast to a right-of-way authorized under Title V of the Federal Land Policy and Management Act, a national trail right-of-way does not authorize use and occupancy of federal land. Under the National Trails System Act, a national trail right-of-way includes an area of land of sufficient width to encompass National Trail resources, qualities, values, and associated settings.

In the context of the National Trails System Act, the national trail right-of-way is the area selected for the general location of a national scenic trail or national historic trail and published in the Federal Register. The national trail right-of-way does not constitute a land use allocation (which occurs through land management plans, congressional designations, and presidential proclamations) nor does it carry the legal rights and privileges typically associated with the term “right-of-way" outside of the National Trails System Act context.

To avoid confusion with other ways the term “right-of-way" is used outside the National Trails System Act context (such as in the Federal Land Policy and Management Act, Title V) and to avoid any implication of a right to use or access non-federal lands, the AZNST will instead adopt the term **national trail planning corridor**. Throughout this comprehensive plan and in future implementation of the plan, the national trail planning corridor indicates the area referred to as the “right-of-way" in Section 7 of the National Trails System Act (16 U.S.C. 1246). Use of the term “corridor” here is consistent with its use in EO 13195.

The national trail planning corridor will extend across the AZNST. However, the management context, and therefore the primary considerations and opportunities for the national trail planning corridor, differ for segments of the trail within and outside of federally administered areas.

- On Federal lands, the primary consideration is the managing agency’s responsibility to provide for the AZNST’s nature and purposes and to protect trail opportunities, settings, and values (for example, instances of the significant natural, historical, and cultural resources along the trail). Federal agencies are responsible for ensuring the values for which the trail was designated remain intact (EO 13195). The primary opportunity for the national trail planning corridor is to inform the managing agency’s identification, through its land management planning processes, of the area (such as management area, geographic area, mapped corridor, or similar) where it will establish and implement management direction to provide for the AZNST’s nature and purposes and other trail values. The national trail planning corridor provides a starting guideline for the managing agency to use in its land management planning. (See discussion regarding the national trail management corridor here.)

- On non-federal lands, the primary consideration for the national trail planning corridor is the opportunity to use tools identified in Section 7 of the National Trails System Act to achieve the objectives of completing the AZNST as a continuous and connected nonmotorized trail, to secure public access, to safeguard the trail settings and values, and to cooperate with non-federal land managing agencies and private landowners to provide for the AZNST's nature and purposes and other trail values. The National Trails System Act includes provisions and tools that may be used outside the boundaries of federally administered areas within the national trail planning corridor such as acquisition of lands and interests in lands from willing landowners and use of voluntary cooperative agreements to coordinate management of the trail across land ownership (16 U.S.C. 1244(a)(30), 1246). In most cases, the width of lands or easements acquired – or the width of any area voluntarily maintained to provide access for the AZNST by the managing agency or private landowner – will be less than the width of the national trail planning corridor. The national trail planning corridor is the broader area where, under the National Trails System Act, there is the opportunity, with willing landowners, to apply the provisions and tools in Section 7 of the Act.

This comprehensive plan provides a recommendation regarding the general location and width of the national trail planning corridor. This recommendation is a preliminary administrative recommendation that will receive further review and possible modification by the Chief of the Forest Service. The Chief is responsible for publishing the AZNST's national trail planning corridor in the Federal Register (FSM 2353.04b, item 4). However, selection of the national trail planning corridor requires broader coordination and consultation. Affected tribes will be consulted. Other Federal agencies that manage segments of the AZNST must concur with the location and width of the national trail planning corridor for lands they manage (16 U.S.C. 1246(a)(2)). Selection of the national trail planning corridor will be informed by the advice and assistance of states, local governments, private organizations, landowners, and land users concerned in order to minimize adverse effects upon adjacent landowners or land users (16 U.S.C. 1246(a)(2)).

The national trail planning corridor will be selected through a separate administrative decision and published in the Federal Register after this comprehensive plan is completed. Longer-established national scenic trails have taken different approaches to publishing the national trail planning corridor in the Federal Register (NPS Reference Manual 45, p. 96). The Forest Service will coordinate with the other Federal land managing agencies and relevant non-federal entities and determine which approach or combination of approaches would provide the best efficiency and effectiveness for the AZNST. A legal description for the national trail planning corridor will also be published in the Federal Register after the decision is signed.

Recommended National Trail Planning Corridor Location

At this time, the location of the recommended national trail planning corridor follows the congressionally designated route of the AZNST as determined by the Forest Service, and partner organizations based on the legislative map (see appendix A), the legislative history of the AZNST, and agency and partner organization data (such as geospatial data for trails and roads).

There are places where the AZNST is co-located with routes designated for motor vehicle use or otherwise not in the optimal location due to an unsustainable alignment, potentially conflicting uses, land ownership, or other factors. The travel-way for these segments will be selected on an "interim" basis until the optimal trail location is found. In these cases, the desired location, where known, will be identified as "desired". To the greatest extent possible, the location of the national

trail planning corridor will be selected to fulfill the nature and purposes of the AZNST. The above does not apply to sections where the AZNST, of necessity, follows public roads through incorporated or unincorporated communities.

Recommended National Trail Planning Corridor Width

The National Trails System Act, EO 13195, and other guidance for administration and management of national scenic trails and national historic trails recognizes the importance of lands and resources along the trail in contributing to the recreation settings, opportunities, and visitor experiences that a national trail provides.

Because of the important influence of scenery resources on visitor experiences for a national scenic trail, the width of the recommended national trail planning corridor for the AZNST is based on the Forest Service's Scenery Management System (see chapter 5) and includes the immediate foreground and foreground distance zones as the area that should be included in the national trail planning corridor. In addition to scenery in the immediate foreground and foreground viewing area, the recommended 1-mile minimum width would be wide enough to contain many (but not all) instances of the significant natural, historical, and cultural resources associated with the AZNST that support its nature and purposes (see chapter 3). It would also be wide enough to contain campsites, shelters, and other public use facilities (for example, trailheads and other trail amenities), as appropriate, along but at a reasonable distance from the trail.

The actual width of the selected national trail planning corridor can vary across the trail. To provide for the nature and purposes and other trail values, while considering effects upon adjacent landowners or land users, and other resource concerns, the national trail planning corridor should be wide enough to allow flexibility to identify an optimal location for the trail.

Relationship Between the National Trail Planning Corridor and the National Trail Management Corridor in Federal Land Management Plans

The national trail planning corridor and the national trail management corridor are related but distinct concepts. While the national trail right-of-way (referred to in this document as the national trail planning corridor) for the AZNST is selected by the administering agency for the trail (as delegated by the Secretary of Agriculture or Secretary of Interior) through an administrative process, the national trail management corridor for a section of a national scenic trail or national historic trail is established by the Federal managing agency through its land management planning process and policies (see chapter 1 and chapter 2). For example, for sections of the AZNST on National Forest System lands, the Forest Service selects the national trail management corridor through revision or amendment of the relevant forest plan(s) as an administrative change as identified 36 CFR 219.13 (c), and in accordance with guidance in Forest Service Handbook 1909.12, Chapter 20, and Forest Service Manual 2353.

For federally administered lands, the land management plan will include plan components to provide for the AZNST's nature and purposes and other trail values (see chapter 3) in accordance with the managing agency's policies. The national trail management corridor is the land area in which those plan components apply. Land managing agencies might use other terms for the national trail management corridor (for example, management area or geographic area) depending on agency policy.

Federal land management agencies should consider the following best management practices when selecting the national trail management corridor for the AZNST:

- The national trail management corridor will follow the location of the AZNST route in the national trail planning corridor. If the national trail planning corridor has not yet been published, the location should follow the Forest Service Corporate GIS data that is available for the agencies and the public to view through the Environmental Systems Research Institute (ESRI) Feature Service on-line platform.
- While the width of the national trail management corridor will be identified by the managing agency based on its policies and guidance, a width of 0.5 miles on either side of the trail's travelway should generally be considered to provide for the AZNST's nature and purposes and other trail values, with limited exceptions. In some areas, depending on topography, it may be appropriate to have the national trail management corridor based on the visible foreground from the trail, which may result in a national trail management corridor less than 1 mile wide. In areas adjacent to non-federally managed lands, the national trail management corridor may be less than 1 mile wide to avoid including non-federally managed lands. Where there are facilities or features associated with the trail but located off the trail travelway (such as viewpoints, campsites, or water sources), land managing agencies are encouraged to include them, in addition to the travelway, when establishing the width of the national trail management corridor to ensure features integral to the nature and purposes of the trail are adequately protected.

The managing agency should communicate with the Forest Service during the planning process to ensure the proposed national trail management corridor meets the relevant requirements of the National Trails System Act and EO 13195.

Relationship Between the National Trail Planning Corridor and Land Protection Outside Federally Administered Areas

Section 7 of the National Trails System Act includes provisions related to acquiring lands or interests in lands for a national scenic trail or entering into voluntary cooperative agreements with landowners to provide for the trail (16 U.S.C. 1246). These provisions apply in relation to the location of the national trail planning corridor.

For lands included in the national trail planning corridor that are outside the exterior boundaries of federally administered areas, the Forest Service will first encourage states or municipal governments to (1) enter into written cooperative agreements with landowners, private organizations, and individuals "to provide the necessary trail right-of-way" or (2) to acquire such lands or interests therein to be utilized as segments of the national scenic trail (16 U.S.C. 1246(e)). If state or municipal governments do not enter into written cooperative agreements or acquire lands or interests therein, the Forest Service may:

- enter into written or cooperative agreements with landowners, states, municipal governments, private organizations, and individuals for the use of lands for trail purposes (16 U.S.C. 1246(e)).
- acquire private lands or interests therein by donation or purchase with donated or appropriated funds (16 U.S.C. 1246(e)).
- acquire private lands or interests therein by exchange (16 U.S.C. 1246(e and f)); and

- acquire lands or interests therein from municipal governments or governmental corporations with the consent of those entities (16 U.S.C. 1246(e)).

More information on acquiring lands and interests therein for the AZNST, including management objectives and practices, is in chapter 5 and appendix F. Acquiring lands and interests therein for the AZNST should generally not occur until an optimal location review has been conducted for the segment(s) concerned to avoid acquiring lands that may not remain part of the AZNST if it is relocated in the future. More information on the optimal location review is in chapter 4.

Relocating Segments of the Trail

Relocation occurs when a segment of a national scenic trail needs to be moved outside[12] of the existing national trail planning corridor. Through relocation, the segment of the national scenic trail and the corresponding national trail planning corridor for that segment are moved to a new permanent[13] location. The National Trails System Act establishes the conditions under which relocation may occur.

Substantial relocations of segments of a national scenic trail shall only occur by Act of Congress (16 U.S.C. 1246(b)).

Non-substantial relocations of segments of a national scenic trail may only occur if all the following conditions are met:

- the administering agency[14] has determined that the relocation is necessary to either (1) preserve the purposes for which the trail was established or (2) promote a sound land management program in accordance with multiple-use principles;
- the heads of the Federal land management agencies[15] that manage the lands involved have concurred; and,
- notice has been published in the Federal Register of the availability of appropriate maps or descriptions (16 U.S.C. 1246(b), emphasis added).

Realignment of segments of the AZNST within the national trail planning corridor are not considered relocations under Section 7(b) of the National Trails System Act (16 U.S.C. 1244(b)) and are addressed in chapter 5 (see Trail Location and Design).

Relocation is an important tool to realize the nature and purposes of the AZNST as a continuous, nonmotorized trail consistent with the National Trails System Act. The goal of any relocation should be to select a location that is equal to or superior to the former location in terms of its ability to provide for the nature and purposes of the AZNST.

For the segments of the AZNST where the congressionally designated route is in a temporary interim location (such as on a road, motorized trail, or where public access is restricted) the

[12] Relocations differ in this way from realignments, which move the AZNST within the existing national trail planning corridor. Information on realignments is in chapter 5.
[13] Relocations differ in this way from temporary detours, which are routes visitors may use to travel around areas on the AZNST that are closed or impassable for a limited period of time. Information on temporary detours is in chapter 5.
[14] For the AZNST, this responsibility has been delegated by the Secretary of Agriculture to the Forest Service.
[15] Or their designees, as delegated by managing agency policy and practices.

administering agency, land managing agencies, landowners, and partner organizations will need to collaborate to identify a new location for the trail or use other tools (for example, constructing trail or converting roads to trails), as appropriate, so that the AZNST is on nonmotorized trails with secure public access and optimally located to provide for the nature and purposes and other trail values. Once the permanent location for that segment has been identified, the associated national trail planning corridor for the segment should be selected and notice of the availability of maps or descriptions should be published in the Federal Register.

Responsibilities and Process for Non-substantial Relocations

As the administering agency for the AZNST, the Forest Service has unique trail-wide responsibility for selecting the national trail planning corridor for the AZNST and for approving any non-substantial relocations[16] of the AZNST. All non-substantial relocations, including relocations involving lands owned or managed by agencies or entities other than the Forest Service, require the approval of the regional forester (FSM 2353) and concurrence of the relevant managing agency or agencies. The trail location must provide for the AZNST's nature and purposes (FSM 2353.43c).

Identifying the location of the AZNST route and the corresponding national trail planning corridor is an administrative action. Compliance with the National Environmental Policy Act and provisions of other laws (for example, the National Historic Preservation Act, Endangered Species Act, and the Wilderness Act) may be necessary for actions that would implement a relocation (for example, trail construction). The administering agency and managing agency will need to coordinate to identify the appropriate legal compliance required depending on the specific proposal.

Relocating trail segments requires close coordination and collaboration among the Forest Service, managing agency or agencies, partner organizations, and, as appropriate, tribes, landowners or land users, and gateway communities. Implementation may involve tasks such as mapping, surveying, trail design and layout, constructing and maintaining the trail and trail-related facilities, installing signs and kiosks, carrying out resource protection or restoration activities, mapping, updating visitor information, and educating visitors about the new location.

The process for a non-substantial relocation of the AZNST is as follows:

1. The proponent(s)[17] should notify and consult with the AZNST administrator as early as possible. The AZNST administrator will advise the proponent(s) on the conditions from National Trails System Act under which a relocation may be allowed and other relevant guidance, as well as the need for an optimal location review.
2. Conduct an "optimal location review" if one has not been completed for the area. (See optimal location review for more information.)
3. Develop an initial relocation proposal based on the results of optimal location review. In developing the proposal, the land managing agencies for the segment and lands concerned should engage the AZNST administrator and relevant partner organization(s). The initial

[16] Substantial relocations shall be by Act of Congress. (16 U.S.C. 1246(b))
[17] For segments within federally administered areas, the proponent should be the Federal managing agency or agencies. For segments outside federally administered areas, the proponent may be the administering agency, non-Federal managing agency, or a partner organization (in accordance with the provisions of cooperative agreements.)

relocation proposal should address the rationale for the relocation and its consistency with the optimal location review results (providing justification if there is inconsistency), and it should include maps and images to aid understanding. The initial relocation proposal should also indicate how the advice and, as appropriate, assistance of the states, local governments, private organizations, landowners, and land users concerned will be obtained (16 U.S.C. 1246(b)) and how tribes will be consulted. Submit the initial relocation proposal to the regional forester.

4. The regional forester will review the proposal and provide a timely preliminary determination of the consistency of the proposal with:

    a. Section 5(b) of the National Trails System Act (16 1246(b)) and

    b. this comprehensive plan (including any subsequent amendments or revisions).

    If the regional forester review indicates the proposal may potentially involve a substantial relocation, the regional forester will consult with the USDA Office of the General Counsel on consistency with item a. If the preliminary determination is not consistent with both items a and b, further coordination between the administering agency and proponent(s) is needed to refine the proposal before proceeding.

5. After the regional forester has provided an affirmative preliminary determination, the managing agency may initiate National Environmental Policy Act (NEPA) review if needed for projects associated with relocating the trail or trail-related facilities. The Forest Service and the managing agency should coordinate regarding the necessary NEPA documentation, if applicable, based on the specific proposal. In general, the managing agency will be responsible for complying with the NEPA and other applicable laws.

6. Prior to the managing agency issuing a final decision document, the regional forester will review the selected alternative and issue a final determination confirming its consistency with:

    a. Section 5(b) of the National Trails System Act; and

    b. this comprehensive plan (including any subsequent amendments and revisions).

    The final determination may document the implementation steps agreed upon between the administering agency and managing agency, such as constructing and marking the trail and developing updated maps and visitor information. If the determination is that the proposed action would not be consistent with items a and b, additional coordination is needed between the administering and managing agency.

7. After the managing agency issues a final decision. The regional forester will publish notice in the Federal Register of the new location of the AZNST segment and associated change to the national trail planning corridor for that segment; the notice may provide a timeline for when the relocation will go into effect (for example, after trail construction and marking is completed).

8. The managing agency will follow relevant agency policy and management direction to implement the project and communicate with the Forest Service regarding its progress. The Forest Service should assist with implementation, as appropriate.

9. Once the relocation is in effect, the new location is part of the AZNST, and the previous location is no longer part of the AZNST[18].
10. When the managing agency reviews the land management plan(s) for the area, it should ensure the national trail management corridor and associated management direction is sufficient to protect the AZNST and its nature and purposes in the new location. The managing agency is responsible for updating the land management plan(s) if needed. Similarly, the Forest Service will review this comprehensive plan to determine if the relocation warrants an update and make the update if needed.

Optimal Location Review

Trail relocations must be based on the results of an optimal location review. The purpose of the optimal location review is to identify the trail location that best provides for the nature and purposes of the AZNST into the future and satisfies other requirements of the National Trails System Act. The optimal location review is not a National Environmental Policy Act analysis or decision document. Rather, the optimal location review is a tool to inform and support administrative actions such as acquiring lands or interests in lands for the AZNST and, where necessary, relocating segments of the AZNST. The optimal location review helps the administering agency, land managing agencies, and partner organizations direct efforts to plan, develop, and protect the AZNST to the best long-term location and avoid misdirecting resources to temporary locations. Optimal location review has been used successfully to guide the development of other national scenic trails, such as the Continental Divide Trail and Pacific Crest Trail. The specific process and criteria are uniquely tailored to each trail, but the overall goal – to identify the best location to provide for the trail's nature and purposes – is the same for all trails.

Optimal Location Review Process and Documentation

In the future, the Forest Service may collaborate with the partner organization(s) and land managing agencies to develop additional guidance for the optimal location review process, such as a standard template for documentation. In the meantime, optimal location reviews should proceed using the guidance below.

At a minimum, the optimal location review team should include:

- the AZNST administrator (or their designee),
- a staff member or volunteer representing the partner organization(s) (in accordance with the provisions of relevant cooperative agreements),
- a recreation and trails specialist from each of the land managing agencies for the segment under review (or, for segments outside federally administered areas, a recreation and trails specialist from a nearby managing agency unit), and
- a landscape architect or other qualified scenery specialist.

The optimal location review team may include resource specialists as appropriate to the segment under review (such as lands and realty specialists, GIS specialists, and participants with expertise relevant to natural and cultural resources in the area such as wildlife biologists or archaeologists).

[18] The Forest Service may continue to collaborate with the managing agency or landowner to carry out tasks at the old location, as necessary, such as sign removal, trail decommissioning, resource protection, and restoration.

The composition of the optimal location review team would be decided by the regional forester and AZNST administrator in conjunction with the local management unit. The AZNST administrator provides coordination for the optimal location review team.

The optimal location review team will use a collaborative approach to agree on the optimal location for the segment of the AZNST under review based on the principles below and the professional judgement of the team members. The optimal location review will likely make use of existing data and resources (such as maps, geospatial data, photographs, land ownership information, visitor use data, resource inventories and assessments, land management plans, special area plans, and guidebooks or other media) but should also be informed by field visits and on-the-ground knowledge of the segment and area concerned. Strive to incorporate knowledge relevant to the managed uses (see chapter 3), which may be provided through input from the partner organization(s), volunteers, or managing agency employees.

Documentation of the optimal location review should include:

- A detailed map and general description of the optimal location, as recommended by the optimal location review team.
- Maps and general descriptions for other locations considered.
- A summary of the optimal location review team's evaluation of the optimal location and other locations considered based on the optimal location review principles in this section; and
- A summary or list of reference materials used in the evaluation.

The optimal location review document should be signed by the members of the review team. The optimal location review document should then be signed by the responsible officials or line officers for the local unit(s) of the relevant managing agency or agencies (for example, the district ranger and forest supervisor for National Forest System lands or the park superintendent for a national park). The approved document should be provided to the relevant managing agency or agencies and partner organization(s). It should become part of the administering agency's files and will serve as a recommendation for relocations; however as stated above, it is not a decision document, and any relocation would require subsequent review under the National Environmental Policy Act.

For some areas, processes similar to optimal location reviews were conducted prior to the completion of this comprehensive plan. These efforts may satisfy many of the steps for the optimal location review process. In that case, optimal location reviews may proceed toward completion from the steps that have already been taken. Realignment of segments of the AZNST within the national trail planning corridor are not considered relocations under Section 7(b) of the National Trails System Act (16 U.S.C. 1244(b)) and are therefore not subject to optimal location review.

Guiding Principles for the Optimal Location Review

The optimal location review is guided by the following 10 principles to evaluate location options:

1. Relocations are opportunities to improve the AZNST and better provide for its nature and purposes and other trail values.
2. Relocations promote the seamless connectivity of the AZNST and reduce the miles of the AZNST on roads and motorized trails.

3. Relocations favor public lands and legal easements over areas where public access cannot be permanently secured.
4. Relocations highlight the outstanding scenery and physiographic features and realize opportunities to improve the overall visual quality, scenic attractiveness, dark skies, and other wilderness characteristics of the AZNST.
5. Relocations provide high-quality settings and opportunities for the managed uses: hiking with an emphasis on long-distance backpacking, bicycling, bikepacking (where permissible) with an emphasis on long-distance and, where feasible pack and saddle stock use. In general, relocations should seek to improve the quality of the settings and opportunities for the managed uses.
6. Relocations generally favor natural surface trails, natural-appearing wilderness and nonmotorized backcountry settings (including lands with wilderness characteristics), or other places with less development and a more primitive level of access.
7. Relocations incorporate sustainable trail design elements and allow for a trail alignment on the ground that can sustain the types and amounts of expected use and can be maintained to avoid unacceptable environmental or financial costs.
8. Relocations would allow the trail to be developed and managed in a way that would harmonize with established multiple-use land management plans for that area.
9. Relocations minimize adverse effects on adjacent landowners or land users and their operations.
10. Relocations do not adversely impact or impede access to treaty resources; usual and accustomed fishing, hunting, and gathering areas; or areas of critical tribal concern for affected tribes. The optimal location review must not disclose sensitive information about the nature or location of cultural resources or areas of critical tribal concern.

Substantial Relocations

Substantial relocations are outside the authority of the Secretary of Agriculture (or the Forest Service) and require an Act of Congress (16 U.S.C. 1246(b)).

The regional forester should consult with the relevant managing agency and USDA Office of the General Counsel to determine if a proposed relocation would be substantial.

When reviewing proposed relocations to identify whether they may be substantial, consider, among other factors, the extent of the relocation and the degree of divergence from the following:

- the congressionally designated route of the AZNST
- the values for which the AZNST was designated (see chapter 3), and
- the trail-wide objective to maintain the AZNST as a continuous nonmotorized trail (see chapter 5).

Substantial relocations should be informed by the results of an optimal location review (see chapter 4). Even if the new location is specified by Congress (for example, in a case where the relocation was not proposed by the Forest Service or another Federal managing agency) the optimal location review can inform the trail alignment and design to implement the relocation.

The administering agency and the affected managing agency or agencies should coordinate and collaborate (as in steps 8 and 9 in the process for non-substantial relocations) to implement substantial relocations directed by an Act of Congress.

Chapter 5. Objectives and Practices for Trail Management

The National Trails System Act requires a comprehensive plan to include "specific objectives and practices to be observed in the management of the trail, including the identification of significant natural, historical and cultural resources to be preserved … details of any anticipated cooperative agreements to be consummated with other entities, and an identified carrying capacity of the trail and a plan for its implementation" (16 U.S.C. 1244 (e)(1)). This chapter addresses objectives and practices for management of the AZNST, including the carrying capacity of the trail[19]. These management objectives and practices also address the requirement for a general development plan for the AZNST (16 U.S.C. 1244(e)(3)).

Throughout this chapter, "nature and purposes and other trail values" is used to refer to the items in chapter 3: nature; purposes; managed uses; and significant natural, historical, and cultural resources and values to be preserved. "Administering agency" is used to refer to the Forest Service in its role as the administering agency for the AZNST; the regional forester of the Southwestern Region is the responsible official for trail-wide administration as delegated by the Secretary of Agriculture and the Chief of the Forest Service, and the AZNST administrator is the primary staff-level point-of-contact (see chapter 2)[20].

Trail-wide Objectives

The trail-wide objectives build on the AZNST's nature and purposes, further clarifying the vision for the trail; the trail settings, opportunities, and experiences; and the trail community of stewards and visitors. Additionally, the trail-wide objectives provide support for how the AZNST will "provide for maximum outdoor recreation potential and for the conservation and enjoyment of the nationally significant scenic, historic, natural, and cultural qualities" of the areas through which it passes (16 U.S.C. 1242(a)(2)).

The trail-wide objectives for managing the AZNST are:

1. Maintain the AZNST as a continuous, nonmotorized trail from the border with Mexico to the border with Utah.
2. Safeguard the AZNST's nature and purposes and other trail values.
3. Maximize the outdoor recreation potential of the AZNST by providing premier settings and nationally significant opportunities for hiking, horseback riding, and mountain bicycling where appropriate to the setting and allowed by local management, as well as other compatible non-motorized trail uses. Minimize conflicts between different modes of travel.

[19] The identification of resources to be preserved is addressed in chapter 3. Cooperative agreements are addressed in chapter 6. Additional information about the visitor capacity and its implementation is in chapter 3, appendix D, and appendix E.

[20] Forest Service units that manage segments of the AZNST and the lands along the trail (such as a national forest or ranger district) are considered managing agencies and, unless otherwise delegated, coordinate with the regional forester or AZNST administrator for the Forest Service's administering agency roles and responsibilities.

4. Support and contribute to the conservation of the scenic, historic, natural, and cultural qualities of the lands along the AZNST, and improve or maintain conditions on the ground. Minimize damage to soil, watershed, vegetation, and other natural resources.
5. Promote responsible public enjoyment of scenic, historic, natural, and cultural qualities of the lands along the AZNST. Cultivate a stewardship ethos in current and future generations of trail users that includes appreciation of natural, historical, and cultural resources and values and respect for the unique relationships tribal nations have with the lands through which the AZNST travels.
6. Foster a vibrant stewardship community that engages collaboratively to address challenges and achieve shared goals, consisting of non-governmental partner organizations and other private entities; volunteers; gateway communities; landowners; state, county, and municipal governments; tribes; and Federal agencies. As the Forest Service's primary non-governmental partner for the AZNST, the Arizona Trail Association plays an essential role in its stewardship.
7. Use an equity lens[21] to identify and address barriers that limit people's enjoyment of the trail and its benefits.
8. Sustain and share the collective knowledge and skills of trail stewards and visitors through training, education, and outreach, and facilitate continued learning and improvement.

Desired Conditions and Management Practices

Trail Location, Design, and Management

This section provides general guidance for the location and design of the AZNST. Because the AZNST is already established and in use, land managing agencies will mainly address location criteria when rerouting the trail off roads or other alignments that are not compatible with the nature and purposes of the AZNST. The National Trails System Act requires that national scenic trail comprehensive plans contain "general and site-specific development plans including anticipated costs" (16 U.S.C. 1244). This section serves to provide general development plans, while site-specific development plans are addressed in chapter 6.

Special Considerations

Private Land

Just over three percent of the AZNST currently crosses private lands and no substantial change is anticipated, long-term protection strategies should be analyzed as detailed within Appendix F. Section 7(a) of the National Trails System Act requires "full consideration be given to minimizing the adverse effects upon the adjacent landowner or user and his operation."

[21] The purpose of an equity lens is to be deliberately inclusive as an organization makes decisions. It introduces a set of questions into the decision that help the decision makers focus on equity in both their process and outcomes. Equity lenses can be customized for different organizations and decisions. The standard elements, however, ask for the decision makers to consider equity dimensions of involvement, process, values and assumptions, and outcomes, from a perspective that highlights how practices hold potential to shift power toward inclusion and equity. (https://www.nonprofitadvancement.org/files/2020/12/What-is-an-Equity-Lens.pdf)

National Parks, Monuments, Designated Wilderness, and Wild and Scenic Rivers

These are special areas created by Acts of Congress, Presidential Proclamations and State Legislatures. They have specific policies and objectives. The location of the AZNST through these areas will meet the specific policies and objectives of the area.

State Parks

One section of the AZNST passes through Oracle State Park. State Parks have specific guidelines and policies that the State uses to manage the trail.

Gateway Communities

Where the AZNST passes through or near gateway communities it may follow municipal trail systems that are designed for non-motorized multi-modal transportation.

State Trust Land

State Trust Land is not public land and is managed by the Arizona State Land Department for specific purposes pursuant to the State's 1910 enabling act (H.R. 18166). Where local governments or Federal agencies have acquired rights-of-way or easements for the AZNST, it is managed by them according to the terms in the legal instrument.

Existing Law, Regulation, and Policy

House Report No. 90-1631 (chapter 3) clearly points to locating national scenic trails in areas consistent with primitive or semi-primitive non-motorized settings[22] to the extent practicable. For the AZNST, this is also supported by the legislative history.

Desired Conditions

1. The AZNST's alignment is located on public lands, legal easements, or rights-of-way.
2. The largest portion of the AZNST possible is situated in undeveloped settings that optimize opportunities to experience the State's outstanding scenery and natural wonders.
3. The AZNST location provides opportunities for interpretation of interesting natural phenomena, resource management, and natural and human history along the trail.
4. The AZNST alignment provides for a variety of non-motorized outdoor recreation potential while also providing for a long-distance trail experience.
5. The AZNST tread provides for a continuous, durable, and sustainable trail designed to create minimal disturbance to the environment, while accommodating the volume and types of recreational activities.
6. Scenic integrity of the AZNST is managed for the equivalent of the Forest Service Scenic Integrity Objectives of High and Very High in the national trail planning corridor through land management or, as appropriate, realignment of the trail

Management Practices

Agencies managing the AZNST are encouraged to incorporate the following management practices into their respective management plan and adopt guidance and policies to incorporate them.

[22] As outlined in the Recreation Opportunity Spectrum.

Scenery

1. Locate and maintain the AZNST to display the greatest variety of natural beauty and panoramic scenery.
2. Blend the AZNST with the terrain by taking full advantage of the natural topography and vegetation.
3. Management activities should enhance or sustain the current variety of vegetation types and geologic features found along the AZNST.
4. Include access to the most favorable and impressive views of scenic features.
5. Where possible, avoid views of heavily developed or industrialized areas. Incorporate topographical screening of less desirable views when possible.
6. Management actions within one-half mile of the Arizona National Scenic Trail should not result in recreation setting changes from less to more developed unless for the purpose of constructing or improving trail access or trail related facilities.
7. Strive to locate the AZNST as single-track tread except where proximity to urban areas, popular recreation sites, or existing infrastructure dictates the need for a wider trail to accommodate the level or types of use, including use for emergency access.
8. Work with the Arizona Trail Association and adjacent landowners and agencies to maintain the national trail planning corridor and the condition and natural character of the surrounding landscape.

Archaeological Sites, Historic Features and Natural Resources

1. Avoid or protect cultural resources and sensitive natural resources.
2. Avoid impacts to archaeological sites to the extent practicable.
3. Incorporate sites that are appropriate for interpretation when possible.

Utility Corridors

1. Placement of new utility corridors and communication facilities should be avoided by choosing alternate locations or co-locating them with existing utility corridors and facilities.
2. Utility lines should be buried when feasible to mitigate visual impacts. Where environmental, cultural, economic, or technical concerns prevent the burial of utility lines, site-specific design features should be developed to protect scenic values.

Stream, Highway, and Railroad Crossings

1. Seek reliable crossings by means of bridges or underpasses, except at low volume roads or railroads that can be safely crossed at grade. Special consideration should be given to equestrian safety concerns. When bridges or other facilities are located in wilderness, determine if they are still needed. If they are needed, determine the minimal tool to use for replacement.
2. Seek encroachment permits or other documented permission for existing and new railroad and highway crossings.
3. Provide for visibility at crossings through development of safety infrastructure such as road signs, striping lights, user-activated signals, and pedestrian barriers.

4. Take advantage of natural or existing features to afford an easy and quick crossing without breaking the continuity of the trail.
5. Coordinate on future highway construction to make crossings as aesthetically pleasing as possible.
6. Cross features such as roads, power lines, and pipelines perpendicular to avoid prolonged visual contact with them.
7. Avoid alignments following stream channels or washes to minimize impacts to banks. When alignments along stream channels or washes cannot be avoided, place the trail on side-slope to reduce danger from flash floods, unless doing so would create increased resource impacts.

Facilities

1. Connect the AZNST to parking areas, campgrounds, public corrals and other like facilities through side trails, rather than passing directly through them, when such facilities are determined to be appropriate through analysis of resource capability and use demand. Provide general information about the AZNST where possible at facilities.

Soils

1. Areas of dense biological soil crusts should be avoided for trail placement and relocation or placement of trail-related facilities because these crusts help reduce wind and water erosion.
2. Trail design should ensure that runoff water and drainage from the trail is routed off the trail or collected in a stabilized area or sediment basin. Natural drainage patterns should not be disrupted or moved.

General

1. Manage the AZNST national trail planning corridor consistent with the comprehensive plan once the plan is completed.
2. Avoid new road or motorized trail construction across or adjacent to the AZNST unless needed for resource protection or to meet statutory requirements, such as mining law or laws to protect public health and safety.
3. Work with the Arizona Trail Association and adjacent landowners and agencies to maintain the national trail planning corridor and the condition and natural character of the surrounding landscape.
4. Manage permitted recreation special use authorizations to protect the desired recreation setting for a nonmotorized trail.
5. Select realignments of the AZNST through a coordinated process among affected agencies and partners. This should include optimal location criteria for choosing a location that will support trail development consistent with this comprehensive plan and that will best enable the realization of the AZNST's nature and purposes to contribute to achieving the desired trail setting and visual quality objectives. This process will not replace NEPA review requirements.
6. Where changing conditions make it necessary to move the AZNST to preserve its nature and purposes, the managing agency should select a route that is equal to or superior to the former alignment, and to replace in-kind, or with improvement, any associated facilities. As the administering agency for the AZNST, Forest Service, in coordination with managers whose

land the AZNST crosses, is responsible for selecting the National Trail Right-of-Way for the trail and ensuring relocations preserve or enhance the nature and purposes for which the trail was established (FSM 2353.43c). Substantial relocations require an act of Congress (16 U.S.C. 1246(b)).

7. Management agencies must strive, through cooperative effort with private landowners, to agree on a trail location that is compatible with the nature and purposes of the trail, and to reduce adverse effects on the landowners. The main objective should be to provide protection of trail values and resources, including long term continuity as required by the NTSA. The optimal location will be on lands that are publicly owned and managed or controlled through easement.
8. The purpose of the AZNST is the same as existing policies and objectives outlined for National Parks, State Parks, and units of the Wilderness Preservation System, but special management measures may be needed to protect the resources in other designated special areas.
9. In gateway communities it is expected that the trail setting will be more rural than urban, and the trail width and surfacing will be designed to conform with standards or guidelines established by local jurisdictions. Acquisition of land or interest in land may not be possible and may force the AZNST onto streets or sidewalks for short distances. Opportunities to access communities for resupply and other services are critical to trail users and should be improved whenever possible. When possible, access amenities and services in rural and urban settings through establishment of side trails leading to and from these settings, rather than by locating the AZNST in those settings.
10. For the purposes of new construction, state trust lands should be treated as private lands and the land or interest in land must first be acquired, usually by the local government under whose jurisdiction that section of the trail exists; or a state, county, or Federal agency who manages sections of the AZNST adjacent to the State Trust Land.
11. Where no other alternatives exist, relocate the AZNST to avoid substantial interference with the AZNST's nature and purposes. Choose a setting that meets or exceeds the qualities and recreational value of the former location.
12. FSM 2353.04g assigns responsibility for approving the location of the AZNST to the regional forester on national forest lands. Other agencies may realign the AZNST on the lands they manage[23].
13. Use optimal location review when identifying a proposed route for AZNST relocations.
14. For projects along the AZNST consult with the trail administrator, partners, and the recreation, trails, and planning staffs of the relevant agencies to ensure plans are referenced and followed.
15. Provide access points at reasonable distances along the AZNST so visitors can choose different trips of varying lengths and have opportunities to resupply on long distance trips.
16. Create opportunities to provide water for trail users and stock, emphasizing a shared-use approach.

[23] The trail administering agency is responsible for certifying new trail sections as part of the national scenic trail.

17. Do not locate or relocate the AZNST onto or near established motorized routes.
18. Create below-grade road crossings according to equestrian design standards when highway bridges are built or redesigned.
19. Where feasible, use equestrian design standards when constructing or improving the AZNST and build it wide enough in steep or hazardous areas to allow safe passage for horses and pack stock.
20. Where temporary and emergency routes are needed, follow routes that maintain the character and uses of the AZNST to the greatest extent possible, and avoid unsafe locations such as paved roads.

Trail Mapping (Geographic Information Systems)

There is a need for consistent methodology for collecting and sharing geographic information systems (GIS) data. To facilitate the centralization, maintenance and sharing of spatial data, one authoritative geodatabase was compiled by the Forest Service, Southwestern Region GIS Program staff using the Federal Trail Data Standards (FTDS). The geodatabase schema[24] was based on the Federal Trail Data Standards (Federal Trail GIS Schema Template 2022). The methods included standardizing GIS data, through a Feature Service. The use of a Feature Service allows the Forest Service, Southwestern Region, to verify then incorporate new or revised trail alignments into the authoritative geodatabase. The Feature Service is available online Southwestern Region GIS Data website (https://www.fs.usda.gov/detailfull/r3/landmanagement/gis/?cid=stelprdb5201889). Refer to appendix B for more information about the AZNST authoritative geodatabase.

Management Practices

1. As the administering agency for the AZNST, the Forest Service will maintain the authoritative GIS geodatabase.
2. Standardize the workflow for collecting and publishing AZNST GIS data using Federal Trail data standards and a Feature Service to assure the trail alignment remains current and relevant for agencies and organizations.
3. This comprehensive plan adopts the AZNST Feature Service as described in appendix B.

Connecting and Side Trails

In addition to national scenic, national historic, and national recreation trails, the National Trails System Act established a fourth category, connecting and side trails (16 U.S.C. 1242(a)(4)). The purposes of such trails are to provide additional points of public access to the above-mentioned trails, or to provide connections between such trails.

Connecting trails complement designated national recreation, scenic, or historic trails by providing additional points of public access between or connecting to such trails.

[24] A database schema defines how data is organized within a relational database. Schemas commonly use visual representations to communicate the architecture of the database, becoming the foundation for an organization's data management discipline. This process of database schema design is also known as data modeling. Feature services allow you to serve feature data and nonspatial tables over the internet or your intranet.

Side trails complement designated national recreation, scenic, or historic trails by providing additional single points of public access to special features along such trails.

While there are already many trails that provide public access to the AZNST or special features along it, connecting and side trails differ in that they are designated as components of the National Trails System. The National Trails System Act clarifies the process by which connecting or side trails are established, designated, and marked:

> Connecting or side trails within park, forest, and other recreation areas administered by the Secretary of the Interior or Secretary of Agriculture may be established, designated, and marked by the appropriate Secretary as components of a national recreation, national scenic or national historic trail. When no Federal land acquisition is involved, connecting or side trails may be located across lands administered by interstate, State, or local governmental agencies with their consent, or, where the appropriate Secretary deems necessary or desirable, on privately owned lands with the consent of the landowners. (16 U.S.C 1245)

However, this authority to designate connecting or side trails has rarely been used. At the time of this plan, there are only eight connecting or side trails in the National Trails System (for comparison, the National Trails System includes 11 national scenic trails, 21 national historic trails, and nearly 1,300 national recreation trails.) The only national scenic trails with complementing connecting or side trails are the Florida National Scenic Trail and Ice Age National Scenic Trail.

Connecting or side trails are not required to have their own national trail planning corridor. In land management plans, land managing agencies may include the connecting or side trail in a management area or corridor for the national scenic trail or national historic trail they complement. Land managing agencies may have policies that provide direction for the management of connecting or side trails on the lands they manage (for example, the Forest Service's FSM 2353 and the Bureau of Land Management's BLM Manual 8353). The designation of connecting or side trails should be used judiciously and with full consideration for future administration and management needs.

Desired Conditions

1. Connecting or side trails, if any, complement the AZNST's nature and purposes, provide for the AZNST's managed uses, enhance the AZNST trail experience, and help to realize the AZNST's maximum outdoor recreation potential.
2. Connecting trails, if any, are high-quality routes for AZNST visitors to connect to and from gateway communities; other national scenic, national historic, or national recreation trails; and other areas, to provide opportunities for day and multi-day trips that include the AZNST.
3. Side trails, if any, are high-quality routes for AZNST visitors to access special features along the AZNST that support its nature and purposes such as locations associated with significant natural, cultural, or historic resources. Side trails provide for both conservation and enjoyment of these significant resources.
4. Any connecting or side trails are managed in a manner to complement the AZNST and its settings, and do not introduce incompatible types or levels of use.

Management Practices

1. Apply the terms "connecting trail" and "side trail" for only those trails designated as components of the National Trails System under 16 U.S.C 1245.

    - Use other terms for trails that have not been designated as components of the National Trails System that provide access to the AZNST or features along the AZNST (for example, access trail, feeder trail, connector trail, bypass trail, spur trail, local trail, ancillary trail).

Planning and designation for connecting or side trails

1. The regional forester has unique trail-wide responsibility for administratively designating any proposed connecting or side trail for the AZNST, including those on lands managed by agencies or entities other than the Forest Service. The concurrence of the relevant managing agency or landowner is required.

    a. Land managing agencies should notify and coordinate with the AZNST administrator as early as possible in the development of a proposal to develop or designate a new connecting trail or side trail for the AZNST.

    b. Together, the administering agency and managing agency should determine, based on the specific proposal, the necessary National Environmental Policy Act documentation, if applicable, and other legal compliance required. In general, the managing agency will be responsible for ensuring relevant National Environmental Policy Act and other legal compliance requirements are met, using its agency policies and processes, and for consulting with affected tribes.

2. In general, potential connecting trails or side trails should be identified or approved in relevant managing agency plans or have documented support from relevant tribal, state, county, and municipal governments, and partner organizations. Prior to designation as a connecting or side trail, these trails may wholly or largely exist on the ground and may be in use by the public.

3. In addition to relevant agency policies and plans, the following should be considered in planning for a connecting trail or side trail:

    a. the National Trails System Act and its requirements;

    b. complementarity with the AZNST based upon the nature and purposes and other trail values (see chapter 3) and the trail-wide objectives, desired conditions, and management practices in this comprehensive plan;

    c. the results of any optimal location review for the area;

    d. tribal consultation and involvement of partner organizations, volunteers, and the public as part of the identification, evaluation, and recommendation process;

    e. coordination with adjacent landowners and land users;

    f. current data and any future projections related to amounts and types of visitor use;

    g. short and long-term needs for development and maintenance of the connecting trail or side trail (including any land acquisition needs) and the responsibilities and capacities of the administering agency, managing agency or agencies, and partners to provide for these needs (including budgetary and staffing considerations); and

h. the cumulative impact and value of connecting trails or side trails across the AZNST and for the National Trails System.

Managing Connecting or Side Trails

1. Identify the trail in visitor information (such as websites and trailhead signs) as a connecting trail or side trail and provide information about its relationship to the AZNST and its unique features and significance.
2. Mark the connecting trail or side trail on maps and on the ground in such a way that it would not be confused with the AZNST.
3. Monitor relevant aspects of the connecting trail or side trail (for example, visitor use and resource conditions) and take appropriate management actions to ensure the connecting trail or side trail is compatible with the AZNST's nature and purposes, significant resources, managed uses, and desired conditions.

Managed Trail Uses

The managed trail uses are hiking, horseback riding, and mountain biking. These are not the only uses mentioned in the legislative history leading to the AZNST's designation, but a trail designed for these uses can accommodate most other forms of non-motorized trail use.

Thru-hikers and riders most commonly complete the AZNST from south to north in the spring. North to south hiking or riding typically occurs in fall and early winter. Generally, mountain bike use is allowed on the AZNST, with exceptions that are described in the next section. On National Park Service trail sections, bikes are only allowed where special rules have been established. Suggestions for mountain bike bypass routes on roads or other trails for all passages are available on the Arizona Trail Association website, except for Grand Canyon. Here, mountain bikers have the option of packing their bike through the Grand Canyon or must send it to the opposite side by shuttle or other means. This allows mountain bikers to complete the entire AZNST through a combination of biking and, in the Grand Canyon where bicycle wheels are not allowed to touch the ground, hiking. The entire AZNST is available to equestrians; however, there are several sections where horseback riding is not recommended due to extreme, rough terrain. There is an equestrian route around the City of Flagstaff, designed to give the equestrian user an alternate route around Flagstaff to avoid the busy city traffic and also to provide a safe way to cross Interstate 40.

Some visitors choose to complete the AZNST in sections; hiking, biking, horseback riding, or running the entire AZNST over several years. Whether it is accomplished all at once, or one section at a time, the Arizona Trail Association recognizes trail finishers by keeping a list of official finishers on their website. By completing a survey, trail finishers may also receive a finisher's award.

The AZNST also provides prime day-use trail opportunities, especially near gateway communities and local trailheads. Organized trail events are becoming increasingly popular, especially for trail running and mountain biking, and are often held near gateway communities.

Existing Law, Regulation, and Policy

Prohibited Trail Uses

Several uses are specifically prohibited on the AZNST to comply with the non-motorized trail designations and to protect the nature and purposes of the AZNST.

1. Motorized (including E-bike) use by the public on or along any national scenic trail is prohibited by 16 U.S.C. 1246, except as specified in the trail's enabling legislation, or for very specific exceptions authorized by regulation, or specific to private lands that are part of the trail by agreement. Sections where the trail alignment is co-located with existing open roads or utility rights-of-way with motorized use that predates the AZNST are considered interim routes, and therefore not subject to 16 U.S.C. 1246 (see chapter 4).
2. Motorized use of the AZNST is only allowed where interim sections are co-located on open, public roads.
3. Although mountain biking is encouraged on a majority of the AZNST, mountain biking is not allowed within designated wilderness, or on some trails within national park units. Mountain bike bypass routes have been identified and are described on the Arizona Trail Association website.
4. In a few areas where the AZNST is paved, such as the Greenway Trail at Grand Canyon National Park, South Rim, e-bikes are permitted. However, e-bike use is not consistent with national scenic trail designation, nature, and purposes. In areas where e-bikes are allowed, such locations are interim routes for the trail and a relocation or realignment should be examined.

Desired Conditions

1. The AZNST provides opportunities for continuous, long-distance hiking, horseback riding, and mountain biking, in addition to other trail-related, non-motorized activities.
2. New and emerging trail uses, and trail use trends are monitored to ensure compatibility with the nature and purposes of the AZNST.
3. Multiple non-motorized trail uses are promoted on a shared-use trail, consistent with local land management direction. Conflicts between different types of non-motorized trail activities are minimal and do not interfere with the nature and purposes of the AZNST.

Management Practices

1. Construction of new motorized routes across the AZNST should be avoided, however motorized crossings of the AZNST are allowed in some existing locations, per local motor vehicle use plans.
2. Managers should strive to relocate AZNST sections co-located on motorized routes to non-motorized single-track trail.
3. Motor vehicle use by the public is, by law, prohibited on all sections of the AZNST. Sections that are collocated with open motorized routes are interim routes for the AZNST and should be relocated or the motorized use should be terminated to comply with the NTSA. Motorized use may be authorized where it is consistent with the applicable land management plan, and meets one of the following criteria:
    a. It is necessary to meet emergencies (SEC. 7. [16USC1246] (c).

b. It is necessary to enable adjacent landowners or land users with valid existing rights to have reasonable access to their lands or rights.

c. It is for the purpose of allowing private landowners who have agreed to include their lands in the AZNST by cooperative agreement, and to use or cross those lands or adjacent lands from time to time.

4. Designation of areas and trails for over-snow vehicle use (Travel Management Rule Subpart C) should consider the proximity of the AZNST and potential impacts to quiet, non-motorized winter recreation opportunities along the AZNST. Designation of over-snow vehicle use within the AZNST national trail planning corridor should be avoided unless necessary for connectivity between designated over-snow vehicle areas.

5. Where previously designated over-snow vehicle-use routes or areas exist on either side of the AZNST, reasonably spaced over-snow vehicle crossings may be designated in local winter travel management plans. Avoid designating over-snow vehicle routes that parallel the AZNST in close proximity.

6. Where the AZNST coincides with wilderness, management of the AZNST and its associated uses must be compatible with wilderness management.

7. While multiple types of non-motorized use are appropriate and encouraged, non-motorized uses that conflict with local management direction, trail design, natural or cultural resources management, or interfere with the managed uses of the AZNST may be limited or prohibited on all or a portion of the trail, to maintain the nature and purposes of the AZNST.

Special Use Authorizations

There is demand for a variety of uses of the federally administered lands that the AZNST travels through. Federal land management agencies authorize certain special uses of federally administered lands that provide a benefit to the general public. For example, for National Forest System lands (managed by the Forest Service) a definition of special uses is provided in 36 CFR § 251.50:

> All uses of National Forest System lands, improvements, and resources, except those authorized by the regulations governing sharing use of roads (§ 212.9); grazing and livestock use (part 222); the sale and disposal of timber and special forest products, such as greens, mushrooms, and medicinal plants (part 223); and minerals (part 228) are designated “special uses.” (36 CFR § 251.50)

A special-use authorization is a legal document such as a permit, lease, or easement, which allows occupancy, use, rights, or privileges of or on federally managed lands. Not all uses and activities on federally administered lands are considered special uses. For example, for National Forest System lands, some recreational uses, such as camping, hiking, fishing, boating, hunting, and collecting of minor (nontimber) forest products for personal use, do not require a special use authorization, nor does travel on open roads, or noncommercial activities such as expression of views, unless certain criteria are met.

Any special uses that occur along national scenic trails may not substantially interfere with the nature and purposes of the trail:

> Other uses along the trail, which will not substantially interfere with the nature and purposes of the trail, may be permitted by the Secretary charged with the administration of the trail. (16 U.S.C. 1246(c))

Recreation Special Use Authorizations

Providing recreation services and facilities is a key part of Forest Service and other land management agencies' missions. Special uses include commercial recreational uses, for example, outfitting and guiding services, resorts, recreation activities and events, photography and video productions, and concession campgrounds, as well as noncommercial organized group activities and events. A special use permit is required for any temporary event on National Forest System lands where an entry or participation fee is charged, or where paid membership in a group or organization is a prerequisite for participation. Examples of recreation events may include trail running events, mountain biking races, fundraising hikes, adventure games, and other similar events. A permit is required for these types of events, regardless of the number of people involved in the activity. Recreation event permits are subject to fees and commercial liability coverage.

Although many visitors possess the necessary knowledge, skills, and equipment to be self-sufficient in remote and challenging environments, others may not have the capability to participate in such activities on their own or may prefer to participate in guided activities provided through an organization or business. Commercial goods or services provided by outfitters and guides help to meet these needs. **Outfitters** rent and/or deliver equipment, supplies, pack and saddle stock, vehicles, and other items on or to public lands; while **guides** provide education, training, transportation, interpretation and other services to individuals and groups.

Other Special Use Authorizations

There are many other diverse types of special uses of federally managed lands. Energy uses include wind, solar, fossil fuel, hydroelectric, geothermal, biomass, oil, and gas. Agriculture uses include cultivation, irrigation, ditches, and diversion dams. Industry uses include construction camps and residences, storage, and manufacturing. Water uses include drinking water, energy generation, irrigation, and recreation use. Research uses includes experimental stations, research studies, and weather stations. Transportation uses include road and highway systems, airports, heliports, and canals. Community uses include meetings, religious facilities, and sanitary systems.

Communication uses includes transmission of data, sound, and signals by wire, fiber, radio, light, or other means. Not all these uses are allowable or appropriate on all lands. Management direction regarding these uses may be found in managing agency policies, local land management plans, or both. As part of the screening and review processes for special use authorizations, managing agencies should also ensure that the proposed use will not substantially interfere with the AZNST's nature and purposes. Additional management practices and desired conditions related to other special use authorizations are found later in this chapter in the Corridor and Resource Protection and Management section under Multiple Use.

Existing Law, Regulation, and Policy

Forest Service, National Park Service, and BLM have regulations that require permits for commercial, organized, and competitive activities. By permitting these activities, operators can provide needed services subject to permit conditions or stipulations to protect the AZNST's nature and purposes. Careful review of recreation special use proposals can ensure that key services are provided to the public that support enjoyment of the AZNST, while avoiding impacts to the nature and purposes of the trail.

Permitted outfitter-guide services provide guided hiking, mountain bike riding, horseback riding, and shuttle services along various sections of the AZNST. In addition, the Arizona Trail

Association supports an abundance of trail events, including hikes, trail work, trail running, organized trips and volunteer vacations.

There are currently seven regularly scheduled, permitted trail running events that feature sections of the AZNST. They include the Oracle Rumble, Vail Scramble, North Rim Ramble, Flagstaff to Grand Canyon Stagecoach Line Ultra, Colossal Vail 50/50, Old Pueblo Endurance Runs, and Arizona Trail Race. Running events organized by the Arizona Trail Association benefit the maintenance and protection of the AZNST.

Desired Conditions for Uses

1. Permitted activities, such as special events and permitted commercial outfitter-guide uses on the AZNST, and within the AZNST national trail planning corridor, do not interfere with the nature and purposes of the AZNST.
2. Where appropriate, commercial organized activities and competitive uses will be allowed under approved permits issued by the appropriate land management agency in consultation with the Arizona Trail Association. Permit holders and event organizers comply with all terms and conditions of the permits.
3. The permitted uses contribute to providing education and information about the AZNST and the unique environments through which it passes. They provide options for connecting people, especially youth, to nature, and helping to facilitate the use and enjoyment of the AZNST by diverse trail enthusiasts.

Management Practices

1. Public use of the AZNST shall be encouraged to the degree it does not degrade the AZNST's scenic, cultural, or recreational values. Where commercial use is consistent with the AZNST's nature and purposes, such activities will be allowed by permit issued by the local land managing agency.
2. New permitted activities – such as events and outfitter-guide permits – should be evaluated with the objective of preventing interference with the nature and purposes of the AZNST as the primary consideration. The local land management agency will consider:
    a. Time of year, duration of the event, or permitted use.
    b. Potential beneficial or adverse effects on other trail uses, and the trail experience.
    c. The cumulative impact of other permitted activities in that region of the AZNST.
    d. Use the following criteria and considerations when evaluating applications for special event and commercial use permits:
        i. Is the proposed use or activity compatible with the National Trails System Act, the comprehensive plan, and other agency policy pertaining to national scenic trails?
        ii. Is the proposed use or activity dependent on the national scenic trail setting, or could it be accommodated elsewhere?

            Note: competitive events generally promote faster forms of travel with a greater potential for interference with other trail users' enjoyment of this congressionally designated trail. Agencies will determine whether other trails might meet the needs of applicants before deciding to issue permits on the AZNST.

iii. Are the proposed operations and activities appropriate for the specific recreation opportunity settings and desired conditions within the trail segment?

iv. Are the proposed operations and activities impacting visitor capacity thresholds for a particular use as they relate to trail tread and trail corridor impacts, and social conflicts?

3. Assess how the activity may affect the natural environment, and what mitigation measures or operating plan requirements could be put in place to avoid potential impacts.
4. Event information and permitted activities include a Leave No Trace™[25], Share The Trail, and trail user ethics message in the terms of the permit.
5. Assess the social concerns associated with the proposed use or activity, such as user conflicts, displacement, or safety issues. Can these be mitigated? If so, how?
    a. Limit the number of large group events (defined by the permit and administering agency) that occur during the peak thru-hiking seasons (primarily northbound from February through April, and southbound from October through December). Consider opportunities to shift event dates to avoid this timeframe.
    b. If numerous requests for permitted events are received, consider a limitation on the number of activities per trail section, per year. Carefully consider how permitting one activity may affect the long-distance trail experience in light of other activities occurring along the AZNST.
    c. Consider adjusting the timing of the activity to avoid busy trail use periods. Consider weekday versus weekend use, whether there is a need to provide access points for spectators, pulse starts to minimize the number of participants on the trail at once, and total participant numbers.
    d. Consider the potential benefits the proposed use may provide the AZNST, trail users, and local communities.
    e. Monitor where possible to confirm compatibility of the permitted activity according to an operating plan and with the desired conditions for the AZNST segment. How can the monitoring be feasibly accomplished?
6. To preserve the desired trail experience and mitigate potential conflicts, special use activities should be coordinated with managing agency recreation and trails staff and management and the Arizona Trail Association.
7. For consistency and to minimize the number of permits needed, coordinate across jurisdictions when permitted uses cross boundaries and explore issuing joint use permits.
8. Issue commercial use permits, such as for outfitter and guide services, when the activity enhances the trail experience, is consistent with its nature and purposes, and meets local land management objectives.
9. To ensure compatibility with AZNST values, issue only temporary authorizations for new uses and monitor effects of the permitted activity on AZNST desired conditions or objectives.
10. Permits for motorized activities on or crossing the AZNST would not be issued if the use would substantially interfere with the AZNST's nature and purposes.

[25] https://lnt.org/

Uses that Require Permits

Existing Law, Regulation, and Policy

Currently permits are not required for a long-distance hike or ride along the AZNST, however permits are required for overnight camping in a few areas. Required permits for these areas are not managed by Forest Service and need to be obtained directly from the land management agency for lands on which the sites or areas are located (National Park Service and Arizona State Land Department). The Arizona Trail Association website maintains contact information and links for the various agency permit requirements.

Currently, the following permits are required for camping:

Colossal Cave Mountain Park

Fee for camping and camping limited to designated campgrounds.

Saguaro National Park

Camping permit required and camping limited to developed campgrounds.

Grand Canyon National Park

Camping permit required and camping limited to developed campgrounds. Permits are limited and must generally be arranged in advance of arrival.

Arizona State Trust Lands

State land recreation permit is required to camp outside of the trail right-of-way for the AZNST.

Wilderness Areas

Several wilderness areas have management direction in their respective plans indicating that permit systems may be considered in the future. Information about any future permit requirements would be posted on the Arizona Trail Association website and permit administering agency websites, as appropriate.

Management Practices

1. Implementation of any additional permit requirements along the AZNST should be coordinated between the managing entities.
2. Establish a joint use permit system for logical sections of AZNST that involve multiple jurisdictions to simplify the through travel experience for trail users.

Trail and Facility Development and Management

Although protection of the predominantly natural and primitive settings along the AZNST is paramount, there are a number of facilities that are necessary and appropriate or desired by trail users and land managers. Trail and facility design should not detract from the setting but should sustainably accommodate the managed uses of the AZNST. This section identifies desired conditions and management practices to help managers build and maintain the AZNST and provide facilities that meet the needs of trail users, protect recreation settings, and maximize sustainable practices.

Desired Conditions

1. Infrastructure and facilities are rarely seen except near access points and are constructed in such a way as to be compatible with the scenic, natural, historic, and cultural qualities of the AZNST.
2. The AZNST trail tread is in good condition, with no major erosion or drainage issues, and stewardship of the AZNST and facilities is shared by land managing agencies, the Arizona Trail Association, and other partners.
3. Trailheads are best located off the main tread of the AZNST and provided with safe connecting access. Where equestrian access is needed, sufficient parking space for vehicles pulling trailers is provided.
4. Signs welcome visitors to the AZNST, help them find their way with maps posted at trailheads, and other pertinent information posted so people can enjoy the AZNST, learn about it, use nearby recreation sites, and enjoy natural and cultural attractions. The AZNST route is uniformly marked with the official service mark.
5. Facilities comply with accessibility standards.

Management Practices

Trail Tread

1. To best provide for the managed uses of the AZNST, it should be constructed and maintained to Forest Service Trail Class 3 standards and have a designed use of pack and saddle stock (FSH 2309.18). The designed use of a particular segment may differ where a substantial safety or resource concern exists, or where the planning direction for the management area requires a less developed trail, such as in a wilderness area.
2. Where a segment of the AZNST has a designed use of hiker or pedestrian, consider redesigning the trail or establishing trails to accommodate pack and saddle stock and mountain bike needs.
3. Design and maintenance of the AZNST and associated elements (for example, drainage and retaining structures) should follow agency standards and emphasize sustainability.
4. When feasible, fall line sections that exceed grade standards or create erosion should be rerouted.
5. Trail design should reflect the non-motorized nature of the AZNST and accommodate equestrians, mountain bikes (but not e-bikes), and hikers, unless restricted by wilderness or other special considerations. Avoid paving trails and, if surfacing is needed for durability, use natural appearing material that is horse friendly.
6. Signs should be compatible with the standards in the Arizona National Scenic Trail Sign Guidelines (appendix G) and land managing agencies guidelines and policies.
7. The official service mark for the AZNST shall be used to identify all segments of the trail according to guidance in the Arizona National Scenic Trail Sign Guidelines.
8. To achieve sustainable design objectives and efficiency in operations, the use of trail machines should be allowed for the purpose of maintaining or constructing the AZNST when consistent with local management direction.

Facilities

1. Only the minimum facilities necessary to provide an enjoyable visitor experience should be developed. Facilities should not interfere with the chief purposes and uses of the AZNST.
2. Before facilities are installed, managers should select materials that minimize operation and maintenance costs.
3. Facilities should blend into the surrounding landscape, use indigenous materials, and conform to accepted design and construction standards. Managers should work towards a consistent look and feel for trail facilities in new construction.
4. New facilities should comply with accessibility standards. As funding is available, existing facilities should be reconstructed to meet current accessibility standards.
5. Improve opportunities for people with disabilities to experience the AZNST by constructing accessible sections near trailheads or where other opportunities exist in compliance with American Disabilities Act, Architectural Barriers Act, and agency standards.
6. Use Arizona National Scenic Trail Sign Guidelines and reference Forest Service Built Environment Image Guide, and other appropriate agency guidance, and ensure signage is coordinated and compatible.
7. Physical barriers needed to deter motorized access to the AZNST should consist of natural materials such as boulders, ripped soils, and ditches. Only when these measures are not effective should facilities such as signs, fencing, or bollards be used.
8. To accommodate equestrians and pack stock, gates should be at least 6 feet wide and designed to be closed easily from horseback. The standard Arizona Trail Association gate should be used whenever possible (figure 7).

Figure 7. Standard gate, Arizona Trail Association

9. Land managers should follow local agency guidelines for memorials. Investigate alternatives that do not require facilities.
10. Facilities that are no longer useful or desired, including abandoned range infrastructure, should be removed and sites naturalized.

11. Agencies may partner with grazing permittees, lessees, or state wildlife managers to provide water facilities for mutual benefit or take other measures to develop water sources in remote, dry areas.
12. Water use by AZNST users should not significantly impact livestock watering.

Visitor Use Management and Capacity

Visitor use management is defined as the proactive and adaptive process of planning for and managing characteristics of visitor use and related physical and social setting, using a variety of strategies and tools, to sustain desired resource conditions and visitor experiences (Interagency Visitor Use Management Council 2013). Visitor use characteristics include the amount, type, timing, and distribution of visitor use, including visitor activities and behaviors. The primary goal of visitor use management is to maintain opportunities for high-quality visitor experiences through the protection of AZNST resources.

The nature and purposes of the AZNST, described in chapter 3, establish the desired key characteristics of the trail setting and experience, and the context for appropriate activities and uses for the AZNST and its corridor. The AZNST's nature and purposes statement recognizes the public's connection with the unique and diverse treasures of Arizona's outdoors for purposes of recreation, spiritual renewal, improved health, and high-quality time spent with family and friends. Striking a balance between trail user desires and resource protection and conservation within the framework of applicable law, regulation and policy direction presents a constant management challenge. Through specific visitor use management practices that promote the desired conditions for the AZNST, the comprehensive plan provides general, but consistent, direction that maintains flexibility for implementation by different agencies in varied situations.

Existing Law, Regulation, and Policy

The National Trails System Act requires the comprehensive plan for the AZNST to include an identified carrying capacity of the national scenic trail and a plan for its implementation. The contemporary term for carrying capacity is visitor capacity, defined as:

> "The maximum amounts and types of visitor use that a public use area can accommodate while achieving and maintaining the desired resource conditions and visitor experiences that are consistent with the purposes for which the area was established (Interagency Visitor Use Management Council 2019)."

The term visitor capacity is equivalent to the term carrying capacity in the National Trails System Act. The term visitor capacity will be used in the comprehensive plan, consistent with the terminology used in the Interagency Visitor Use Management Framework. In addition to meeting the requirements in the National Trails System Act, identification of a visitor capacity and its subsequent monitoring and implementation aids in management and protection of the resources and social values associated with the trail. Visitor capacity strategies are encompassed in the broader principles of visitor use management.

The Interagency Visitor Use Management Council's Visitor Capacity Guidebook: Managing the Amounts and Types of Visitor Use to Achieve Desired Conditions includes four guidelines for determining visitor capacity (Interagency Visitor Use Management Council 2019):

1. Determine the analysis area(s).
2. Review existing direction and knowledge.

3. Identify the limiting attribute(s).
4. Identify capacity.

Appendix C describes the analysis area, existing direction, and knowledge, and limiting attributes for each of the 43 passages of the AZNST. Visitor capacity trail passage description and decision criteria worksheets were used to document existing direction and managers' knowledge of trail and resource conditions and constraints. Interviews with local trail managers were conducted to help identify the limiting attributes, rate the capacity decision criteria, and identify conditions related to visitor use that are important to monitor. No limiting factors could be identified for many of the passages at the coarse scale considered. At a local level, limiting factors (such as a lack of camp sites, high-use conflicts, or resource impacts) may be identified in the future.

To identify visitor capacity, quantitative estimates were made for the amount of long-distance and passage user opportunities the AZNST provides. The estimates considered the current known physical and ecological conditions along the AZNST, and visitors' common expectations and desires for a national scenic trail, such as opportunities to enjoy scenic views, opportunities for solitude and self-reliance, and opportunities to travel long distances through a diversity of settings along one continuous trail. See appendix C for a description of the methodology used to estimate visitor capacity.

Visitor capacity estimates focus on the ability of the AZNST to provide long-distance, section, and thru-travel opportunities in alignment with the national scenic trail designation. Long-distance travel was determined to be the trail activity with the most constraints due to its seasonality and dependence on trail resources (availability of campsites and water, resupply opportunities, and so forth). The visitor capacity estimates presented here apply to long-distance thru-travel or section travel that includes overnight camping.

Visitor Capacity

Application of this method and focus on the high-use thru-hiking seasons produced an estimated visitor capacity for the whole AZNST of 1,800 to 2,700 thru-travelers for the spring and fall seasons combined. A numeric range is provided because there are several variables, such as the ability to make advanced campsite reservations in the national parks, and the availability of walk-up camping opportunities that influence the ability of these areas to accommodate overnight use. Of the 41 trail passages, the two most limiting passages, are Passage 38 – Grand Canyon Inner Gorge, passing through the heart of the Grand Canyon, and Passage 9 – Rincon Mountains, which traverses Saguaro National Park. Both these passages have additional limitations because they require overnight permits.

The visitor capacity estimates are presented as a range of visitor use that in most cases is much higher than current amounts of use. The number of thru-hikers and riders that could be verified by the Arizona Trail Association in recent years is shown in table 3.

Table 3. Numbers of thru-hikers (verified by Arizona Trail Association)

Year	Number of thru-hikers
2016	99
2017	114
2018	103
2019	180
2021	240
2022	240

Note: Due to Coronavirus and wildfires that closed some trail passages, the number of thru-travel hikers and riders for 2020 are not accurate and are not included in the table.

Actual numbers of thru-hikers and riders are thought to be much higher than shown, as there is currently no permit system or other requirement for trail users to register. Use is expected to increase as public awareness of the trail becomes more common.

Appendix C provides an in-depth explanation of the methodology used to arrive at the visitor capacity estimate. For information on monitoring visitor use, refer to the Monitoring and Adaptive Management section in chapter 6 of this comprehensive plan, and appendix D, Adaptive Management and Monitoring of Visitor Use on the Arizona National Scenic Trail.

Desired Conditions

1. Visitor use is managed in a way that contributes to the preservation and enjoyment of the significant natural, historical, and cultural resources of the AZNST.
2. Safe public recreation, enjoyment, appreciation, and understanding of the trail and its related sites characterize the visitor experience along the trail.
3. Visitor use is managed for desired resource and social conditions included in this plan, and visitor experience opportunities and outcomes.
4. Visitor use management is guided by the principles of sustainable recreation, including the ecological, social, economic, and administrative aspects, the Interagency Visitor Use Management Council's Visitor Use Management Framework and guidebooks, and the Southwestern Region Sustainable Recreation Strategy.

Management Practices

1. Implement management strategies for successful shared use trails with an emphasis on user ethics and trail etiquette programs.
2. Consider visitor use management strategies such as increased education, information and improved infrastructure to resolve use conflicts prior to implementing visitor use restrictions or limitations.
3. Monitor visitor use on the AZNST using such indicators as the condition of the natural environment and measures of visitor conflict and preferences.
4. Complete site-specific inventories and evaluations in high visitor use areas to determine balanced approach to use levels, management actions, and public outreach efforts to prevent degradation of the visitor's trail experience, as well as prevent impacts to natural and cultural resources. Use capacity estimates developed for park units or other plans.

Information, Interpretation, and Other Visitor Services

The Forest Service Arizona National Scenic Trail website can be found at: https://www.fs.usda.gov/azt. The site includes information and links to the various land management agencies, information about the administration of the AZNST, partnerships, safety, and ethics, passes and permits, and notices about trail closures and emergencies.

The Arizona Trail Association website (https://www.aztrail.org), contains detailed information, maps, and links, including topographic maps, Passage maps, mountain bike route maps, water source locations and quality, sign and gate inventory GIS databases, trail user information organized by AZNST passage, key Arizona Trail Association and agency contacts for each passage, Gateway Community maps and trail services information, trail conditions, current news, a data book for turns/waypoints, and a link to a trail user forum. In addition to the well-maintained website, a guidebook – *Your Complete Guide to the Arizona National Scenic Trail* (Arizona Trail Association 2014), is another valuable source of trail information available from the Arizona Trail Association.

Potential Interpretive Themes

Scenic Landmarks and Vistas: There are numerous areas on the AZNST that showcase the unique landmarks and vistas that the State of Arizona is world renowned for. The AZNST was designated for this scenic perspective and interpreting these areas may assist in preserving them for the future while meeting the intent of the AZNST's Congressional designation.

Arizona's Ecosystems: The AZNST was developed to allow trail users to experience the variety of biotic communities and ecosystems in Arizona. Interpreting these ecosystems would highlight the national significance and nature and purposes of the AZNST.

Wildlife and Flora: Many types of wildlife use the AZNST as a travel corridor. Additionally, there are many rare, sensitive, endangered, and threatened plant and wildlife species within the recommended national trail planning corridor. Agencies are encouraged to discuss these species, their conservation and protection along the AZNST. The AZNST passes through some of the most diverse and premier birding areas in North America. Birding is a growing eco-tourist industry within the U.S. It is important to the economy of Arizona and has the potential to provide benefits to smaller communities located near birding areas.

Native American Influence: Portions of the AZNST may be located on or near historic or prehistoric native trails and may travel through culturally significant areas with numerous opportunities for interpretation. Heritage and cultural tourism have a potential for partnership development along the AZNST. American Indian Alaska Native Tourism Association is a possible partner to assist with the development of culturally appropriate interpretation, as well as tribes who have expressed an interest in working with agencies to develop information.

Geology: Geology along the AZNST is diverse and unique, including major landforms, mining areas, high elevation parks, and extinct super volcanos of the Superstition Mountains. The Grand Canyon is a world class feature that is already heavily interpreted but there are many areas that have little to no interpretation.

Arizona History: The AZNST crosses the length of the State and traces of history are frequently in evidence, from prehistoric settlements to mining camps and remains of historic cattle ranching and logging operations. A variety of important historical events that led to the development of the

State of Arizona took place in the vicinity of the AZNST. The AZNST passes through working landscapes where land uses, such as cattle ranching and mining, are still an important part of local economies.

Historic Trails: The AZNST crosses many east-west routes that were important to the development of the State, and to Native Americans prior to European settlement. These include the Butterfield Overland Mail Route, which was designated as a national historic trail in 2023.

National Recreation Trails: The AZNST crosses the following national recreation trails: Kearny's Trail, Highline National Recreation Trail, General Crook National Recreation Trail, Beale Wagon Road, and others.

Conservation: Consider opportunities to incorporate information and education about Leave No Trace™ or Share the Trail ethics, resource conservation, climate change, fire behavior and large-scale landscape restoration projects.

Wildfires, Forest Health, and Restoration: Consider opportunities to incorporate information on wildfire, prescribed fire, fire dependent plant communities (ponderosa pine), and plant communities that are not fire-adapted but are experiencing more frequent fires due to invasive exotic plants (for example, Sonoran Desert plants and invasive Red Brome grass). Similarly, burnt areas from past fires present opportunities to interpret beneficial effects of low intensity fires as well as adverse effects of catastrophic fire.

Desired conditions

1. Information for the public (including maps, brochures, books, and interpretive sites) are accurate, relevant, and timely.
2. Partners provide the public trip-planning services to ensure a quality visit to the AZNST and its associated sites.
3. Information services and publicity are coordinated among partners to enable the public to plan enjoyable trips and optimize contact with the AZNST and its sites and stories.
4. Public understanding of both land management roles and private landowner rights along the AZNST are fostered.
5. A coordinated, consistent, and flexible interpretation program is based on trail-wide themes; on-site managers are responsible for individual interpretive site development.
6. Visitor facilities enable visitors to learn about and experience the AZNST.
7. Use of Leave No Trace™ and Share the Trail practices are actively encouraged along the entirety of the AZNST.
8. Information and educational materials to assist with public understanding of key health and safety topics relevant to trail use and the AZNST.

Management Practices

1. Provide multilingual public information and education or interpretive information for individuals with sensory disabilities, where possible, to ensure communication meets information needs and conveys a message of inclusive public access.
2. Use standard international symbols at trailheads and wayfinding points.

3. Identify and communicate the local and societal economic, health, and wellness benefits of trails (USDA Forest Service 2018).
4. Engage diverse communities, including the next generation of trail users and underserved communities.
5. Employ successful outreach and user ethics programs such as Leave No Trace™ , Share the Trail, Tread Lightly!, the International Mountain Biking Association's Rules of the AZNST, and the Back Country Horsemen of America's Leave No Trace Stock Users Education Program.
6. Coordinate with tourism destination marketing organizations, gateway communities, media, and other service providers to ensure marketing reflects the nature and purposes of the AZNST.
7. Establish at least one trail specific information center as funding and resources permit.
8. Use relevant technology and social media proactively to provide education and discourage activities that may not be compatible with the nature and purposes of the AZNST.
9. Coordinate with partners and local land managers to ensure public health and safety information is accurate, timely, and provided in a variety of formats and locations, such as at trailheads, in printed materials, and in online formats such as websites, apps, and social media.
10. Incorporate messages related to resource protection, health, and safety which may include:
    a. Trail sanitation, including proper disposal of human waste.
    b. Wildlife safety (such as mountain lions, bears, snakes, and insects).
    c. Personal safety, including outdoor navigation and survival skills needed for successful long-distance travel.
    d. Trail conditions and hazards such as fire, floods, availability of water.
    e. Border safety (south of the I-10 highway).
    f. Emergency communication, response, and incident reporting procedures.
    g. Incident Management – Fires
    h. Preserve trail tread by avoiding trails when they are wet and/or muddy.
11. Develop an Interpretive Plan for the AZNST that will include:
    a. Primary interpretive themes (potential themes are listed above, additional themes can be added as appropriate across the trail)
    b. Storylines
    c. Family of materials designed with a specific look and feel for the AZNST
    d. Social media
    e. Locations for interpretive signs and sites
    f. Partnership opportunities, volunteerism, and community involvement

Corridor and Resource Protection and Management

Land Acquisition and Protection

Existing Law, Regulation, and Policy

No single law provides authority for federal agencies to acquire or dispose of lands. Rather, Congress provided various acquisition and disposal authorities through laws enacted over more than a century ago. Per the National Trails Systems Act, as amended designating the AZNST and appointing the Secretary of Agriculture as the trail administrator, "…in consultation with the Secretary of the Interior and appropriate state, tribal, and local governmental agencies". The Secretary has delegated AZNST Administration responsibility to the Forest Service. Among AZNST-affected federal agencies, the Forest Service and BLM are the most likely to acquire access easements or rights-of-way. The extent to which each of these two federal agencies has authority to acquire and dispose of land varies considerably. The BLM has relatively broad authority for both acquisitions and disposals under the Federal Land Policy and Management Act of 1976 (FLPMA). The agency also has other authorities for disposing of land, including two laws that allow retention of the proceeds for subsequent land acquisition, among other purposes, and a law that allows transfers to governmental units and other entities for public purposes. By contrast, Forest Service authority to acquire lands is also broad within statutory limitations that differ from BLM. The agency has various authorities to dispose of land, but they are relatively constrained.

An example of how the BLM and Forest Service have implemented a mutually beneficial acquisition to further the establishment of the AZNST is the BLM, Tucson Field Office, acquisition of a perpetual fifteen-foot-wide right-of-way across Arizona State Trust lands north of the Florence Kelvin Highway to the Tonto National Forest Boundary (ROW Number 16-113922).

Currently, the principal financing mechanism for land acquisition of federal land management agencies is mandatory appropriations under the Land and Water Conservation Fund. Provisions of the Land and Water Conservation Fund Act of 1965 provide for $900 million in specified revenues to be deposited in the fund annually. In practice, most of the revenue is derived from oil and gas leases on the outer continental shelf. The fund can be used for multiple purposes, including land acquisition. Prior to fiscal year 2021, appropriations from the Land and Water Conservation Fund were discretionary and fluctuated considerably from year to year. Additional sources of mandatory funding are available for acquisitions of some agencies. For example, the BLM can retain the proceeds of land sales and can use these proceeds for subsequent acquisitions and other purposes under the Federal Land Transaction Facilitation Act (Congressional Research Service Report: Federal Land Ownership: Acquisition and Disposal Authorities Updated March 10, 2022, RL34273.pdf (fas.org)).

Forest Service Acquisition Authority

The Forest Service has considerable authority to purchase land within and outside the proclaimed National Forest boundaries.

- The National Trails System Act (Section 7) can be used as an acquisition authority for the AZNST, after the Right-of-Way has been approved and published in the Federal Register.
- The Department of Agriculture Organic Act of 1956 authorizes purchase for almost any purpose.

- The Federal Land Policy and Management Act of 1976 is a second primary authority for BLM and the Forest Service to acquire lands.
- The Land and Water Conservation Fund (LWCF) Act is another authority to purchase lands. The LWCF Act states: "Land outside but adjacent to an existing national forest boundary, not to exceed 3,000 acres in the case of any one forest, that would comprise an integral part of a forest recreational management area may also be acquired with amounts appropriated from the Fund.

Bureau of Land Management Acquisition Authority

Similar to the Forest Service, the BLM also has authority under the National Trails System Act (Section 7), after the Right-of-Way has been approved and published in the Federal Register. The BLM also has broad, general authority to acquire lands, principally under Section 205 of FLPMA. Specifically, the Secretary of the Interior is authorized to acquire, by purchase, exchange, donation, or use of eminent domain, lands, or interests therein (43 U.S.C. §1715(a)). As mentioned above, the Land and Water Conservation Fund and the Federal Land Transaction Facilitation Act are additional acquisition authorities for the BLM. The BLM acquires land or interests in land, including inholdings, for a variety of reasons. These reasons include to protect natural and cultural resources, to increase opportunities for public access and recreation, and to improve management of lands.

National Trail System Act Authorities

There are a variety of National Trails System Act authorities to help Federal agencies and others protect national trail corridors and the resources that give them enduring value. In 16 U.S.C. 1246(d) provides the basic structure for methods that may be used to acquire lands for trail protection.

> "Within the exterior boundaries of areas under their administration that are included in the right-of-way selected for a national recreation, national scenic, or national historic trail, the heads of Federal agencies may use lands for trail purposes and may acquire lands or interests in lands by written cooperative agreement, donation, purchase with donated or appropriated funds, or exchange."

16 U.S.C. 1246(e) expands upon this authority where lands outside exterior boundaries of federally administrative areas, by providing a number of options detailed in the paragraphs below. Federally administered areas are those lands contained within the legislative boundaries specific to national forests, national parks, and national wildlife refuges. BLM lands do not have legislated boundaries.

Such acquisitions will follow direction contained within the National Trails System Act, applicable laws, regulations, agency-specific directives, and applicable land management plans. Each federal land management agency with jurisdiction has the discretion to establish an acquisition plan and identify priorities for acquisition within their respective jurisdictions based upon their agency specific policies and directives.

Other important land protection authorities can be found in 16 U.S.C. 1246(f), (g), (h)(2) and (k), and 16 U.S.C. 1248(a), (b), (c), (d) and (e).

Acquisition of Lands or Interests Outside Federally Administered Areas

Prior to federal agencies acquiring lands or interests in lands outside of federally administered areas, state and local agencies are encouraged to obtain lands, interests, or agreements from willing landowners for the protection of the AZNST. Direction contained within 16 U.S.C. 1246 (e) will be followed:

> "Where the lands included in a national scenic trail right-of-way are outside of the exterior boundaries of federally administered areas, the Secretary charged with the administration of such trail shall encourage the States or local governments involved (1) to enter into written cooperative agreements with landowners, private organizations, and individuals to provide the necessary trail right-of-way, or (2) to acquire such lands or interests therein to be used as segments of the national scenic trail."

Three counties along the AZNST have acquired a perpetual fifteen-foot-wide right-of-way over a total of 88 miles of the trail (Coconino, Pima and Pinal Counties).

When state or local agencies are unable to obtain lands, interests, or agreement from willing landowners and following permanent selection of the rights-of-way, federal agencies can acquire such lands, interests, or agreements:

> "…. the appropriate Secretary may (i) enter into such agreements with landowners, States, local governments, private organizations, and individuals for the use of lands for trail purposes, or (ii) acquire private lands or interests therein by donation purchase with donated or appropriated funds or exchange…. the appropriate Secretary may acquire lands or interests therein from local governments or governmental corporations with the consent of such entities. The lands involved in such rights-of-way should be acquired in fee, if other methods of public control are not sufficient to assure their use for the purpose for which they are acquired…." (16 U.S.C. 1246 (e)).

Desired Conditions

1. The AZNST is a continuous, connected non-motorized trail on lands where public access for hikers and, where allowed by the land managing agency, pack and saddle stock users and bicyclists are allowed.
2. Lands along the AZNST are sufficiently protected so that they may continue to provide for the nature and purposes and other trail values, including the preservation of significant natural, historical, and cultural resources associated with the trail in perpetuity.

Management Practices

1. AZNST protection strategies should include AZNST resources, qualities, values, associated settings and uses.
2. Identify and prioritize sections of the AZNST where existing land protections are insufficient to protect and conserve the AZNST's nature and purposes, and resources, qualities, values, associated settings and uses in perpetuity.
3. Encourage non-federal governments and partners to identify, evaluate, and preserve AZNST-related resources.
4. In acquiring lands or interest in lands, use the authorizations discussed above to fulfill one or more of the following objectives:
    a. Safeguard the nature and purposes of the AZNST and protect and enhance its resources, qualities, values, associated settings and uses.

b. Improve visitor experience and trail manageability.

c. Improve or acquire legal public access.

d. Address public health and safety concerns.

e. Consolidate land ownership.

5. Fee title acquisition of land surface and subsurface estate is preferred over acquisition of the surface estate only, or easements or other interests in land.

6. In acquiring lands or interest in lands, work with willing sellers.

7. Incorporate restrictions on public motorized use of the AZNST into agreements, rights-of-way, or other instruments to comply with 16 U.S.C. 1246(c), while considering exceptions discussed in chapter 5.

8. Ensure protection of the AZNST and national trail planning corridor on non-federal lands is characterized by as much permanence as practicable.

Visual, Aural, and Dark Sky Resource Protection

Preservation of scenery is the most important management challenge on a national scenic trail. This section is intended to guide the management of scenery resources and the mitigation of land uses that diminish scenic quality. Most people use the AZNST to experience scenic landscapes and wildland settings. Cultural sites are often valued by trail users, including historic buildings (such as Kentucky Camp) and small historic mines. Land uses that contrast with natural settings, however, are incompatible with the valued settings. Development such as high-voltage transmission lines (and associated access roads), large industrial mines, communications towers and wind towers are often visible from long distances, especially in western landscapes, and can detract from the naturalness of the AZNST setting and the experience of trail users, especially when they are near the AZNST.

Scenery management is used to evaluate the existing quality of the visual environment, identify areas that warrant protection through special management attention, establish objectives for managing scenery, and reduce the visual impact of existing and proposed projects.

The AZNST provides opportunities for visitors to escape into wild places. Although scenery management is focused on landscapes seen during the day, quiet settings free from human-caused sounds is also important to trail users, and dark skies provide inspirational nighttime viewing opportunities of a sensitive resource. Hence, guidance for these resources is also provided in this section.

Existing Law, Regulation, and Policy

The Scenery Management System of the Forest Service considers the uniqueness of landscapes, user concerns, and viewsheds, and establishes objectives for managing scenery. Preserving landscapes is beneficial to other land uses and enhances expansive viewsheds that make the State of Arizona well known for its scenery and sustains ecotourism that benefits the State's economy.

The National Trails System Act provides for the establishment of extended trails located to provide for the enjoyment of the nationally significant scenic qualities of the areas through which the trails pass. Section 3 (16 USC 1242) and Section 7 (16 USC 1245) of the Act charges the land managing agencies, to the extent practicable, to make efforts to avoid activities incompatible with the purposes for which the national trails were established. Therefore, it is the responsibility of

the land managing agencies to preserve and protect the scenery resources of the AZNST and to prohibit any activity that would substantially interfere with the trail's nature and purposes. Forest Service uses the Landscape Aesthetics – Scenery Management System to address visual resource management on National Forest System lands (Forest Service Manual 2380). The Bureau of Land Management uses the Visual Resource Management system to address visual management on public lands (BLM Manual 8400).

Desired Conditions

1. Ecological processes appear to be the dominant forces that shape the AZNST foreground viewing zone.
2. On public lands, management direction is sufficient to protect the valued attributes of the AZNST, including high-quality scenery.
3. Public lands adjacent to the AZNST national trail planning corridor, management area or other geographic land planning designation for the AZNST are managed with consideration for the AZNST's values.
4. On other lands, scenery and nonmotorized settings along the AZNST are protected as much as is practicable by the State and local governments, or through mutual agreement on private lands.
5. Vegetation communities within the AZNST national trail planning corridor are healthy and resilient.
6. Mitigation of impacts to dark and urban skies along the federally administered portions of the AZNST are in project development and are a consideration in meeting local city and county ordinances.
7. The soundscape is dominated by natural sounds. Noise from human-made sources is in the background or absent.

Management Practices

1. Allow for the maintenance of existing recreation, range, and other facilities and the occasional addition of new facilities that are subordinate to the natural setting and not visually intrusive. Whenever possible, these facilities should be hidden from view by terrain. Remove abandoned fences, corrals, or other facilities no longer in use and prioritize those that contrast with AZNST's scenic character.
2. Identify and implement land health improvement projects to provide resilient and natural appearing forests and plant communities. These projects provide long-term scenery benefits, though some activities may cause short-term impacts which are appropriately mitigated. Mitigation should include removing log decks and naturalizing disturbed areas (such as skid trails landings and temporary roads) as soon as possible.
3. In land management and project planning, consider seen areas outside the national trail planning corridor. These lands should be valued for their contribution to the AZNST's setting and managed accordingly.
4. While the AZNST may intermittently pass through more developed settings or motorized settings to provide for a continuous route that includes important attractions and amenities, where feasible, the AZNST national trail planning corridor's setting should be consistent with a primitive or semi-primitive nonmotorized setting.

5. Follow best practices for mitigating the impact of artificial lighting upon dark skies and the natural setting of the AZNST when planning and implementing projects within or adjacent to the AZNST national trail planning corridor. Refer to the National Park Service web site for resources about dark sky management nps.gov/subjects/nightskies/index.htm
6. Address threats to scenery and restore areas near the trail that do not meet scenery objectives. Managers may use a visual prioritization process[26] or similar process to map areas where scenery is impacted or threatened and to address the highest priority areas as soon as possible.
7. In developed areas and locations where preservation or restoration is not possible, minimize scenic impacts to the AZNST national trail planning corridor.
8. During project planning, incorporate appropriate design features and mitigation to minimize negative impacts to the AZNST national trail planning corridor. Projects and activities should result in a visual degree of contrast that is either none or weak.
9. In siting facilities and structures, select locations outside of the viewshed of the AZNST. If this is not possible, select materials and colors that minimize visual impacts and blend into the landscape, especially within foreground views.
10. When projects are proposed, planning teams should identify whether there may be scenic impacts visible from the AZNST. If impacts could be large, of a long duration, or within foreground views, a thorough analysis of the possible scenic impacts should be part of the project-level decision.
11. Complete visual impact assessments for trail-related projects and for other proposed land use activities to avoid, or when that is not feasible identify measures to minimize impacts.
12. Identify visually degraded areas and restoration activities to reduce visual impacts.

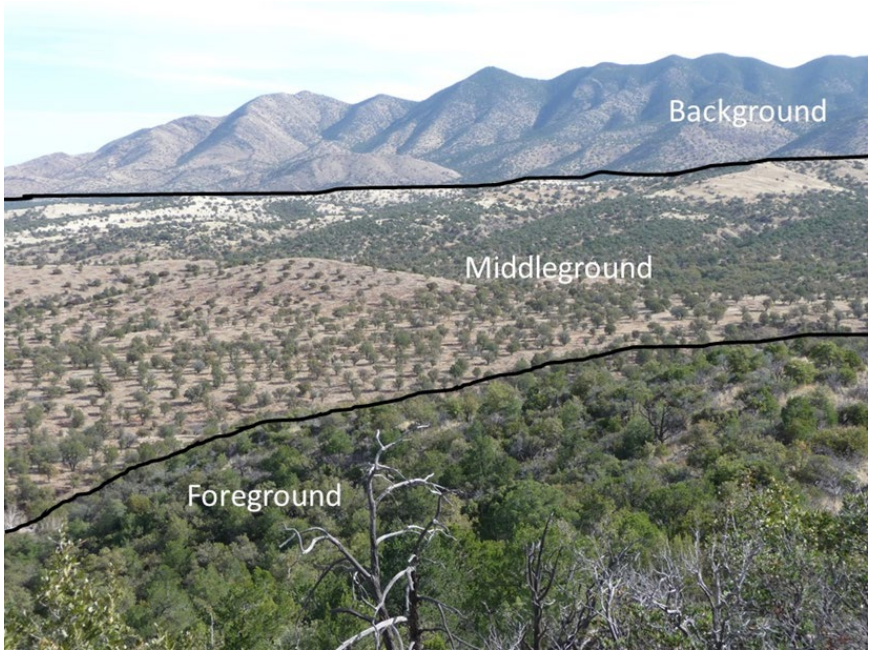

Figure 8. Example of scenery management system distance zones

[26] There are three visual prioritization (VP) levels with VP1 being the most urgent or serious. Visual Prioritization Process User's Manual, U.S. Department of Transportation.

Recreation Resource Protection

Recreation Setting

The AZNST offers diverse and excellent non-motorized recreation opportunities on one trail, including hiking, horseback riding, mountain biking, cross-country skiing, and trail running. It connects communities to the outdoors and invites recreationists to explore some of the most renowned landscapes in the west.

Existing Law, Regulation, and Policy

National scenic trails are to be "so located as to provide for maximum outdoor recreation potential and for the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the areas through which such trails may pass" (16 U.S.C. 1242(a)(2)).

To help manage a diversity of recreation opportunities across varied landscapes and jurisdictions, several frameworks are used by the Forest Service. The recreation opportunity spectrum (ROS) is a framework for inventorying and managing outdoor recreation opportunities based on the physical, social, and managerial aspects of the setting. The spectrum is divided into six major classes including, urban, rural, roaded natural, semi-primitive motorized, semi-primitive non-motorized, and primitive. Opportunities for experiences along the spectrum represent a range from a very high probability of solitude, self-reliance, challenge, and risk to a very social experience where self-reliance, challenge, and risk are relatively unimportant aspects to the visitor for the experience they are seeking (Forest Service 1986). The BLM has developed a similar system of recreation setting characteristics describing a range of recreational settings, based on current physical, social, and operational factors, including primitive, backcountry, middle country, front country, and rural settings.

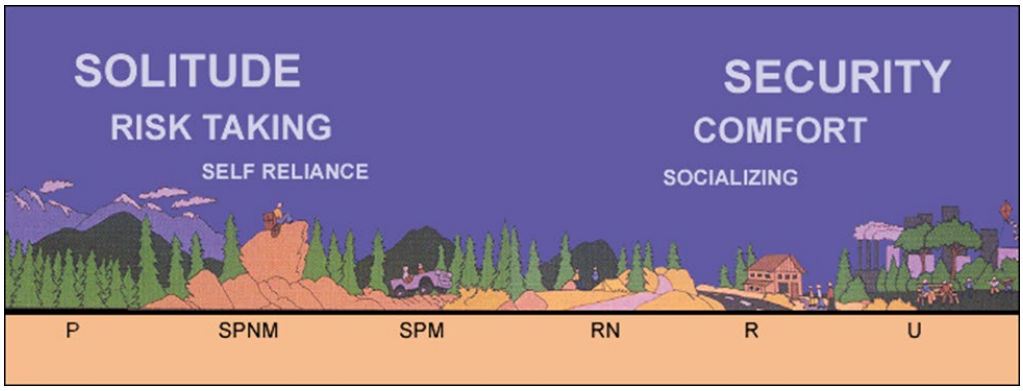

Figure 9. Recreation opportunity spectrum depiction

AZNST sections passing through jurisdictions other than Forest Service and BLM may not have a formal setting classification. The recreation opportunities provided by these agencies, however, can be correlated and described in terms of recreational opportunity spectrum classes. For purposes of uniformity throughout the AZNST national trail planning corridor, the settings and opportunities have been described using recreational opportunity spectrum terminology.

Under the recreational opportunity spectrum, the types or classes of outdoor recreation activities are identified below in table 4. The agency's land and resource management plans then provide specific direction and management practices to be used to maintain the existing recreation

settings and opportunities or to modify them to meet indicated needs and demands within the planning area.

Table 4. Comparison of recreation opportunity spectrum, scenic integrity (Forest Service) and visual resource management (BLM) objectives

Recreation Opportunity Spectrum Class	Very High (USFS Scenic Integrity) versus Class I (BLM Visual Resource Management)	High (USFS Scenic Integrity) versus Class II (BLM Visual Resource Management)	Moderate (USFS Scenic Integrity) versus Class III (BLM Visual Resource Management)
Primitive	Norm	Inconsistent	Unacceptable
Semi-primitive Non-motorized	Fully Compatible	Norm	Inconsistent
Semi-primitive Motorized	Fully Compatible	Fully Compatible	Norm
Roaded Natural	Fully Compatible	Norm	Norm
Rural	Fully Compatible	Fully Compatible	Norm
Urban	Fully Compatible	Fully Compatible	Fully Compatible

Recreation opportunity spectrum classes are also related to scenic integrity and visual resource management objectives (as seen in the crosswalk in table 4), which are an important consideration for national scenic trails. Figure 10 is a general representation of the AZNST passing through a variety of settings and indicates how recreation opportunities might vary along the trail-by-trail passage. The recreation settings from primitive to urban are based on ROS classes but are generalized by trail passage for the purposes of this illustration.

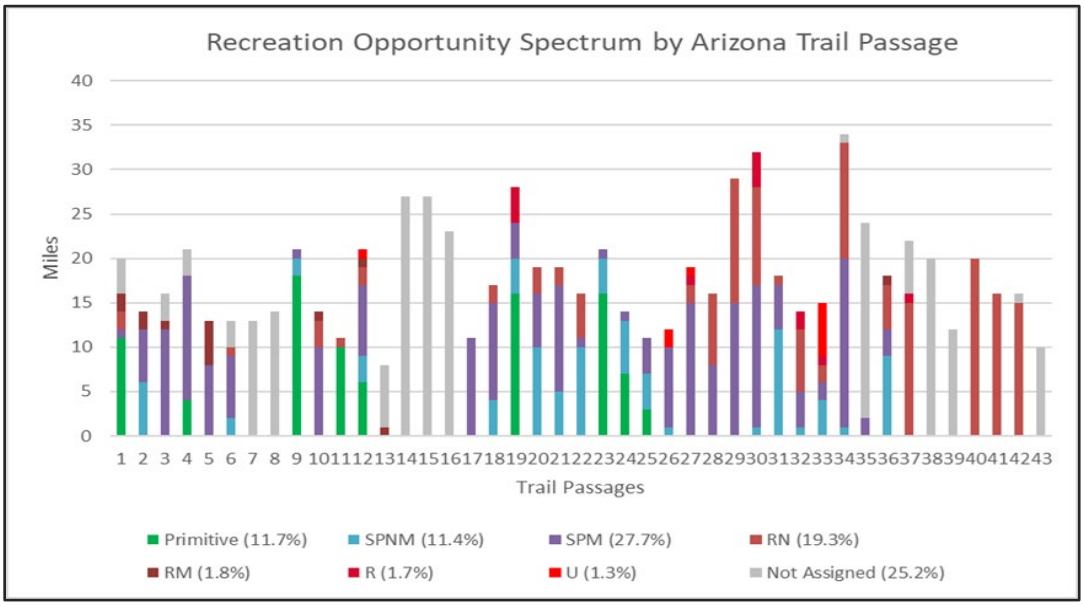

Figure 10. Recreation opportunity spectrum zones by trail passage

Outcomes and Benefits Associated with the Arizona National Scenic Trail

Table 5. Potential outcomes and benefits associated with the AZNST

Perspective	Outcomes and Benefits
Individual	Bucket list trip Self-reliance on a journey through harsh, contrasting environments Sense of accomplishment Therapeutic connection with nature
Community	Sense of belonging to the trail community Volunteers and partnerships Healthy lifestyle Connection to gateway communities A sense of responsibility or ownership of the local trail in gateway communities
Environmental	Connecting people with the outdoors Increasing awareness of natural and cultural resources and the need for protection
Economic	Visitors to the AZNST contribute to businesses that provide traveler services such as food, lodging, resupply, and shuttles

Desired Conditions

1. Visitors are provided a wide range of appropriate non-motorized recreational opportunities to fully realize their preferred experiences along the AZNST. Access to public recreation, enjoyment, appreciation, and understanding of the AZNST and its related sites characterize the visitor's recreation experience.
2. Quality recreational settings and opportunities are maintained across the various AZNST jurisdictions, allowing the growing and increasingly diverse visitor population to gain their desired recreation experiences, characteristic of a nationally significant trail resource.
3. Recreation management is guided by the principles of sustainable recreation, including the ecological, social, economic, and administrative aspects.
4. Recreation setting characteristics are monitored along the entire AZNST to determine consistency with, or progress towards, the desired recreation opportunity spectrum setting(s) specified in the applicable land management plans. Desired recreation settings, including setting characteristics, should be considered in management action decisions associated with and around the AZNST.

Management Practices

1. Near towns and developed recreation facilities, the AZNST may become a more accessible and highly developed route with access to amenities via connector trails.
2. To the greatest extent possible, existing roads should be used to improve access to the AZNST.
3. Where practicable, identify equestrian and mountain bike bypass routes around sections of the AZNST where such use is restricted by law or policy.
4. Travel management designations on AZNST sections that conflict with non-motorized use objectives should be resolved through local travel management planning or, where the AZNST was previously co-located with an open motorized route, relocating the AZNST to non-motorized single track.

5. Management activities should not result in desired recreation setting changes from less to more developed, particularly within the foreground (½ mile) of the AZNST.
6. To preserve the non-motorized character of the AZNST, new temporary or permanent road or motorized trail construction across the AZNST or within the national trail planning corridor should be avoided unless needed for resource protection, access to private lands, or to protect public health and safety.
7. To preserve the non-motorized setting, when developing or revising travel management plans agencies should strive to reduce the miles of existing motorized routes within the national trail planning corridor where it can be done feasibly while still meeting the needs of the public. Priority should be given to those routes that cross or closely parallel the AZNST.
8. When possible, activities that affect AZNST visitors should be scheduled outside of the major seasons of use.
9. Complete recreation setting characteristics inventories for remaining AZNST segments.

Cultural Resource Protection

The human cultural expression in Arizona began before 12,000 years ago with the early Paleo Indian and Archaic period of hunters and gatherers. It evolved into sophisticated agricultural communities with extensive multi-roomed pueblos or pithouse structures and associated agricultural fields and water canals. These communities were connected through a network of trails used for accessing various natural resources and trading among communities. The AZNST crosses a variety of areas with distinct prehistoric cultural traditions such as the Puebloan and Cohonina of the Grand Canyon region, Sinagua along the Mogollon Rim and the Mogollon and Hohokam cultures south of the rim into northern Mexico. There is also evidence for protohistoric period cultural sites associated with various bands of the Paiute, Yavapai, Hualapai, Hopi, and Navajo people in the northern portion of the state; Apaches and the people of the Salt and Gila Rivers such as the Pima and Maricopa in the middle portion of the State; and in the south, along the border, sites associated with the Ak-chin, Pasqua Yaqui and Tohono O'odham people. The AZNST also crosses, or is located, near culturally important places, also referred to as traditional cultural properties, such as the Grand Canyon.

Historic period sites along the AZNST and within the national trail planning corridor represent historic ranching, homesteading, mining, historic logging and logging railroad systems. The AZNST crosses historic travel corridors like the Beale Wagon Road, Crook Tail, Butterfield Overland Mail route; historic stagecoach routes to the Grand Canyon; and several historic State Highways like SR 64 along the south rim of the Grand Canyon and the Oracle-Holbrook Highway used for early Mormon migration. There are also historic stock driveways such as the Heber-Reno Sheep Driveway and major railroading systems such as the Atchison, Topeka, and Santa Fe in the Flagstaff area and the Southern Pacific Railroad in Tucson. Finally, some portions of the AZNST are National Register Historic Properties. The AZNST crosses the Grand Canyon using the Historic Kaibab Trail and the Cross Canyon Corridor Historic District, while on the Coconino National Forest, a portion of the AZNST is located on several miles of a National Register eligible historic logging railroad grade.

Desired Conditions

1. Cultural and historical features along the AZNST are protected.
2. Culture and history are interpreted along the AZNST to enhance the AZNST experience.

3. Potentially adverse effects to traditional cultural properties from Federal land management activities are mitigated through best management practices, design criteria, and project-level mitigation measures in consultation with federally recognized tribes.

Management Practices

1. Archaeological inventories should be conducted to identify cultural resources in areas where there have been no previous inventories or inventories are incomplete.
2. Cultural and heritage resources should be evaluated for their eligibility for the National Register of Historic Places.
3. Heritage resources should be protected and preserved in situ wherever practical.
4. In order to ensure proposed ground disturbing activities conducted along the AZNST do not adversely affect a cultural site, they should be subject to review by a professional archaeologist associated with the land management agencies in consultation with the Arizona State Historic Preservation Office and associated tribe or tribes, if appropriate (National Historic Preservation Act, 36 CFR 800), or in accordance with existing management direction.
5. All archaeological inventories should be conducted by archaeologists who meet the Secretary of Interior's Professional Qualification Standards (National Historic Preservation Act, 36 CFR 800).
6. Land managers and land management agencies should collaborate with tribes, communities, and preservation partners to promote protection of heritage and cultural resources, including oral histories and traditional knowledge, and to identify cultural landscapes and cultural resources suitable for education, interpretation and public use.
7. Research should be encouraged to enhance knowledge, understanding and appreciation of the cultural and historical significance of resources related to the AZNST.
8. Affected tribes and communities are engaged to identify and protect areas of local ethnographic and historical interest within the national trail planning corridor.
9. Archaeological data is managed by the land manager or land management agency using current standards (National Historic Preservation Act, 36 CFR 800).

Water Resource Protection

Southwestern riparian ecosystems are dynamic habitats that border streams, springs, ponds, lakes or occupy other wet areas, such as wetlands, cienegas, fens, and bogs. They occur within all terrestrial vegetation communities and are the interface between the terrestrial uplands and open water. The structure of riparian systems creates high ecosystem diversity. These systems are crucial habitat for the survival of many plant and wildlife species in an otherwise arid environment. They provide water, forage, shelter, and habitat for nesting, roosting, and bedding for many species, some of which can live nowhere else. Rivers are also important bird migration corridors.

Lush stream corridors and cool water sources enhance the AZNST experience and enrich the diversity of life encountered by trail users. The health of riparian areas is dependent upon the health of the surrounding watersheds. Improvement of watershed conditions through sustainable land management practices contributes to the quantity and quality of water available. Sustainable

trails and trail infrastructure are also critical to maintaining healthy riparian ecosystems and watershed integrity.

Water is the most critical AZNST resource from the standpoint of health and safety. Conditions that sustain healthy hydrologic systems and feed natural water sources are crucial for keeping the AZNST available for use by the public. These natural water sources are also vital for wildlife habitat which is a significant resource of the national trail planning corridor. Based on current observations, and with projections of continued climate change in the region trending toward a dryer and hotter climate, natural water sources are becoming more susceptible to depletion due to increased evaporation from warmer temperatures and altered frequency and severity of both droughts and flash floods. These conditions are making water sources less and less reliable. Water sources are also at risk due to increased drawdown of aquifers and competing demands for multiple uses. Heightened fire activity and intensity damages watersheds which results in soil movement and lack of moisture retention. These conditions can all place additional stress on important water sources within the AZNST national trail planning corridor.

Desired Conditions

1. The AZNST national trail planning corridor is hydrologically sustainable with minimal major soil erosion, water drainage, or water quality concerns caused by the use and management of the AZNST.
2. Water sources are sustainable, suitable for human use when properly filtered and treated, are sufficient to meet the needs of all trail users and are not a limiting factor in the use and enjoyment of the AZNST.
3. Riparian areas (including streams, seeps, springs, and wetlands) are intact, properly functioning, and resilient to disturbances. Vegetation conditions contribute to maintaining downstream water quality and quantity.
4. Provide appropriate toilet facilities and educational resources for proper disposal of human waste.

Management Practices

1. Identify and prioritize segments of the AZNST that are on unstable soils or in sensitive wetland or riparian areas and take appropriate management actions (such as modifying visitor use or redesigning, realigning, or relocating the trail) to protect water resources.
2. Identify and prioritize segments of the AZNST where extensive or recurring erosion, or both, or drainage problems are degrading the trail and take appropriate management actions (such as redesigning, realigning, or relocating the trail or modifying visitor use) to protect the trail and water resources.
3. Locate, design, and maintain water crossings (such as fords and trail bridges) to protect water resources.
4. Implement best management practices to protect water resources when constructing and maintaining the trail and trail-related facilities (including campsites and toilets).
5. Use education and enforcement, as appropriate, to promote trail users' utilization of responsible practices and compliance with managing agency rules regarding trail uses, campsite locations, closed areas and access to water, and human waste disposal.

6. Develop and maintain water sources in key locations to support the managed uses (see chapter 3).
7. Where practicable, agencies may partner with grazing permittees or lessees to provide water facilities for the benefit of both the trail and grazing operations.
8. Monitor trail condition at regular intervals to identify drainage and trail surface maintenance needs to avoid, minimize, or mitigate adverse effects to soil, water quality, and riparian resources.
9. Close and rehabilitate unauthorized trails that are causing adverse effects on soil, water, quality, and riparian resources.
10. If there is not already management direction for trail soil and watershed protection included in local management plans, additional guidance should be included to protect hydrology and soils within the AZNST national trail planning corridor.
11. New road or motorized trail construction across or adjacent to the AZNST should be avoided except under certain circumstances as described in the National Trails System Act. In those cases, ensure water and soil best management practices are followed.
12. Management actions within the national trail planning corridor that have the potential to increase soil erosion, degrade water quality or cause drainage concerns should be avoided. Avoid large developments and impervious surfaces, such as parking lots, that could concentrate runoff and increase erosion to higher than background amounts.
13. Identify and prioritize segments of the AZNST located within drainages and ephemeral waterways and analyze benefits of realignments nearby to protect watershed health and public safety.

Plants and Wildlife Protection

The plant and animal life of Arizona is as varied as its scenery and climate. The AZNST includes several significant biotic resources including some unique to Arizona.

Southeastern Arizona's isolated mountain ranges and river corridors are virtual desert oases and are the preferred pathway for many neotropical[27] migrants traveling to or from their North American breeding ground. The breeding ranges of several neotropical species overlap the AZNST. These species include elegant trogon, black-chinned hummingbird, varied bunting, western yellow-billed cuckoo, southwestern willow flycatcher, vermilion flycatcher, and greater peewee.

Wildlife movement does not stop at the international border and the genetic exchange between animal species of the sky islands of Arizona and those of Mexico, the Sierra Madre, as well as the movement of rare species across the border, contributes to the diversity found in this region. Many unique desert animals with habitat occurring in the southern sections of the AZNST include Gila monster, javelina, coatimundi, desert sucker, and desert pupfish.

Many of the species found along the AZNST are rare or federally listed species, including Bartram's stonecrop, Mexican spotted owl, northern Mexican garter snake, lowland leopard frog, northern goshawk, burrowing owl, Lucifer hummingbird, broad-billed hummingbird, thick-billed

[27] Species related to the tropical biogeographic region that extends south, east, and west from the central plateau of Mexico.

kingbird, yellow-billed cuckoo, jaguar and ocelot. Some federally listed species have designated or proposed critical habitat[28] overlapping the AZNST.

Important Bird Areas[29]

The AZNST passes through several Important Bird Areas. These are areas identified, using an internationally agreed upon set of criteria, as being globally important for the conservation of bird populations. Those along the AZNST include riparian corridors, cool and moist sky islands, and high elevation pine forests. Since birds have been shown to be effective indicators of wider biodiversity, the protection of these sites helps to ensure the survival of a correspondingly large number of other animal and plant species (Bird Life International 2017). The AZNST passes through the following important bird areas: Huachuca Mountains, Patagonia-Sonoita, Tucson Sky Island, Santa Rita Mountains, Boyce Thompson Arboretum/Arnett Queen Creeks, Mogollon Rim Snowmelt Draws, Anderson Mesa, and Grand Canyon National Park.

[28] Critical habitat is a term defined and used in the Endangered Species Act. It is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species that may require special management and protection.
[29] More information about Important Bird Areas can be found at http://aziba.org

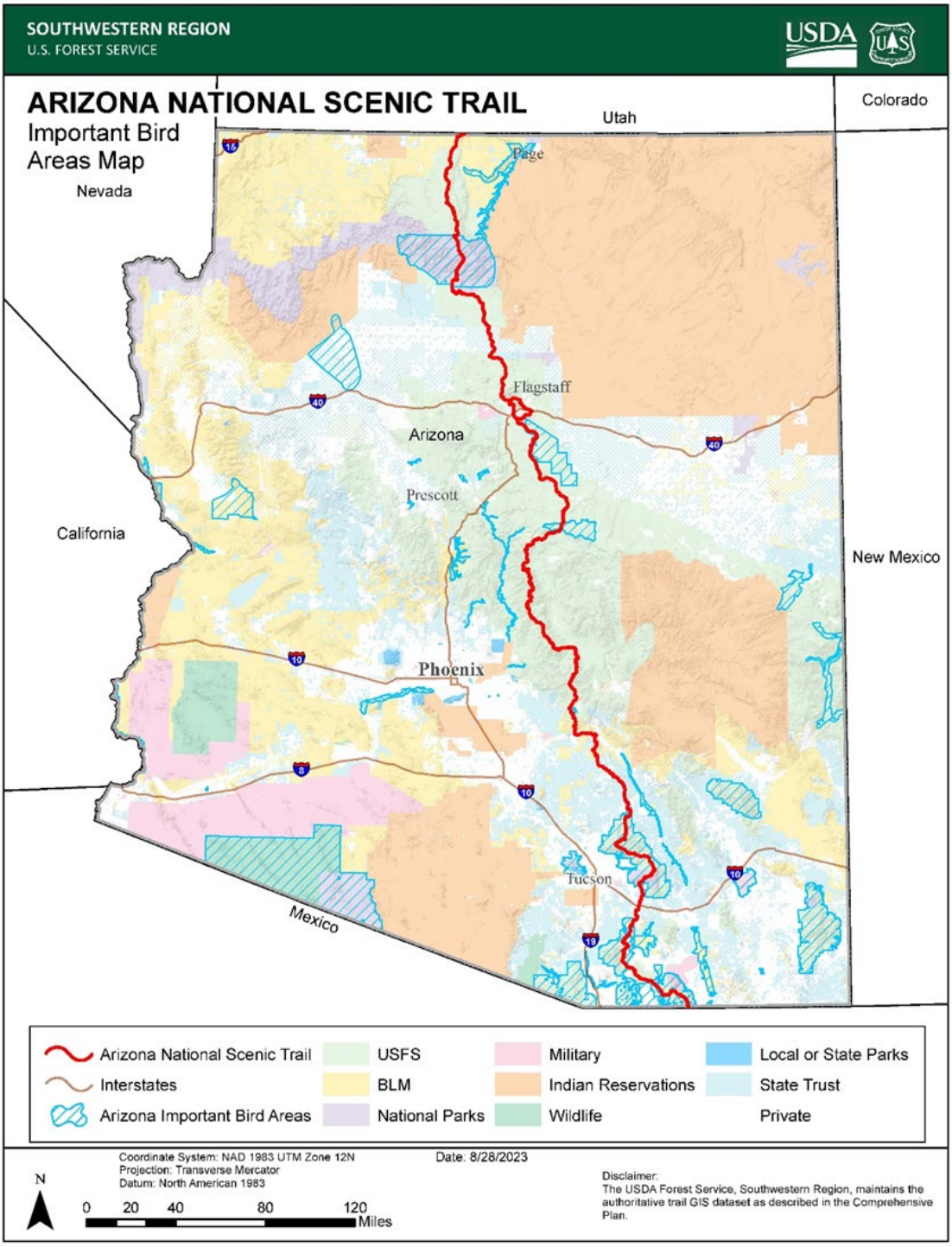

Figure 11. Map of Important Bird Areas

Desired Conditions

1. The plant and animal habitats that contribute to the great biological diversity of the AZNST are sustained in a healthy, unfragmented state.
2. Construction, maintenance, and recreational uses of the AZNST are compatible with the protection of resident and migratory wildlife and plant species and their habitat.

3. Introduction or spread of exotic or invasive plants is rare and does not contribute to the loss of native species or impairment of ecosystem function.

Management Practices

1. Trail realignments should be compatible with management objectives for threatened, endangered or sensitive species habitat or populations, and should avoid highly collectible plant species.
2. Management of the AZNST should comply with local agency weed management plans.
3. Use of weed-free seed is mandatory on BLM lands, and trail users should be educated about practices for preventing the spread of weeds.
4. Conduct surveys for exotic plant species, and noxious and invasive weed species, and apply treatments as needed.

Fire and Forest Health Protection

Fire is part of the natural setting of the AZNST. It is an accepted impact that should be managed for the long-term benefit of the natural resources found within the national trail planning corridor. Due to extreme fire conditions caused by unnatural fuels buildup and a changing climate, large sections of the AZNST have burned in fire events that were much larger and greater in intensity than historically normal. These types of fires impact trail users and nearby communities and cause significant damage to the trail and its associated resources.

Desired Conditions

1. Fire management practices help reduce fuels in AZNST national trail planning corridor and increase the chances of helping to maintain a more natural balance through managed fire or suppression, and post-fire activities.
2. Woodland health initiatives, including managed fire, successfully improve ecological resiliency and prevent catastrophic fire events along the AZNST.
3. Fire managers are cognizant of the AZNST's significance and develop burn prescriptions and incident action plans that protect and complement the AZNST's nature and purposes to the greatest degree possible.
4. When fire damages or closes the AZNST, restoration of trail continuity is prioritized to minimize impacts on national scenic trail recreation opportunities.

Management Practices

1. Avoid the use of motorized vehicles on the AZNST unless it is co-located on a motorized route. In the latter case, restore to pre-fire width and trail specifications.
2. Generally, avoid the use of the AZNST as a control feature unless using the AZNST as a control feature will protect its resources and values.
3. Fire on or in the foreground of the AZNST should be managed using minimum impact suppression tactics, or other tactics appropriate for the protection of values and resources for which the trail was designated.
4. Protect and maintain trail signage where possible.

5. Local agency trails coordinators and the Arizona Trail Association should be engaged in and a part of, completing a post-fire assessment. Focus on areas above trails that are burned in the moderate to high level for implementing flood prevention measures.
6. Install drainage features on the AZNST using specifications found in Forest Service Handbook 2309.18, Trails Management Handbook, to prevent channeling and resource damage due to post-fire rains.
7. Restore control lines to a near undisturbed condition within line of sight, or first 300 feet of the AZNST, whichever is greater.
8. Rehabilitate containment lines by rolling back the soil berm formed during line construction and constructing drainage features, as necessary, to prevent concentration of runoff near the AZNST.
9. To hasten recovery and help eliminate unauthorized motorized and non-motorized use of control lines in the national trail planning corridor, use measures such as recontouring, pulling slash and rocks across the line, and disguising entrances.
10. Using minimum impact suppression tactics, remove down trees across the AZNST, or burned trees in danger of falling across the AZNST.
11. Remove flagging and other signage when activities are completed.
12. Prioritize actions needed to reopen the AZNST, including rehabilitation of tread- and trail-related facilities, and mitigation of imminent safety threats.
13. Identify and sign detours that provide a safe alternate route around closed areas for equestrians, bicyclists, and hikers. Avoid use of paved roads for detours.
14. Consult fire and fuels management personnel during trail maintenance, trail reconstruction and other vegetation management activities planned along the trail.
15. Fuels reduction practices and standards, including (but not limited to) burn pile size and pile spacing requirements, and fuel loading tons per acre requirements, if applicable, are commensurate with land management plans standards and guidelines, and fire and fuels management personnel are consulted during project planning.
16. Commensurate with policy and direction, wildland fire operations may need to utilize the trail for fire control actions or to protect resources. Other natural barriers along the trail should also be utilized where possible.
17. In advance of forest health and restoration activities, avoid marking trees visible from the AZNST where feasible or utilize alternative marking methods such as Digital Prescription Guides where appropriate.
18. Forest health projects should be managed to minimize long-term visual impacts within and adjacent to the recommended national trail planning corridor.
19. Incorporate information about the AZNST and adjacent resources during wildland fire and prescribed fire operations.

Multiple Use

Existing Law, Regulation and Policy

Land management plans and direction must comply with the National Trails System Act. This plan does not set land use policy for other land uses. All land management direction applied to the national trail planning corridor or other area identified in a land management plan with plan components unique to the AZNST must be determined through local land management planning processes under the appropriate laws. BLM Manual 6250 and 6280, Forest Service Handbook 1909.12 Chapter 20, and Forest Service Manual 2353, guide the agencies in incorporating national scenic trails in land management planning at the local level. For National Park Service refer to Management Policy 9.2.2.7 and Director's Order Number 45.

This section describes the desired compatibility between the AZNST and its uses, and other land uses, and provides managers with information aimed at facilitating compliance with the National Trails System Act and Executive Order 13195.

More of the AZNST exists on lands with multiple uses than on protected lands managed primarily for preservation and low impact recreation. As outlined in legislation including the Multiple Use and Sustained Yield Act, provision of recreational opportunities is balanced with other land uses such as grazing, utilities, mineral exploration and mining, timber harvesting, hunting, off-highway vehicle driving and myriad other recreational uses. The AZNST was intentionally developed in areas with outstanding natural scenery and little development or minimal human disturbance following criteria laid out in the 1995 Arizona Trail Management Guide. The AZNST has co-existed with most other land uses with little conflict since its inception.

Desired Conditions

1. Compatibility exists between the AZNST and its uses and other land uses within the national trail planning corridor.
2. Impacts from new permitted uses, such as utility corridors and communications sites, are avoided or sufficiently mitigated to preserve and protect the nature and purposes of the AZNST and the cumulative long-distance trail experience.
3. Adverse effects of AZNST activities on adjoining landowners and land users, and their operations, are prevented or minimized.

Management Practices

1. When evaluating proposed projects or permitted uses, consider 16 U.S.C. 1246 (b) and (c), and Executive Order 13195.
2. Roads currently co-located with the AZNST that are not open for public motorized use should not be designated for such use unless, and not before, the AZNST is relocated to a setting of equal or better potential for the preservation of national trail values.
3. Motorized routes should be limited to a single, perpendicular crossing of the AZNST where no practicable alternative location exists that would not impact the AZNST.
4. Land use plans should include protections for the national trail planning corridor and AZNST resources, qualities, values, and associated setting and uses, while providing direction for managing the AZNST for compatibility with other land uses.

5. Analysis of activities that have the potential to impact the scenic, natural, historic, or cultural resources associated with the AZNST should be informed by an inventory of national trail resources, qualities, values, and associated settings. The analysis should determine whether projects would substantially interfere with the nature and purposes of the AZNST.
6. For activities with potential negative effects on the scenic, natural, historic, or cultural resources associated with the AZNST, these impacts should be minimized through avoidance, and when avoidance is not possible, the use of appropriate project design criteria, mitigating measures, and best management practices. Agencies and AZNST stewards communicate with agency representatives to coordinate with ranchers and other permit holders on measures to prevent conflicts between the AZNST and ranching and permitted operations. Examples would be measures to inform and educate trail users, such as signage on gates.
7. Pedestrian gates along the established route should be considered in lieu of wire gates.
8. If AZNST use is negatively impacting livestock operations and infrastructure, consult local range and/or recreation manager on ways to mitigate impacts.
9. If livestock operations and infrastructure are negatively impacting the AZNST and its users, consult local range and/or recreation manager on ways to mitigate impacts.
10. When utility lines, communication towers and other structures are constructed or replaced, managers should implement the following measures:
    - Avoid placement of new facilities near or across the trail by choosing alternate locations.
    - If there is no feasible alternate location, co-locate with existing utility corridors or other similar linear facilities such as roads.
    - Bury utility lines where they cross the AZNST where feasible.
    - When utility lines are replaced, consider siting them to reduce visibility from the AZNST, and to avoid related impacts such as new access roads and tree removal.
    - Choose materials for utility lines that blend into the landscape. (For transmission lines, dark and dull monopoles and non-specular wire is usually best.).
    - Linear utilities should cross perpendicular to the AZNST to minimize impacts.
    - Refrain from use of the AZNST as an access route for motorized equipment.

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Chapter 6. Implementation

General and Site-specific Development Plans

General Development Plans

Section 5(e) of the National Trails System Act requires that comprehensive plans for national scenic trails include general and site-specific development plans and anticipated costs (16 U.S.C. 1244(e)). The management practices in chapter 5 provide the general development plans for the AZNST.

Site-specific Development Plans

In general, land managing agencies are responsible for developing and implementing site-specific development plans for the segment(s) of the AZNST under their jurisdiction. Site-specific development plans should be informed by the trail-wide objectives, desired conditions, and management practices in chapter 5 of this comprehensive plan. Land managing agencies are strongly encouraged to coordinate with and involve the administering agency and, as appropriate, the partner organization(s) as early as possible in the discussion of site-specific plans. The AZNST administrator may advise on relevant provisions from the National Trails System Act, this comprehensive plan, and other direction for national scenic trails, as well as potential funding sources, existing cooperative agreements, and other resources to support project development and implementation.

Priority Actions

Recommended priority actions have been provided in appendix E to comply with the National Trails System Act (16 U.S.C. 1244(e)(3)) and also to identify and prioritize proposed projects for partner organizations and volunteers, the administering agency, and the land managing agencies to focus on in the future in order to develop the AZNST. This list reflects only what can be identified now and is not meant to exclude other projects not shown here. Inclusion of a proposed project on this list does not indicate a decision by the Forest Service or other land managing agencies. The proposed projects would be subject to compliance with relevant laws, regulations, and policies, including but not limited to the National Environmental Policy Act, National Historic Preservation Act, and Endangered Species Act. For proposed projects that would involve relocation of a segment of the AZNST, an optimal location review and other steps and approvals outlined in chapter 4 would be needed. For proposed projects that would involve acquisition of lands (or interests in lands), an optimal location review would first be needed. Consultation with affected tribes would also need to occur as part of the development of any of these proposed projects (see chapter 1 and chapter 2). Estimates of anticipated costs are provided as directed by the National Trails System Act and are intended to be only rough estimates. It is expected proposed projects from this list would be addressed through collaboration between partner organizations and volunteers, the managing agency or agencies, and the Forest Service.

Estimates of Anticipated Costs

A unique cornerstone of the National Trails System Act is the opportunity for collaborative trail management across various land ownerships. The costs estimated in table 6 below identify known costs for Forest Service administration of the AZNST to comply with the National Trails System Act (16 U.S.C. 1244(e)(3)). Various Forest Service administrative units and other land

management agencies also contribute to trail operation and management costs for portions of the AZNST that lie within their jurisdiction.

These costs will be incurred for the AZNST regardless of the status of the comprehensive plan due to its existing status as a national scenic trail.

Table 6. Estimated anticipated costs for Forest Service administration of the AZNST

Administrative Need	Estimated Cost
Administrative Start-up Need	
Submit the service mark design to the Forest Service, Office of General Counsel, Washington Office to be registered as a federal mark	AZNST administrator roles
Forest Service Administrative Need	
Arizona National Scenic Trail Administrator – Permanent employee	GS-13 Salary
Visitor Use Monitoring	$25,000 - $75,000 annually
National Forest and Partner Coordination (travel)	$10,000 annually
Collaborative Management with Federal, State, local agencies and partners organizations	AZNST administrator roles
Implement Monitoring Plan	$50,000+
Develop tools to share monitoring reports	$25,000
Update GIS corporate data following trail reroutes	$5,000
Develop videos, story maps, website features, or other tools for effective messaging to trail visitors around health and safety, natural and cultural resource protection, and other topics.	Variable
Continuous realty, land acquisition, and right-of-way costs – unable to project. Opportunities for acquiring lands or rights-of-way are dependent on voluntary landowners and could occur at any time through any of the federal, state, or local governments that manage portions of the trail.	Variable cost; unable to project
Contact private landowners along the trail to provide information about the trail and opportunities for donation, purchase, or exchange of lands or interests in lands; voluntary cooperative agreements; or other approaches for management of the trail.	Variable
Coordinate with the state, and local governments that manage segments of the AZNST regarding opportunities for donation, purchase, or exchange of lands or interests in lands; voluntary cooperative agreements; or other approaches for management of the AZNST.	$10,000
Establish voluntary cooperative agreements between the Forest Service and the other federal land managing agencies (National Park Service and Bureau of Land Management) documenting cooperation for management of the AZNST within federally administered areas.	AZNST administrator roles
Estimated costs to consider across all federal, state, or local government land management entities	
Maintenance cost estimate per mile of Forest Service Class 3 trail	$10,000- $15,000
Construction cost estimate per mile of new Forest Service Class 3 trail	$15,000 - $60,000
Future signage maintenance reposting due to damage or relocation of the trail	Variable
Future kiosk and interpretive sign development at trailheads	Variable
Continuous realty, land acquisition, and right-of-way costs	Variable
Coordinate with the land managing agencies and partner organizations to update and refine the geospatial data for the AZNST	$5,000

Administrative Need	Estimated Cost
Coordinate with the land managing agencies, private landowners, and partner organizations to identify priority areas for Optimal Location Review (OLR)	AZNST administrator roles
Update the inventory of AZNST signs or other marks across the trail	Variable
Coordinate with the land managing agencies and partner organizations to identify preferred temporary detour routes to be used in the event of future emergencies that necessitate closure of the trails, roads, or areas along the AZNST	AZNST administrator roles

Cooperative Agreements

Whenever possible, the comprehensive plan shall be addressed through partnerships. State, local, and private interests shall be encouraged to participate in AZNST operations in partnership with the Arizona Trail Association. Agreements should feature commonly agreed to standards, trail-wide consistency, and reasonable uniformity of operations. Federal land management agencies should strive towards uniformity of management across jurisdictional boundaries to ensure a consistent experience for trail users and non-profit partners.

Existing Cooperative Agreements

- The Forest Service was delegated by Congress as the lead managing agency and provided yearly funding to help administer it. At the time this comprehensive plan was completed, the agency provides yearly funding to the Arizona Trail Association through agreements to help maintain the trail, provide outreach to diverse communities, and assist in providing information about the trail to the public.
- Memorandum of Understanding between the Arizona Trail Association, Federal agencies, and Arizona State Parks.

Anticipated Cooperative Agreements

- Memoranda of Understanding with local governments who manage sections of the AZNST or own underlying lands or interest in lands.

Monitoring and Adaptive Management

An adaptive management approach helps managers ensure that desired objectives are achieved, and the intent of this comprehensive plan continues to be realized as future conditions change. This adaptive management and monitoring plan in appendix D recommends the indicators, thresholds, and resulting adaptive management actions that should govern long-term management of the AZNST as well as identifying potential management actions to be considered as needed to ensure desired conditions are being met.

The AZNST crosses a variety of ecosystems. Monitoring and adaptive management approaches will range from site-specific issues to regional or trail-wide conditions and trends. In most cases, selection of appropriate indicators and thresholds, monitoring, and implementation of adaptive management actions will be done at the managing agency unit level (with the involvement of partner organizations and volunteers, as appropriate) and overall monitoring trends will be reported to the AZNST Administrator. Monitoring of visitor use and resource conditions along the AZNST should complement and support other monitoring that may be carried out by the managing agency for the lands and other resources along the trail.

Provisions related to monitoring and adaptive management, guided by the adaptive management and monitoring plan in appendix D, should be included in cooperative agreements between the administering agency and land managing agencies or landowners.

The Forest Service should encourage sharing of monitoring protocols, data, trends, and reports among land managing agencies, and partner organizations to support a coordinated and collaborative management effort for the AZNST. Monitoring trends and reports should be shared with the public.

Glossary

adaptive management	For the Forest Service, a structured, iterative process for decision-making to reduce uncertainty through structured hypothesis testing and monitoring of outcomes. Key features include explicit characterizing of uncertainty and assumptions, testing assumptions and collecting data, analyzing new information obtained through monitoring and project experience, learning from feedback between monitoring and decisions, adapting assumptions and strategies to design better plans and management direction, making iterative and responsive decisions and adjusting actions on the basis of what has been learned, and creating an open and transparent process that shares learning (FSH 1909.12, Chapter 40, 41).
administering agency	The Federal agency delegated by the Secretary of Agriculture or Secretary of Interior (per the National Trails System Act) for national scenic trail or national historic trail coordination, guidance, technical assistance, and consultation with managers that have physical site management responsibility.
background	Distant part of a landscape. The landscape area located from four miles to infinity from the viewer (Agriculture Handbook 701).
bicycle	See managing agency definition. For the Forest Service, a pedal-driven, human-powered device with two wheels attached to a frame, one behind the other.
carrying capacity	Visitor capacity in the context of a national scenic trail or national historic trail, pursuant to Sec. 5(e) or (f) of the National Trails System Act (16 U.S.C. 1244(e) or (f)).
collaboration	In general, people working together to share knowledge, ideas, and resources toward common goals and objectives (such as seeking agreements or undertaking collective action) that they could not successfully achieve on their own.
comprehensive plan	A plan for a national scenic trail or national historic trail that satisfies the requirements of Sec. 5(e) or (f), as applicable, of the National Trails System Act (16 U.S.C. 1244(e) or (f)). The comprehensive plan addresses administration and management of an entire national scenic trail or national historic trail across jurisdictions.

congressionally designated route	Location of the national scenic trail according to the establishing language (and any maps referenced) in the National Trails System Act (16 U.S.C. 1244).
congressionally designated area	A designated area, as defined at 36 CFR 219.19, that is designated by Congressional act; may also be referred to as a statutorily designated area Examples include, but are not limited to, national scenic trails, national historic trails, wilderness areas, wild and scenic rivers, and national recreation areas.
connecting trail	A component of the National Trails System pursuant to Sec. 6 of the National Trails System Act (16 U.S.C. 1245) that complements designated national recreation, scenic, or historic trails by providing additional points of public access between or connecting to such trails.
cultural landscape	Human-altered landscapes, especially those slowly evolving landscapes with scenic vegetation patterns or scenic structures. Addition of these elements creates a visually pleasing complement to the natural character of a landscape (Agriculture Handbook 701).
cultural resource	See managing agency definition. For the Forest Service, an object or definite location of human activity, occupation, or use identifiable through field survey, historical documentation, or oral evidence that may be prehistoric (pre-contact era), historic (proto- and post-contact era), archaeological, architectural, structures, places, objects, and traditional cultural properties (FSM 2360.5).
feasibility study	A study conducted for a proposed national scenic trail or national historic trail, as identified by Congress, pursuant to Sec. 5(b and c) of the National Trails System Act (16 U.S.C. 1244(b and c)).
foreground	Detailed landscape generally found from the observer to ½ mile away, inclusive of the immediate foreground (the detailed feature landscape found within the first few hundred feet of the observer, generally, from the observer to 300 feet away) (Agriculture Handbook 701).
Gateway Community	For the AZNST, a geographic community (such as a city, town, or Census Designated Place) along or proximate to the AZNST where visitors can access goods and services to provision them for their trip. Common examples of goods and services include food, lodging, mail, laundry, internet access, and outdoor gear or supplies.

hiker/pedestrian use	See managing agency definition. For the Federal trail data standards, hiker/pedestrian use is foot travel, including wheelchairs or mobility devices.
interim location	A segment of the AZNST that is in a location that will likely be changed through relocation or other tools due to its divergence from the AZNST's nature and purposes (such as locations on open roads or motorized trails) and/or restrictions on public access.
land management plan	See managing agency definition. In general, a land management plan sets overall management direction and guidance for a planning area such as a specific national forest or national park.
managed use or uses	The mode or modes of travel on the trail that primarily guide trail-wide administration and management. For the AZNST, the primary uses are: (1) hiking (pedestrian or foot travel) with an emphasis on long-distance backpacking and (2) bicycling (3) where feasible and allowed by local management, pack and saddle stock use.
managing agency	The Federal, Tribal, state, or local agency with the authority and/or responsibility for decision making for a national scenic trail or national historic trail on the lands under its jurisdiction. The managing agency retains responsibility for planning, maintenance, and management unless transferred in a joint memorandum of agreement as outlined in National Trails System Act Sec. 7(a)(1)(A, B) (16 U.S.C. 1246).
Middleground	The zone between the foreground and the background in a landscape. The area located from ½ mile to 4 miles from the observer (Agriculture Handbook 701).
motor vehicle	See managing agency definition. For the Forest Service: Any vehicle which is self-propelled, other than: (a) a vehicle operated on rails; and (b) any wheelchair or mobility device, including one that is battery-powered, that is designed solely for use by a mobility-impaired person for locomotion and that is suitable for use in an indoor pedestrian area (36 CFR 212.1).
motorized trail	A trail that is designated for motor vehicle use and, for the Forest Service, identified on a motor vehicle use map (MVUM).
national historic trail	A trail as established by Act of Congress pursuant to National Trails System Act Sec. 5(a) (16 U.S.C. 1244(a))

	as described in National Trails System Act Sec. 3(a)(3) (16 U.S.C. 1242(a)(3)).
national recreation trail	A trail as established pursuant to National Trails System Act Sec. 4 (16 U.S.C. 1243) as described in National Trails System Act Sec. 3(a)(1) (16 U.S.C. 1242(a)(1)).
national scenic trail	A trail as established by Act of Congress pursuant to National Trails System Act Sec. 5(a) (16 U.S.C. 1244(a)) as described in National Trails System Act Sec. 3(a)(2) (16 U.S.C. 1242(a)(2)).
national trail management corridor	A land area identified within the managing agency unit's planning area that has the same set of applicable plan components to protect the trail's nature and purposes and, for the Forest Service, meets the intent of FSH 1909.12 Chapter 20 for designated areas. These may also be called management areas or geographic areas.
national trail planning corridor	For the AZNST, this is the term used for the area selected to satisfy the requirements in Sec. 7(a)(2) of the National Trails System Act, which is referred to in the National Trails System Act as the national trail "right-of-way".
national trail right-of-way	The area selected for the general national scenic trail or national historic trail location by the administering agency and published in the Federal Register (16 U.S.C. 1246(a)(2)); for the AZNST, this is referred to as the national trail planning corridor to avoid confusion with other ways the term "right-of-way" is used outside the context of the National Trails System Act
natural-appearing	Landscape character that has resulted from human activities, yet appears natural, such as historic conversion of native forests into farmlands, pastures, and hedgerows that have reverted back to forests through reforestation activities or natural regeneration (Agriculture Handbook 701).
nonmotorized trail	See managing agency definition. In general, a trail that has not been designated for motor vehicle use through the relevant managing agency process and/or where public use of motor vehicles is prohibited.
non-substantial relocation	For the AZNST, a relocation of a segment of the AZNST outside of the existing national trail planning corridor that is within the authority of the administering agency to approve, with concurrence of the managing agency or agencies for the lands involved, through administrative

	action, pursuant to Sec. 7(b) of the National Trails System Act (16 U.S.C. 1246(b)).
optimal location review	For the AZNST, an administrative process to identify the location within a given area that would best provide for the AZNST's nature and purposes and other trail values for the long-term.
pack and saddle stock	See managing agency definition. For the Federal trail data standards, pack and saddle stock are livestock used for riding or packing including horses or mules, llamas, or other packing animals, including goats.
partner organization	In general, for Federal agencies, collaborative working relationships between Federal government and non-federal actors, including non-governmental actors, in which the goals, structure, and roles and responsibilities of each partner are mutually determined. For the AZNST, a private or public organization that cooperates with the administering agency and/or managing agency on aspects of administration or management of the AZNST. Cooperation is usually documented through an agreement, which may be a monetary or non-monetary agreement. Some common types of work performed by partner organizations include but are not limited to trail maintenance, trail construction, volunteer management, visitor information, and monitoring.
project plan	See managing agency definition. In general, a project plan addresses a specific project or activity that supports and/or implements the direction contained in the comprehensive plan and/or the land management plan for an area.
realignment	For the AZNST, a change in the location of the travelway (or trail tread) for a segment of the AZNST within the existing national trail planning corridor.
relocation	For the AZNST, an administrative decision by the administering agency or, for substantial locations, an Act of Congress that moves the location of a segment of the AZNST outside the existing national trail planning corridor, pursuant to Sec. 7(b) of the National Trails System Act (16 U.S.C. 1246(b)).
road	A motor vehicle route over 50 inches wide, unless identified and managed as a trail (36 CFR 212.1) (FSM 7705).

scenic	Of or relating to landscape scenery; pertaining to natural or natural-appearing scenery; constituting or affording pleasant views of natural landscape attributes or positive cultural elements (Agriculture Handbook 701).
section hiking	Travel by foot (including by wheelchair or mobility device) to complete the entirety of a long-distance trail over multiple discrete trips or visits.
side trail	A component of the National Trails System pursuant to Sec. 6 of the National Trails System Act (16 U.S.C. 1245) that complements designated national recreation, scenic, or historic trails by providing additional single points of public access to special features along such trails.
special uses	See managing agency definition (terms may differ across managing agencies). For the Forest Service, all uses of National Forest System lands, improvements, and resources, except those authorized by the regulations governing shared use of roads (§ 212.9); grazing and livestock use (part 222); the sale and disposal of timber and special forest products, such as greens, mushrooms, and medicinal plants (part 223); and minerals (part 228) are designated “special uses” (36 CFR § 251.50).
substantial relocation	For the AZNST, a relocation of a segment of the AZNST outside of the existing national trail planning corridor that is outside the authority of the administering agency and requires an Act of Congress (16 U.S.C. 1246(b)) due to its extent, divergence from the AZNST’s congressionally designated route or trail values, or other factors.
temporary detour	For the AZNST, a route that can provide for continuous long-distance travel by allowing visitors to bypass segments of the AZNST and/or areas along the AZNST that have been closed to the public by the managing agency. In contrast to relocation and realignment, a temporary detour does not change the location of the AZNST travelway, national trail planning corridor, or national trail management corridor.
thru-hiking	Travel by foot (including by wheelchair or mobility device) to complete the entirety of a long-distance trail in a single trip or visit.
trail	The Federal interagency definition of a trail is a linear route managed for human-powered, stock, or off-highway vehicle forms of transportation or for historic or

	heritage values. See also managing agency definitions. For the Forest Service, a route 50 inches or less in width or a route over 50 inches wide that is identified and managed by the managing agency or landowner as a trail (36 CFR 212.1).
trail class	The prescribed scale of development for a trail, representing its intended design and management standards. Each trail class is defined in terms of applicable tread and traffic flow, obstacles, constructed feature and trail elements, signs, typical recreation environment, and experience. The trail classes are: Trail class 1 – Minimally Developed: Primitive trail, minimum to nonexistent constructed features. Trail class 2 – Moderately Developed: Simple trail, minor development, constructed features for trail resource protection. Trail class 3 – Developed: Trail appears constructed, structures common, designed for user convenience. Trail class 4 – Highly Developed: High standard trail, significant structures, may be fully accessible. Trail class 5– Fully Developed: Highest standard trail, significant structures, tread hardening common, typically fully accessible. (Federal Geographic Data Committee 2011)
Trail Management Objectives	Documentation of the intended purpose and management of a trail based on management direction, including access objectives.
trail values	The values for which the AZNST was designated, including its nature and purposes; primary uses; and significant natural, historical, and cultural resources to be preserved. Trail values are fundamental attributes of the AZNST. They are unique to the AZNST, based on its legislation and history, but also reflect its status as a component of the National Trails System.
trailhead	See managing agency definition. For the Forest Service, the transfer point between a trail and a road, water body, or airfield, which may have developments that facilitate transfer from one mode of transportation to another. For purposes of the Forest Service Trail Accessibility Guidelines (FSTAG) (FSM 2353.27), a trailhead is a site designed and developed to provide for staging for trail

	use and does not include: (a) Junctions between trails where there is no other access. (b) Intersections where a trail crosses a road or users have developed an access point, but no improvements have been provided beyond minimal signage for public safety.
travelway	For the AZNST, the location and portion of the AZNST upon which AZNST visitor traffic moves, similar to the concept of the trailway or trail tread.
treaty rights	Those rights or interests reserved in treaties for the use and benefit of tribes. The nature and extent of treaty rights are defined in each treaty. Only Congress may abolish or modify treaties or treaty rights.
trust responsibility	Trust responsibility arises from the United States' unique legal and political relationship with Indian tribes. It derives from the Federal Government's consistent promise, in the treaties that it signed, to protect the safety and well-being of the Indian tribes and tribal members. The federal trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal treaty rights, lands, assets, and resources, as well as a duty to carry out the mandates of federal law with respect to all federally recognized American Indian and Alaska Native tribes and villages. (See also FSM 1563.9b).
user-created trail	A trail that was not created by an authorized action.
visitor capacity	The maximum amounts and types of visitor use that a public use area can accommodate while achieving and maintain the desired resource conditions and visitor experiences that are consistent with the purposes for which the area was established (Interagency Visitor Use Management Council 2019).
visitor use management	The proactive and adaptive process of planning for and managing characteristics of visitor use and its physical and social setting, using a variety of strategies and tools, to sustain desired resource conditions and visitor experiences (Interagency Visitor Use Management Council 2016a).
volunteer	See managing agency definition. In general for the AZNST, an individual or group who freely donates time, talent, and resources to work with the administering agency or other managing agencies, or with partner organizations. Individual volunteers may be youth or adults.

wilderness character	"Wilderness character is a holistic concept based on the interaction of (1) biophysical environments primarily free from modern human manipulation and impact, (2) personal experiences in natural environments relatively free from the encumbrances and signs of modern society, and (3) symbolic meanings of humility, restraint, and interdependence that inspire human connection with nature. Taken together, these tangible and intangible values define wilderness character and distinguish wilderness from all other lands" (Landres et al. 2015).
wilderness characteristics	See managing agency definition. For the Forest Service, see FSH 1909.12, Chapter 70, 72.1.

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Appendix A – Maps

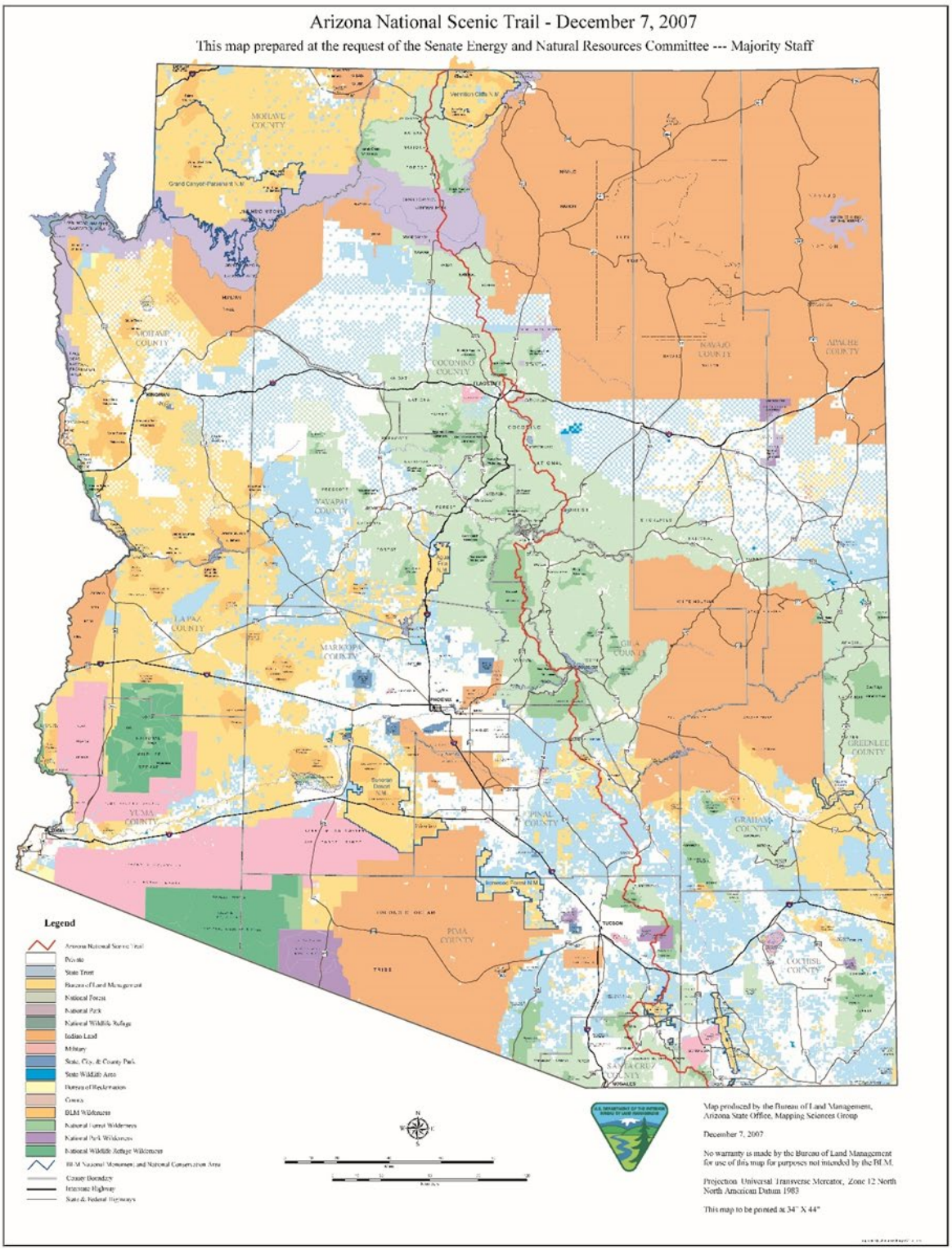

Figure 12. Legislative map for the Arizona National Scenic Trail – December 7, 2007

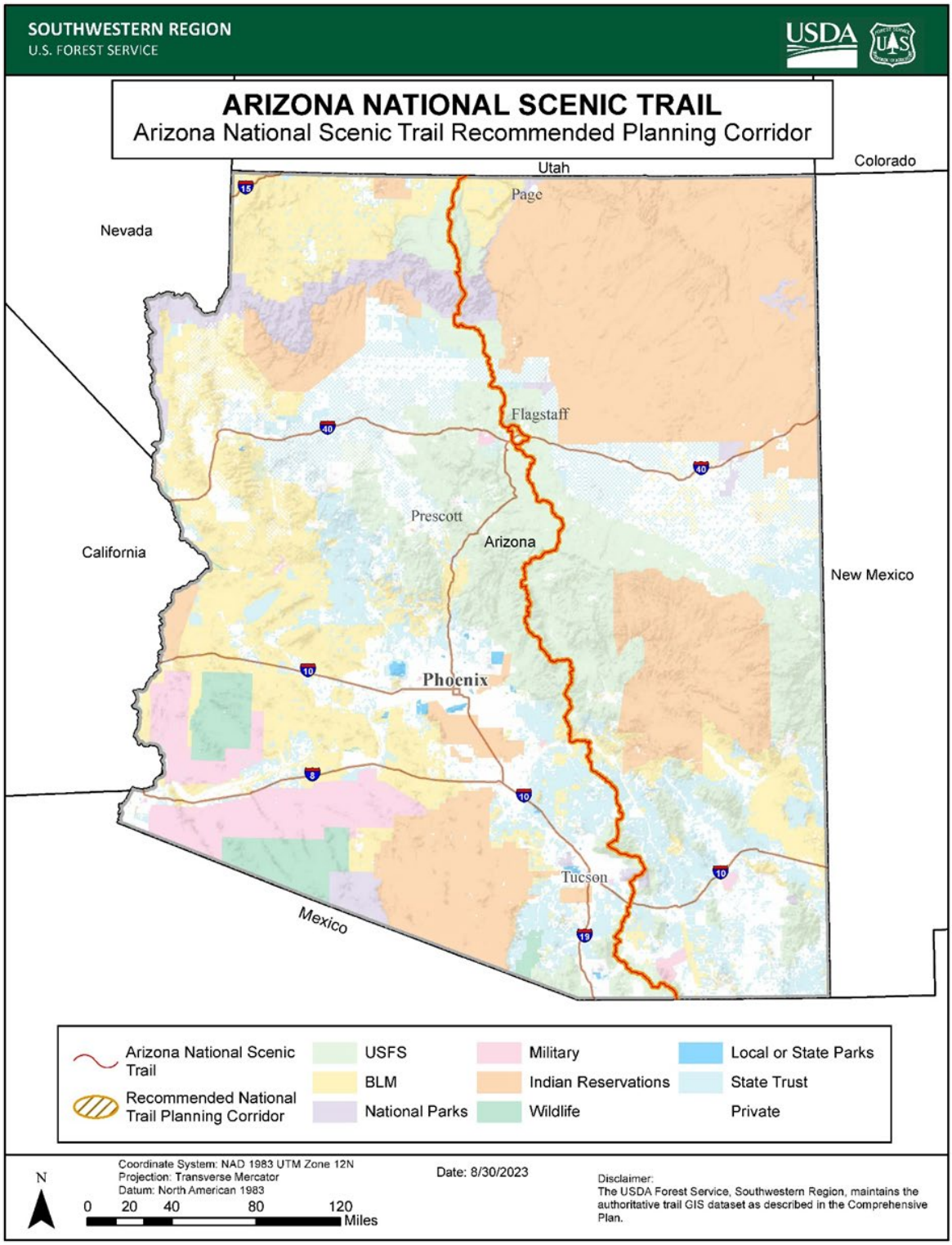

Figure 13. Recommended national trail planning corridor for the Arizona National Scenic Trail

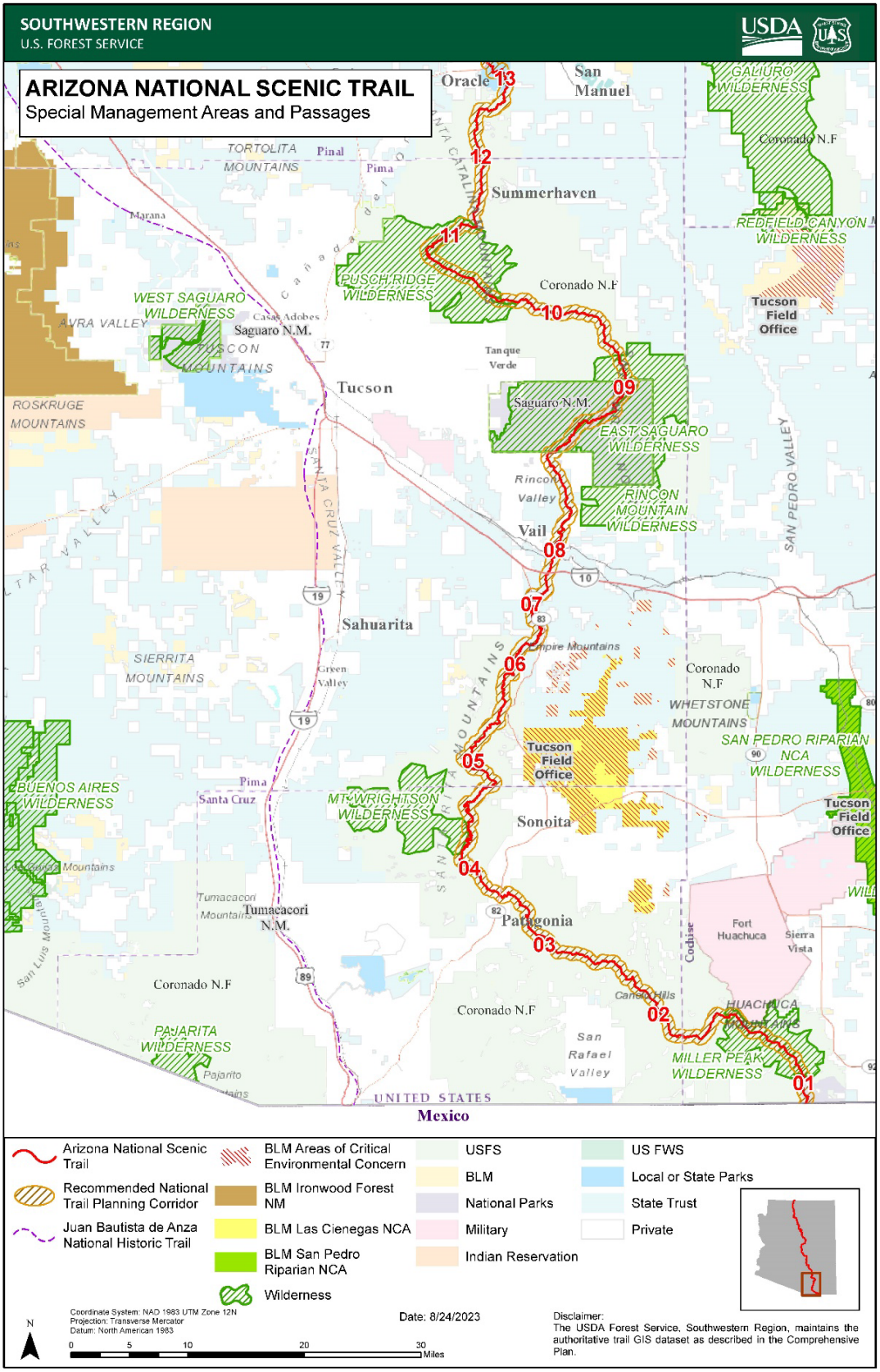

Figure 14. Special management areas and passages (Passages 1-13)

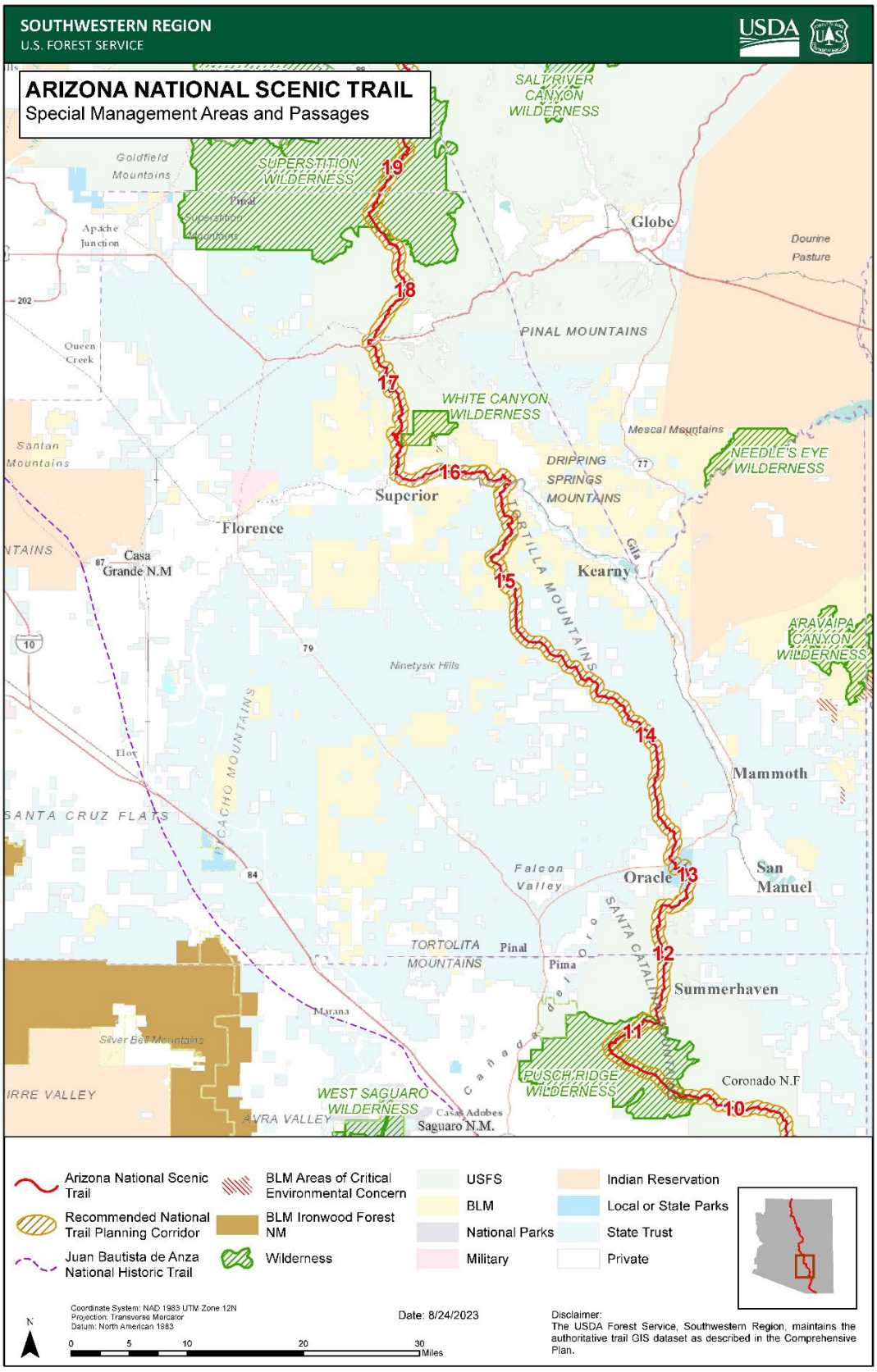

Figure 15. Special management areas and passages (Passages 10-19)

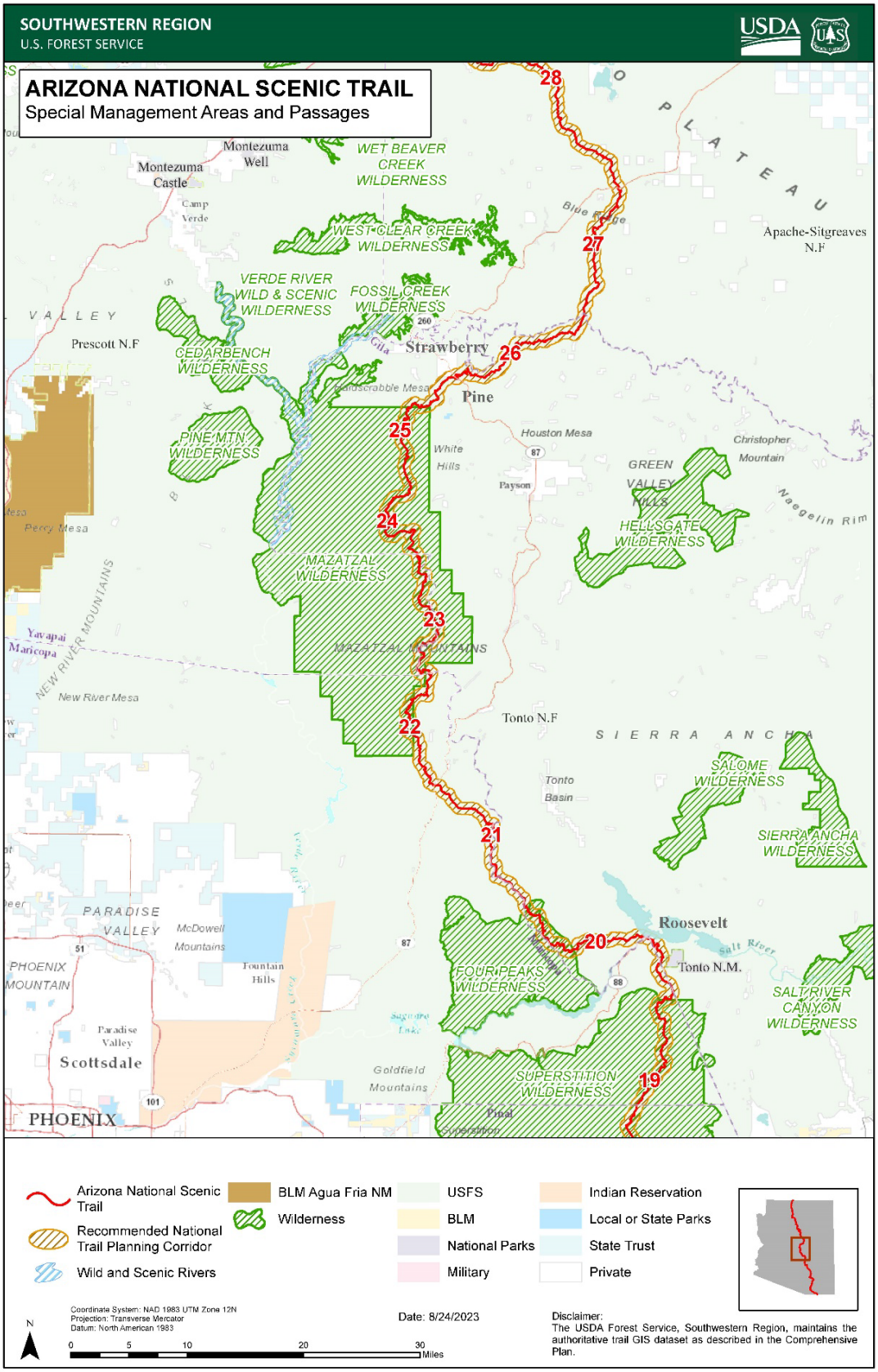

Figure 16. Special management areas and passages (Passages 19-28)

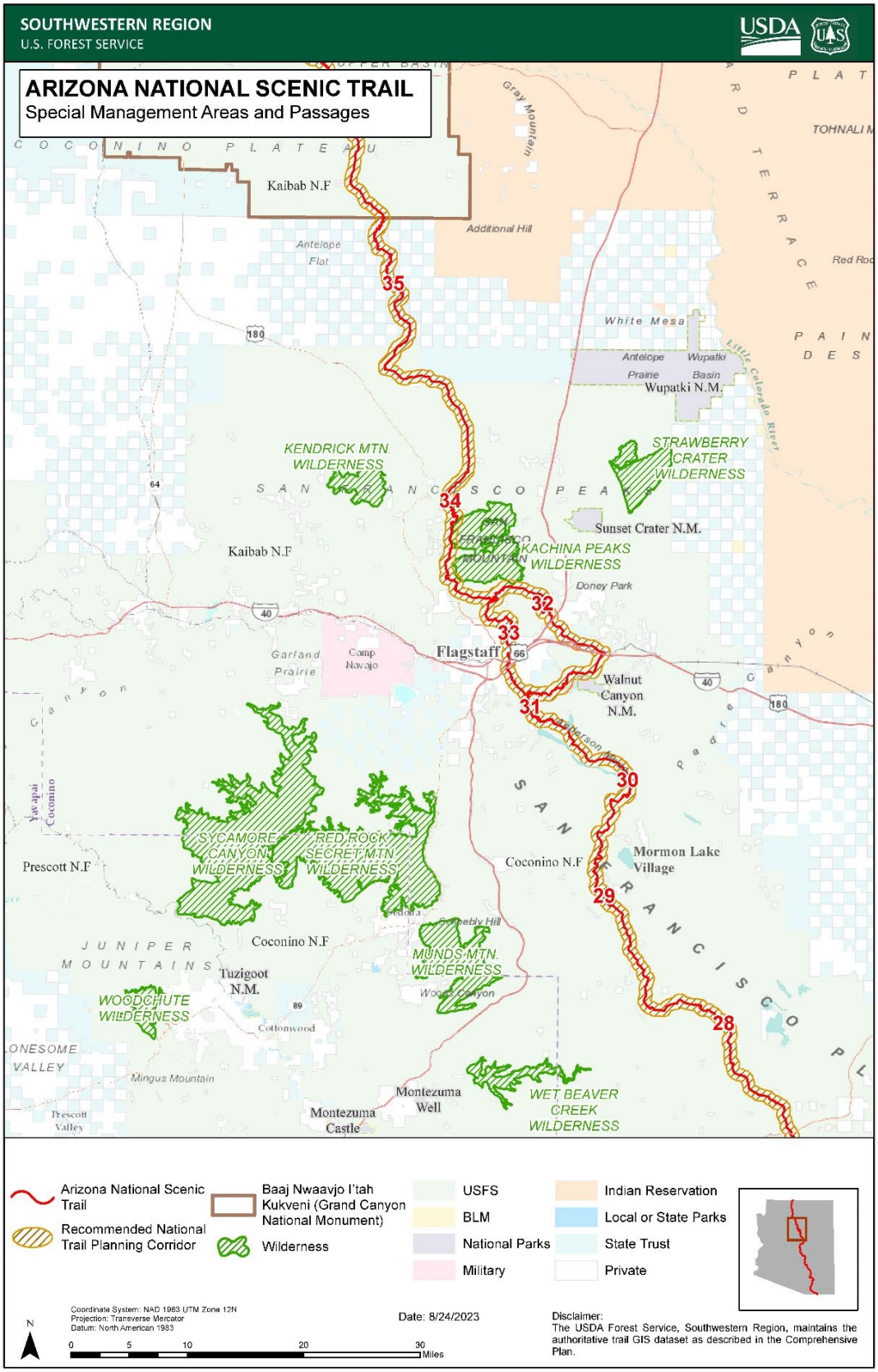

Figure 17. Special management areas and passages (Passages 28-35)

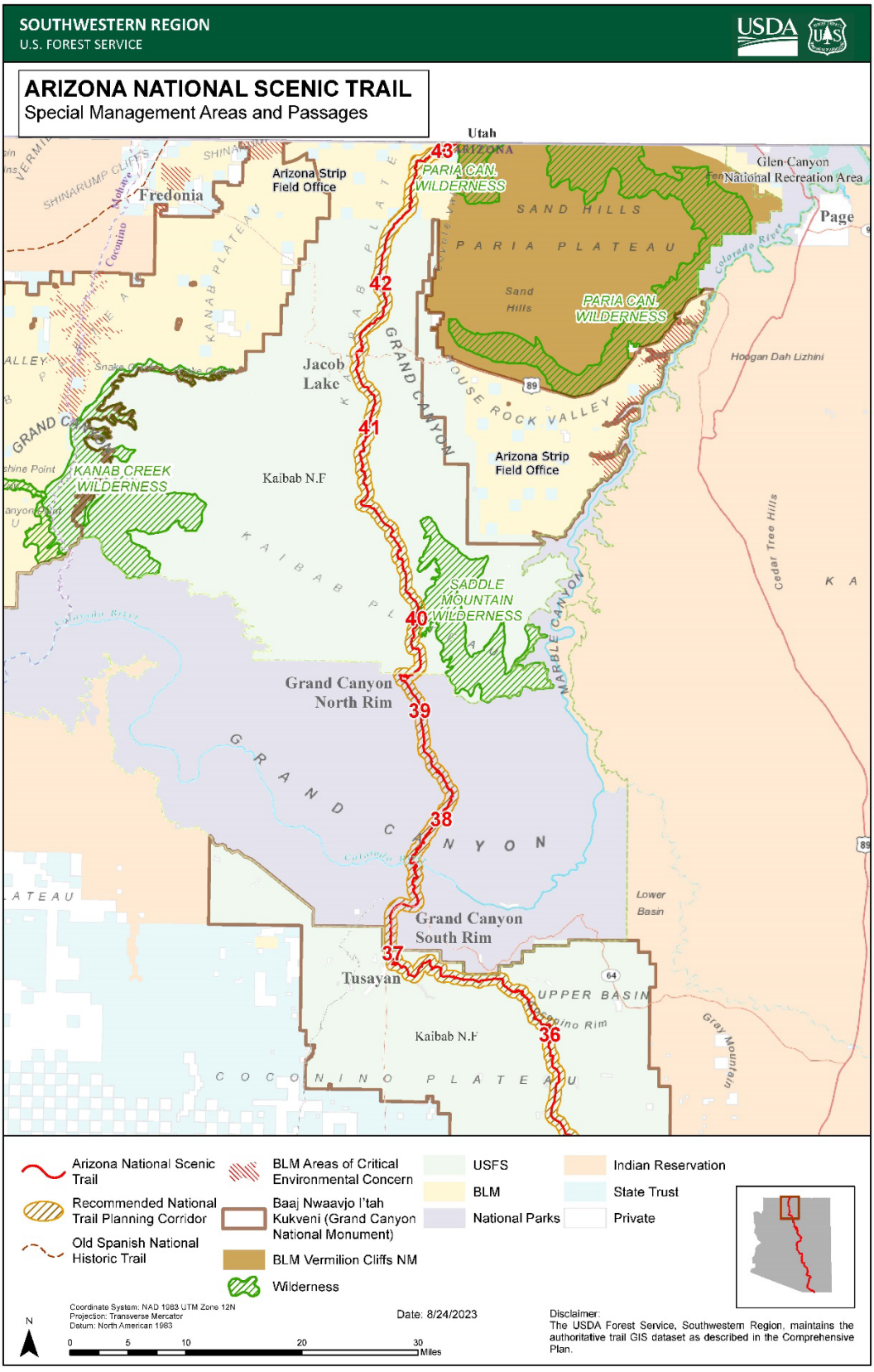

Figure 18. Special management areas and passages (Passages 36-43)

Appendix B - Geodatabase Management

Introduction

The United States Forest Service Southwestern Region (Region 3) is congressionally designated as the administering agency of the Arizona National Scenic Trail (AZNST). This assignment includes the production and long-term management of the AZNST authoritative Geographical Information Systems (GIS) geodatabase (referred to as geodatabase). The Forest Service has conducted a detailed review of relevant spatial data for the trail route and produced a Federal Trail Database Standard geodatabase containing an accurate and up-to-date national trail planning corridor for the AZNST. The geodatabase includes the location of the trail on public lands including the Forest Service, National Park Service, Bureau of Land Management, Arizona State Parks, county, and municipal lands, as well as on private lands which comprise approximately three percent of the trail. The Forest Service will manage the spatial geodatabase and update the constantly evolving trail with new geographic locations after they are verified and incorporated into the authoritative data.

Federal Trail Standard Guidelines

The authoritative geodatabase follows the Federal Trail Data Standards, as defined by the Federal Geographic Data Committee. In 2011, the Federal Trail Data Standards were established as a standardized schema and trail terminology that can be consistently applied to Federal trails data, enabling trail information to be shared across multiple agencies and partners in a common format. The Federal Trail Data Standards address the need for interagency trail data standards in order to efficiently manage long-distance trails on public and federal lands that cross multiple agency jurisdictions across the country.

Federal Geographic Data Committee (FGDC) compliant metadata exists for the data, though some of this will need to be updated as the data methodology and metadata format evolves. Use of Federal Trail Data Standards terminology and schema will serve the public-facing data needs as well as standardize the authoritative data sources for greater interoperability between different agency standards.

The Federal Trail GIS Schema Template was developed in 2022. It was adopted by land management agencies to allow for aggregation of public-facing trail data from multiple agencies and partners into a common database schema. These trails are considered National Geospatial Data Assets as part of the Geospatial Data Act of 2018, and therefore must be maintained in a standardized fashion. The Trail schema accomplishes this requirement and can be found here: Federal Trail GIS Schema Template 2022. That data schema can be utilized by all agencies and partners to establish a unifying and common trail geodatabase schema (NGDA Transportation).

Authoritative Geodatabase

In 2023, the Forest Service created an authoritative geodatabase for the AZNST referencing data from the Forest Service, National Park Service, Bureau of Land Management, Arizona State Parks, Arizona Counties, and Arizona Trail Association. The spatial accuracy of the AZNST data on Forest Service and BLM lands (approximately 75 percent of the trail) is 50 feet, which means the trail alignment is within 50 feet of its actual physical location, with the majority of the trail within 10 feet. The accuracy for other agencies and private property may be more or less accurate, primarily due to the difficulty of obtaining authoritative data for these segments. To

create the authoritative geodatabase, three types of data were used including: Federal and State Data, Reference Data, and Third-Party Data. The three methods described below should always be used to update the authoritative geodatabase if a section of trail needs verified, updated, or created.

Federal and State Data

This data includes official GIS data that the National Park Service, Bureau of Land Management, and Arizona State Parks sent to the Forest Service. For other portions of the trail, the managing agency was contacted and requested the Forest Service defer to third party data to incorporate into the authoritative geodatabase. For portions of the trail on Forest Service lands, data from Natural Resource Management (NRM) databases were incorporated to provide the most accurate data possible, including spatial and tabular trails data, roads data, polygon data depicting ownership parcels, Forest boundaries, and wilderness boundaries.

Reference Data

Reference data is necessary to analyze and correct trails data but is not authoritative trails data in and of itself. Some examples of these data types include:

DERT Report (Digital Error Reporting Tool) – Performs an analysis and comparison between tabular data stored in the Forest Service Natural Resource Management (NRM) database and the Spatial component from Spatial Database Engine (SDE) Trails data. The report provides an overview of the analyzed data and categorizes inconsistencies and errors into separate categories. This data product also comes with GIS and descriptive elements that can be used to analyze trail data for inconsistencies and errors.

High Resolution Lidar and Hillshades – This method was used to verify the centerline of the trails when trails data provided did not seem accurate or precise.

High-Resolution Orthophotography and other High-Resolution Imagery – This method was used to identify trail centerline locations and paths through physical evidence in the high-resolution imagery.

Third-Party Trails Data - This data is gathered from different sources or trail partners and can provide useful information about how the public uses the trail. Some examples include Arizona Trail Association GIS Passage information and centerlines. The Passage information was used in the authoritative geodatabase where land managing agencies requested it be incorporated and where the trail is located on private property. The Arizona Trail Association has a vital role in collaborating with the Forest Service to help keep the authoritative geodatabase updated (refer to the section below on the workflow for revised or new GIS data). The Arizona Trail Association consistently conducts GPS surveys of trail segments where reroutes or trail changes are ongoing or completed and should be considered authoritative trails data in many cases.

AllTrails user-submitted trails data - accessible from https://www.alltrails.com.

Landowner data records, including information provided by state and other federal agencies.

Workflow for Revised or New GIS Data

A number of methods and workflows are incorporated to maintain the authoritative geodatabase. This requires identifying who (types of users) and how data is deleted, amended, or added into the Forest Service spatial and tabular geodatabase.

Types of users in the workflow include the following:

Viewer – Anyone who can view or download the data, including the public.

Editor – Members of agencies or organizations that can send trail alignment edits to the Forest Service.

Data Steward – The Data Steward will use the Feature Service for editing if they are outside the Forest Service or they will edit a geodatabase directly if they are Forest Service staff. Editors will not be able to publish edits into the authoritative geodatabase. This is completed by the Data Steward.

Forest Service Data Steward – Forest Service staff capable of reconciling and posting trail data. This is likely the Southwestern Region, Forest Service Trail Administrator and GIS Program Manager (or GIS staff they delegate). Forest Service staff must be the ones who promote data into the authoritative geodatabase. The Data Steward will ensure each update has gone through the full review from the administering agency before the edit is incorporated into the authoritative geodatabase. On private property the Forest Service will defer to the Arizona Trail Association GIS Passage and information and centerlines. On Forest Service administered lands, the Data Steward must coordinate with individual forests and assure the data is updated by the local unit in the Forest Service databases including INFRA (Infrastructure Applications) and Spatial Database Engine (SDE) Forest Service ArcGIS.

Online Account Manager – The Account Manager will publish new feature classes into the authoritative geodatabase. Once this is completed, the data then becomes public facing for consumption by other agencies and the public.

GIS Feature Service

A Feature Service allows the Forest Service to share spatial and non-spatial datasets over the internet and allow anyone to access, download, and view the data according to their own project needs. In order to make the geospatial data readily available to the public and partnering agencies, the Forest Service established an Environmental System Research Institute (ESRI) Feature Service utilizing ArcGIS Online (AGOL). The Feature Service will be maintained by the Forest Service, Southwestern Region, and be located on their website and AGOL group. The Feature Service is comprised of Feature Layers managed and updated by the Southwestern Region GIS and Recreation staff. Once new GIS data is approved by the Forest Service Data Steward and inputted by the ArcGIS Online Account Manager, a Feature Service is used to publish a new dataset in AGOL. The Feature Service and associated Feature Layers will contain all relevant attribute information including trail numbers, trail names, and corresponding Arizona Trail Association passage numbers. The GIS data will be published in accordance with the Federal Trail Database Standards, which enable national, regional, state, partners, and the public to use a common and mutually understood terminology for recording, retrieving, and applying spatial and tabular information.

Differences Between the Authoritative Geodatabase and Arizona Trail GIS Passage Information

There is, and will likely remain, a difference between the Arizona Trail Association GIS Passage and trail centerline information and the Forest Service GIS authoritative geodatabase. The differences in the GIS data are discussed below, so agencies and the public are aware of them.

Authoritative Geodatabase - The Forest Service, Southwestern Region, will oversee the authoritative geodatabase and the Feature Service that is available to agencies and the public. The authoritative geodatabase will be maintained as the Congressionally designated trail.

At the time this comprehensive plan was written, the trail length was calculated to be 807 miles, which aligns with the Congressional legislation. Following adoption of this comprehensive plan, the Optimal Location Review Process will be used to approve new trail sections or trail reroutes on any agency-administered lands (see chapter 4. “Relocating Segments of the Trail”).

Identifying the location of the AZNST route and the corresponding national trail planning corridor is an administrative action which requires approval by the regional forester. The optimal location review is not a National Environmental Policy Act analysis or decision document. However, compliance with the NEPA and provisions of other laws may be necessary for actions that would implement a relocation (for example, trail construction).

Optimal location review utilizes a collaborative approach in which a review team works together to identify an optimal location for the segment of the AZNST under review. Following approval of a trail relocation, the Forest Service Southwestern Region Data Steward works with the ArcGIS Online Account Manager to update the authoritative geodatabase. The new trail alignment then becomes the official AZNST trail planning corridor, and the number of trail miles would be updated accordingly.

Arizona Trail Association GIS Passage and Trail Centerline Information - The GIS Passage information location on the Arizona Trail Association website includes information beyond what is found within the Authoritative Geodatabase, including connector trails; loop options utilizing other system trails and roads; viewpoints and points of interest; and recommended routes around designated wilderness for mountain bikers. These connections are not part of the Congressionally designated trail and will not be included in the Forest Service authoritative geodatabase. In addition, the Arizona Trail Association may include other information that the Forest Service is unable to include due to liability or policy constraints such as water sources. For these reasons, the Arizona Trail Association GIS Passage and trail centerline information, and the Forest Service authoritative geodatabase (and the number of miles associated with each one) will differ from each other.

Appendix C –Trail Carrying Capacity

Introduction

The National Trails System Act requires that comprehensive plans include an identified carrying capacity of the trail, and a plan for its implementation (16 U.S.C. 1244 (f) (1)). The contemporary term for carrying capacity is visitor capacity when applied to outdoor recreation. The document adopts the following definition:

> the maximum amounts and types of visitor use that a public use area can accommodate while achieving and maintaining the desired resource conditions and visitor experiences that are consistent with the purposes for which the area was established (Interagency Visitor Use Management Council 2019).

The term visitor capacity is equivalent to the term carrying capacity in the National Trails System Act. The term visitor capacity will be used in this comprehensive plan, consistent with the terminology used in the Interagency Visitor Use Management Framework. In addition to meeting the regulatory requirements of the National Trails System Act, establishment of visitor capacity and its subsequent monitoring and implementation aids in the identification, management and protection of the inherent resource and social values associated with the AZNST. Identification of visitor capacity is one of many tools available to managers to achieve and maintain desired conditions.

The nature and purposes of the AZNST (see chapter 3, Nature and Purposes) define the desired conditions of the trail setting and experience and establish the context for appropriate activities and uses for the AZNST and its corridor. The AZNST's nature and purposes statement recognizes the public's connection with the unique and diverse treasures of Arizona's outdoors for purposes of recreation, spiritual renewal, improved health, and high-quality time spent with family and friends. Striking an appropriate balance between trail user desires and resource protection and conservation within the framework of applicable law, regulation and policy direction presents a constant management challenge. Through specific visitor use management practices that promote the desired conditions for the AZNST, this comprehensive plan provides general, but consistent, direction that maintains flexibility for implementation by different agencies in varied situations.

Approach to Identifying Carrying Capacity

The Nature and Purpose of the AZNST, as described in chapter 3, form the framework and approach for this appendix.

Interagency Visitor Use Management Framework

Visitor use management is defined as the proactive and adaptive process of planning for and managing characteristics of visitor use and its physical and social setting, using a variety of strategies and tools, to sustain desired resource conditions and visitor experiences (Interagency Visitor Use Management Council 2013). Visitor use characteristics include the amount, type, timing, and distribution of visitor use, including visitor activities and behaviors. The primary goal of visitor use management is to maintain opportunities for high-quality visitor experiences while protecting natural and cultural resources. Visitor capacity strategies are encompassed in the broader principles of visitor use management.

The Interagency Visitor Use Management Council's Visitor Capacity Guidebook: Managing the Amounts and Types of Visitor Use to Achieve Desired Conditions includes four guidelines for determining visitor capacity (Interagency Visitor Use Management Council 2019):

1. Determine the analysis area(s).
2. Review existing direction and knowledge.
3. Identify the limiting attribute(s).
4. Identify capacity.

The 2016 Position Paper: Visitor Capacity on Federally Managed Lands and Waters: A Position Paper to Guide Policy includes recommendations for addressing visitor capacity in accordance with the visitor capacity (also known as carrying capacity, user capacity, and recreational capacity) requirements found in the Wild and Scenic Rivers Act, National Trails System Act, and National Parks and Recreation Act.

The recommendations in the 2016 position paper specific to National Trails are:

- The comprehensive plan should include the general visitor capacity for a national trail (such as an approximation of the appropriate types and levels of use that can be accommodated generally by the national trail) and, if applicable, visitor capacities by site, segment, or area, without adversely affecting the nature and purposes of the trail.
- The comprehensive plan should include an implementation plan for addressing the identified visitor capacities.

Where the national trail administering agency, in consultation with the local agency manager, determines current visitor use levels are threatening resource values or desired conditions for a specific national trail site, segment, or area, the national trail administering agency, in consultation with the local agency manager, should encourage the local agency manager to promptly adopt or adjust visitor capacities for that site, segment, or area or take other measures to reverse these conditions, and should provide assistance in that effort as needed, so that the activity or use will not be incompatible or substantially interfere with the nature and purposes of the trail (IVUMC 2016).

Visitor Capacity Terminology

The term "capacity" in the recreation context has been confusing due to the tendency to use this term to represent the entire concept of visitor use management. Thus, a few key points must be noted.

Visitor capacity is not the same as use limits. Limiting use is a specific management tool, whereas visitor capacity is an overall estimate of how much use an area can sustain while achieving desired conditions. Limiting use is only one of many tools available to managers to ensure visitor use does not cause adverse impact to desired conditions. Other tools available to managers include providing visitor education, offering information about alternative opportunities, changing where or when use occurs, re-designing sites, re-distributing use, limiting the type(s) of use, limiting group size, and many others.

Visitor capacity is about the maximum amount of use that can be sustained, not how much use is desired.

The term carrying capacity as used in this document is synonymous with "visitor capacity," "user capacity," and similar terms.

Worksheets

Following the visitor use management capacity guidelines one through three, each of the 43 passages of the AZNST were considered (see detailed descriptions of each passage at Arizona Trail Association-Passages). Visitor capacity trail passage description and decision criteria worksheets were used to document existing direction and managers' knowledge of trail and resource conditions and constraints. Interviews with local trail managers were conducted to help identify the limiting attributes, rate the capacity decision criteria, and identify conditions related to visitor use that are important to monitor.

For each trail passage, the capacity decision criteria listed below were rated as high, moderate, or low concerns based on the professional judgement of local trail managers.

1. **How frequently are there conflicts** between current trail uses (hiking, biking, horseback riding), or between types of trail users (thru travel, segment travel, day travel)?
2. To what extent does the **social experience** differ from desired conditions (group sizes, encounter rates, expectations)?
3. To what extent is current trail use and behavior negatively affecting the desired condition of **natural and cultural resources**? (Describe the impact to the resource specifically).
4. What is the level of difficulty for **managing visitor use** in this area?
5. How great is the need for **additional physical capacity** (such as trailheads, parking areas, toilets, water sources) to accommodate current and additional visitor use (guided and unguided)?
6. To what extent can people **disperse** along this passage due to terrain, different valued destinations, number of access points, campsites?
7. Based upon sound professional judgement, **the need to conduct a capacity analysis or address issues or constraints** for this passage is (high, moderate, low).

Management Direction and Existing Conditions

Management direction relevant to visitor use along the AZNST is included in U.S. Forest Service Land Management Plans, National Park General Management Plans, Bureau of Land Management resource management plans, wilderness management plans, and other relevant state and local plans. Through the worksheet data collection process collected prior to the onset of Covid-19, local managers identified key management constraints such as group size, group encounter rates, permit requirements, etc. This management direction was used where applicable to help identify the trail visitor capacity.

Where available, additional visitor use data was considered, including trail register, trail counter data, trail camera data, wilderness permit data, NVUM reports, and National Park Service Unit visitor use data.

The AZNST sees the most use in spring and fall although much of the route is useable year-round. Thru-hikers have the most limited window of opportunity to complete the trip while avoiding snow in the mountains and the summer heat of the desert, which can begin early spring

and last into autumn. Thru travelers typically start their trips at the southern terminus in February or March or begin at the northern terminus in late September or October. The use patterns can be correlated with Saguaro National Park's highest use along the trail in February, March, and April and Grand Canyon's highest use along the trail in October, April, and May. This is also verified by the Arizona Trail Association Trail Finishers Report 2019 with data from 2015-2019. Northbound starts are typically in the spring with the most common starts in March. Southbound starts are typically in fall with the most common starts in October. The average time to complete the trail for thru hikers is 43 days with the most common amount of time 60 days.

Limiting Factors

Limiting factors related to trail visitor capacity are attributes that most constrain the trail's ability to accommodate visitor use. These factors vary across different passages of the trail. Some examples are a limited number of campsites due to permit requirements or terrain that constrains the number of campsites available, areas of high use where visitor conflicts interfere with the thru-hiking experience, encounter rates or group size limitations set in wilderness plans, or resource impacts such as soil erosion or vegetation impacts.

Through the worksheets and interview process, we have identified limiting factors, including backcountry campsite permit limitations, wilderness group size and encounter rates, areas of conflict with roads and motorized uses, areas of high visitor use, and visitor use conflicts, and other conditions related to visitor use that are important to monitor. Identifying the most limiting factor by trail passage helped prioritize locations where site-specific visitor capacity considerations may be needed in the future. Although all 43 trail passages were considered during the worksheet interview process, for many trail passages, specific limiting factors (such as campsite limitations, high use conflicts, or resource impacts) were not found at the coarse scale considered. At a local level, limiting factors may be identified in the future.

There are two main types of limiting factors that may be relevant to management of the AZNST:

- Limiting Factors related to visitor capacity of the trail (such as number of campsites, campsite permit requirements, availability of water, trail conditions, seasonal limitations, and so forth).
- Factors external to the trail that may lead to limits on use (such as wilderness encounter, group size limits, or management of adjacent lands).

The specific limiting factors identified for the AZNST are described below. When looking at the AZNST as a whole, the limiting factor that most constrains the thru-hiker opportunities are the backcountry campsite permit limits in Saguaro and Grand Canyon National Parks (due to the length and nature of these trail passages, nearly all thru-hikers would need to camp overnight in these two areas). Other limiting factors across trail passages are noted and incorporated into the monitoring plan appendix.

Backcountry Campsite Permits

The AZNST passes through two National Park Service Units where backcountry camping permits are required, and a limited number of designated campsites are available along the trail. In these trail passages, visitor capacity is expressed as a maximum number of people per night at a campsite. This capacity is based on existing national park management plans and many need to be adjusted if those plans are updated or revised.

Saguaro National Park Permits – Not Arizona Trail-specific Permits

Through the Rincon Valley and over the Rincon Mountains, AZNST travels through the Saguaro National Park. This stretch of the trail is located in Rincon Valley (Passage 8) and Rincon Mountain (Passage 9) and travels 19.5 miles through the park. There are multiple trailheads to access both hiking passages. The Gabe Zimmerman trailhead, which is south of the park, is 26 miles east of Tucson. The southern Saguaro entrance is 28 miles east of Tucson, and inaccessible by vehicle. It is reached by hiking from the Loma Alta Trailhead, which is 2.8 miles to the west of the entrance. The northern access trailhead at Redington Road is 29.5 miles northeast of Tucson. This section summarizes all park permits with no distinction between Arizona Trail and other park users.

Saguaro National Park prohibits backcountry camping outside designated campgrounds. There are two campgrounds within the park on the AZNST, Grass Shack Campground and Manning Camp. Grass Shack has a total of three reservable campsites located at 5,200 feet in elevation. The campground offers plenty of shade and provides water most of the year from the Chimenea and Madrona Creeks. Manning Camp is about four miles north of Grass Shack along the AZNST. It has a total of six reservable campsites located at 8,000 feet in elevation. This campground is snow-covered in the winter and provides water most of the year. The maximum overnight capacity for camping along the trail is 54 people per night.

Both campgrounds have sites reservable only through https://www.recreation.gov/. The cost for a campsite is $8.00 per night at both Grass Shack and Manning Camp along with the $15.00 permit per person to enter the park for 7 consecutive days.

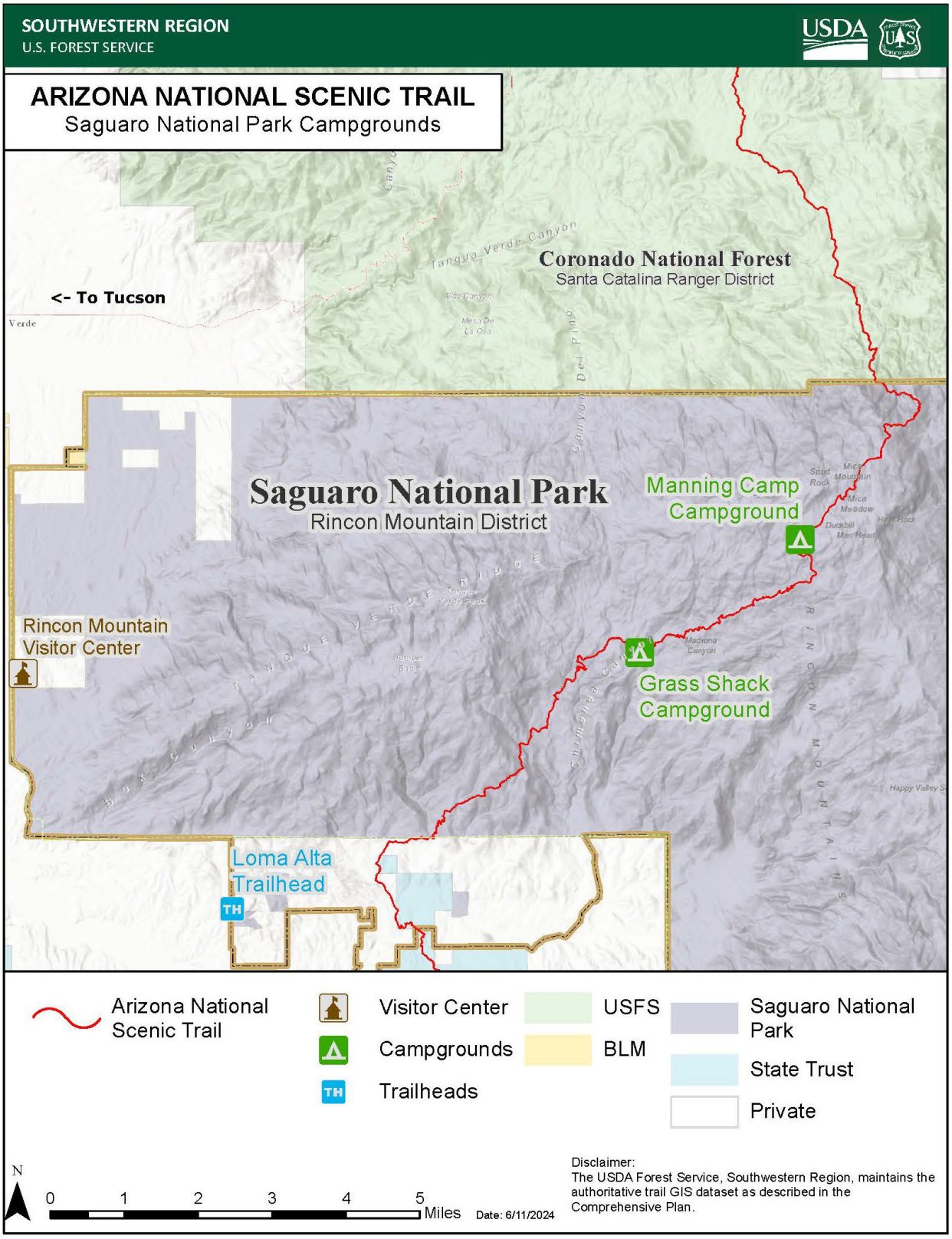

Figure 19. Map displaying the Arizona National Scenic Trail through Saguaro National Park

Visitor use differs between the two campgrounds. Manning Camp receives more visitors throughout the year. In 2020, there were 337 visitors to the Grass Shack Campground, while Manning Camp had 588 visitors. In addition, Grass Shack had a total of 182 permits issued with an average of 1.9 visitors per permit. Manning Camp had 266 permits issued with an average of 2.2 visitors per permit.

In 2021, the number of visitors increased for both campgrounds (possibly due to Covid-19). Grass Shack, in 2021, had 548 visitors while Manning Camp had 749 visitors. During that year, Grass Shack had 251 permits issued, with an average of 2.2 visitors per permit. Manning Camp had 400 permits issued, with an average of 1.9 visitors per permit.

Fall and spring are the busiest months for both campgrounds. In 2020, Grass Shack two busiest months were March, with 78 visitors, and November with 54 visitors. In the same year, Manning Camp's busiest months were March with 108 visitors, and May with 97 visitors.

In 2021, the number of visitors increased. At Grass Shack Campground the two busiest months in 2021 were March with 152 visitors and April with 125 visitors. For Manning Camp, the two busiest months were the same with March receiving 256 visitors and April with 147 visitors.

Table 7. 2020 Visitor Use Data for Grass Shack and Manning Camp Campgrounds

Month	Grass Shack Number of Visitors	Grass Shack Number of Permits	Manning Camp Number of Visitors	Manning Camp Number of permits
January	0	1	2	2
February	58	37	33	18
March	78	47	108	57
April	45	28	87	36
May	23	10	97	38
June	3	2	24	12
July	3	2	33	14
August	7	4	19	9
September	4	3	10	8
October	45	20	93	37
November	54	24	82	34
December	26	10	39	17

Table 8. 2021 Visitor Use Data for Grass Shack and Manning Camp Campgrounds

Month	Grass Shack Number of Visitors	Grass Shack Number of Permits	Manning Camp Number of Visitors	Manning Camp Number of permits
January	20	10	14	9
February	81	40	38	22
March	152	70	256	120
April	125	49	147	67
May	28	16	88	46
June	6	5	14	10
July	5	3	6	18
August	5	4	11	20
September	10	6	29	21
October	70	26	87	44
November	61	27	62	34
December	6	3	27	16

Grand Canyon National Park and Self-identified Arizona Trail Permits

The northern section of the AZNST travels through Grand Canyon National Park. The trail extends about 55 miles through the national park via Passage 37, Grand Canyon South Rim, Passage 38, Grand Canyon Inner Gorge, and Passage 39, Grand Canyon North Rim. Beginning in the spring of 2023, the Grand Canyon National Park reservation system moved to recreation.gov for trail permitting. This section summarizes information from self-identified Arizona Trail Permit users.

The AZNST travels into the Grand Canyon where there are three main canyon corridor campgrounds, and one campground outside the main canyon corridor (North Rim Campground). The three canyon corridor campgrounds include Havasupai Gardens Campground (not located along the AZNST), Bright Angel Campground, and Cottonwood Campground.

Havasupai Gardens Campground

- Located 4.8 miles below the South Rim along the Bright Angel Trail (not along the AZNST) and includes a ranger station, emergency phone, year-round potable water, day-use picnic tables, and toilets.
- It allows for 15 small group sites and one large group site. A total of 50 total people can be permitted in the campground.

Bright Angel Campground

- Located at the bottom of the Grand Canyon. It is seven miles from the South Rim (on the South Kaibab Trail) and 14 miles from the North Rim.
- Accommodates 31 small group sites and two large group sites. A total of 90 people can be permitted in the campground.

Cottonwood Campground

- Located 6.8 miles below the North Rim of the Grand Canyon on the North Kaibab Trail.
- Allows 11 small group sites and one large group site. A total of 40 people can be permitted in the campground.

The number of people hiking the AZNST through the national park varies by month. According to data from the National Park Service, October, April, and May are the three busiest months for hikers going through the Grand Canyon. From 2017-2021, in October, 280 people hiked the trail, in April, 243 people hiked the trail, and in May, 240 people hiked the trail (numbers are listed cumulatively by month).

Figure 21. Map displaying the Arizona National Scenic Trail through Grand Canyon National Park

Most north to south hikers stay at the North Rim Campground. From the campground, hikers travel south on the AZNST into the Inner Gorge of the park. The most common itinerary for north to south hikers, from 2017 to 2021, included hikers starting at North Rim Campground and

staying one-night at Bright Angel Campground and then hiking out of the park. Mather Campground, located on the South Rim, is where most south to north hikers stay before traveling into the Inner Gorge of the park. The most common itinerary for hikers staying at Mather Campground included a one-night stay at Cottonwood Campground followed by a one-night stay at North Rim Campground then hiking out of the park.

Throughout 2017 to 2021 there were 527 permits issued to AZNST hikers to travel through the Grand Canyon. In addition, 964 people were issued permits, which includes different hiking itineraries in the park. For all the hiking itineraries, the average permit size is 1.8 people.

The most popular hiking itinerary from 2017 to 2021 was from Cottonwood Campground to outside the park. The second most common hiking itinerary was from Bright Angel Campground to outside the park. These were the most common campgrounds that hikers sought a permit for in Grand Canyon. Of the 527 permits issued to Arizona Trail hikers from 2017 to 2021, 172 permits included the Cottonwood Campground to outside the park and 141 permits issues were for Bright Angel Campground to outside the park. Since Havasupai Gardens Campground is not on the AZNST, it is much less popular, with 9 trail permits issued from 2017 to 2021.

Most users who stayed at one of the three campgrounds only stayed one night. Of the 527 permits issued from 2017 to 2021, 409 of the permits had one night stay at one of the three campgrounds. For the same years, 77 of the 527 permits stayed two nights at a canyon corridor campground.

The top five states AZNST hikers originate from include Arizona (112), California (56), Colorado (41), Washington (33), and Oregon (20). The top five international countries are Canada (16), Switzerland (6), the United Kingdom (5), Germany (7), and Australia (3).

Table 9. 2017-2021 Visitor use data totals for Grand Canyon National Park

Month	Cottonwood Number of People	Cottonwood Number of Permits	Bright Angel Number of People	Bright Angel Number of Permits	All other trail use People	All other trail use Permits	Total People	Total Permits
January	2	1	0	0	0	0	2	1
February	0	0	0	0	1	1	1	1
March	10	9	0	0	19	11	29	20
April	111	50	17	14	115	60	243	124
May	119	53	26	15	95	51	240	119
June	10	7	4	4	12	8	26	19
July	0	0	0	0	0	0	0	0
August	0	0	0	0	4	1	4	1
September	13	11	35	25	53	27	101	63
October	67	39	145	77	68	40	280	156
November	4	2	6	5	21	13	31	20
December	0	0	2	1	5	2	7	3
Totals	336	172	235	141	193	214	964	527

Wilderness

The AZNST passes through seven designated wilderness areas and several other areas that are managed for their wilderness characteristics, including outstanding opportunities for solitude or primitive and unconfined recreation. If use along the AZNST is found to be approaching or exceeding monitoring thresholds for solitude or encounters that are set in wilderness plans or forest plans, there may be a need to address the site-specific visitor capacity of the trail through these areas.

The descriptions below for each of the seven wilderness areas show acreage, trail mileage, trail passages, jurisdiction, and any known group size limits or encounter rates or capacity limitations. The trail passage maps in appendix A show the trail location through each of the wilderness areas.

Miller Peak Wilderness

- 20,238 acres in size
- There are 11.6 miles of trail
- Trail passage 1 - Huachuca Mountains
- Jurisdiction is the Coronado National Forest
- Group size limits or encounter rates: none
- Capacity limitations: campsites: 10 parties per night with two people per party equals 20 people per night (local manager estimate, not in Forest Plan)
- Considering a permit system to reduce and contain visitor impacts (Miller Peak Wilderness Management Approach 4, 2018 Coronado Forest Plan, page 113)

Saguaro Wilderness

- 70,905 acres in size
- There are 15.3 miles of trail
- Trail passage 9 – Rincon Mountains
- Jurisdiction is the National Park Service, Saguaro National Park
- Group size limits or encounter rates: group size limit is 18. No more than seven groups encountered per day (six hours) along designated trails, with 15 percent of observations allowed to exceed the encounter levels without violating the standard.
- Capacity limitations: backcountry campsite permits required as described in Saguaro National Park section above.

Rincon Mountain Wilderness

- 36,928 acres in size
- There are 2.2 miles of trail
- Trail Passage 9 – Rincon Mountains
- Jurisdiction is the Forest Service, Coronado National Forest
- Group size limits or encounter rates: none
- Capacity limitations: none

- Considerations:
    - Coordinating management strategies with the Saguaro Wilderness managed by the National Park Service (Rincon Mountain Wilderness Management Approach 1, 2018 Coronado Forest Plan, p. 117).
    - Encouraging visitors to limit off-trail group size (including cross-country travel and at dispersed camping areas) to no more than six people and six riding or pack stock animals per group (Rincon Mountain Wilderness Management Approach 2, 2018 Coronado Forest Plan, p. 117).

Pusch Ridge Wilderness

56,919 acres in size

- There are 11.6 miles of trail
- Trail Passage 11 – Santa Catalina Mountains
- Forest Service, Coronado National Forest
- Group size limits or encounter rates: overnight group size limit in wilderness is six. Day use is 15 people per group.
- Capacity limitations: There are approximately six campsites along the trail in the southern portion and 12 along the trail through the Wilderness of Rock. Total per night: 18 campsites with six people each equals 108 people per night (local manager estimate not in Forest Plan).
- Considerations:
    - Trailhead parking areas should be designed to passively limit visitor use at levels that maintain wilderness character (Pusch Ridge Wilderness Guideline 2, 2018 Coronado Forest Plan, p 116).
    - Considering a permit system to facilitate pre-trip education, limit visitor use to a level compatible with wilderness values, and inform managers of the numbers, type, and spatial distribution of visitors in the Pusch Ridge Wilderness (Pusch Ridge Wilderness Management Approach 1, 2018 Coronado Forest Plan, p. 116).

Superstition Wilderness

- 160,200 acres in size
- There are 18.2 miles of trail
- Trail passage 19 – Superstition Wilderness
- Jurisdiction: Forest Service, Tonto National Forest
- Group size limits or encounter rates: visitor group size is limited to no more than 15 persons by Forest Special Order 12-13. There is no limitation on numbers of recreational livestock.
    - Groups which exceed the 15-person group size limit will be divided into groups of 15 or less and be separated by a one-hour time interval. If these separated groups camp overnight, each camp will be out of sight of the other.
- Capacity limitations: none

Four Peaks Wilderness

- 60,740 acres in size
- There are 10.4 miles of trail
- Trail passage 20 – Four Peaks
- Jurisdiction: Forest Service, Tonto National Forest
- Group size limits or encounter rates: visitor group size is limited to no more than 15 persons by Forest Special Order 12-13. There is no limitation on numbers of recreational livestock.
    - Groups which exceed the 15-person group size limit will be divided into groups of 15 or less and be separated by a one-hour time interval. If these separated groups camp overnight, each camp will be out of sight of the other.
- Capacity limitations: none

Mazatzal Wilderness

- 252,500 acres in size
- There are 47.4 miles of trail
- Jurisdiction: Forest Service, Tonto National Forest
- 22 – Saddle Mountain
- 23 – Mazatzal Divide
- 24 – Red Hills
- 25 – Whiterock Mesa
- Group size limits or encounter rates: visitor group size is limited to no more than 15 persons by Forest Special Order 12-13. There is no limitation on numbers of recreational livestock.
    - Groups which exceed the 15-person group size limit will be divided into groups of 15 or less and be separated by a one-hour time interval. If these separated groups camp overnight, each camp will be out of sight of the other.
- Capacity limitations: none

Trail Passages

Passages with identified camping or permit limitations

There are existing backcountry campsite permit requirements (described above) for Saguaro National Park, Rincon Mountain (passage 9) and Grand Canyon National Park, Grand Canyon Inner Gorge (passage 38). Several other areas were identified where camping limitations may become a concern as use levels increase such as the number of available campsites in areas where terrain is limiting in Huachuca Mountains (passage 1) and Santa Catalina Mountains (passage 11).

Passages with identified conflicts affecting the Arizona National Scenic Trail experience

Some passages of the AZNST are co-located on open motorized roads. This can pose a safety concern with hikers traveling along roads with truck or high-volume traffic. These sections are

not meeting the desired National Scenic Trail experience and may result in trail users avoiding sections of the trail. As opportunities arise to move the AZNST off motorized routes to enhance the visitor experience, there may be a need to review and adjust the visitor capacity within these passages. Several other uses adjacent to the trail or on the trail were identified as sources of potential conflict.

Concern and potential conflict with road segments or adjacent motorized off-highway vehicle (OHV) use were noted at Reavis Canyon (passage 18) with off-highway vehicles at Roger's Trough Trailhead (issues with human waste were also noted for this location). Other conflicts noted are with target shooting activities near Las Colinas (passage 6), and Redington Pass (passage 10), downhill mountain bike use on Flagstaff Urban Route (passage 33), and limited ability to accommodate equestrian use due to paved section of trail in Grand Canyon: South Rim (trail passage 37).

Passages with high use, potential future concern, or opportunities to improve facilities

Several other potential future limiting factors for trail visitor capacity were identified that will need monitoring. There is a potential for competing land uses on adjacent state lands in Black Hills (passage 14) and Tortilla Mountains (passage 15). Additionally, there are existing areas of high visitor use that may need to be addressed in Alamo Canyon (passage 17), Superstition Wilderness (passage 19), and Saddle Mountain (passage 22).

Identifying Visitor Capacity

Thru Hiker Capacity

Thru-hiking was determined to be the trail activity with the most limitations (seasonality) and the greatest dependence on the trail resources (availability of campsites and water, resupply opportunities, access and closures, trail conditions, etc.), and therefore the trail activity with the most constraints.

Visitor capacity for thru-hiking was determined using the Interagency Visitor Use Management Capacity Guidebook (IVUMC 2019) and the Sustainable Affordance/Level of Service Model (mentioned below) that is based on assumptions about trail use, visitor capacity criteria rated by local managers, and a review of constraints or limiting factors along the trail. This model provides a quantitative estimate of the range of thru-hiking opportunities that the AZNST provides under current known physical, ecological, and social conditions.

Thru hiker capacity is based on Sustainable Affordance (Valenzuela 2020) /Level of Service Model (USDOT Federal Highway Administration 2006) – (Methodology and calculation details are included in the project record).

General assumptions for calculations, applied to all passages:

- Average group size of two based on visitor registers and Arizona Trail Association data.
- Average of four groups entering the trail per hour (one group every 15 minutes), based on the Shared Use Path Level of Service Calculator for a rating of excellent. Six levels of service are defined by this calculator ranging from excellent to failing (USDOT 2006). The excellent rating was selected for this analysis because we want to manage the trail for high quality experiences.

- Group entry hours per day of six, based on general observation of trail use patterns.
- The main seasons available for thru travel were estimated to be a total of 150 days (Feb. 15 – May 15 [90 days] and Sept. 15 - Nov 15 [60 days]).

To consider the management goal of maintaining opportunities for solitude within designated wilderness areas, a reduction factor of 50 percent was applied to passages within wilderness areas. By reducing the level of service by 50 percent the result is approximately 15 encounters per day, which is consistent with existing group size limitations in some wilderness areas that the trail passes through. This reduction factor increases the probability that the opportunity for solitude exists in the wilderness areas.

Numeric ratings were assigned to each of the six capacity decision criteria listed in the Worksheet section above (High = 1, Med = 2, Low = 3). The criteria were rated by passage, based on professional judgement of local trail managers. An adjustment factor was calculated based on the total rating for all criteria.

The unconstrained (does not consider the identified limiting factors) sustainable recreation affordance for one day within a passage based on "excellent" level of service (LOS) calculation and capacity criteria ratings is calculated using:

- Groups per hour
- Hiking Entry Hours
- Average party size
- Capacity criteria adjustment factor

Each passage is then reviewed for limiting factors that would be lower than the base calculation that would constrain the flow of hikers through that point. Examples of some of the potential limiting factors for the AZNST are limited backcountry campsite permits, wilderness encounter rates and group size limitations, as discussed above. Each passage has a number of people that can “flow” through the trail section identified per-day and per-use season. The total thru-hiker capacity for the entire trail can be expressed as a range of numbers. People at one time per passage can also be displayed.

Figure 20 gives a visual example of a long-distance route made up of sequential trail segments, shown here as passages, that are unique to the AZNST, and each contributes to the eventual traveler experience and outcome.

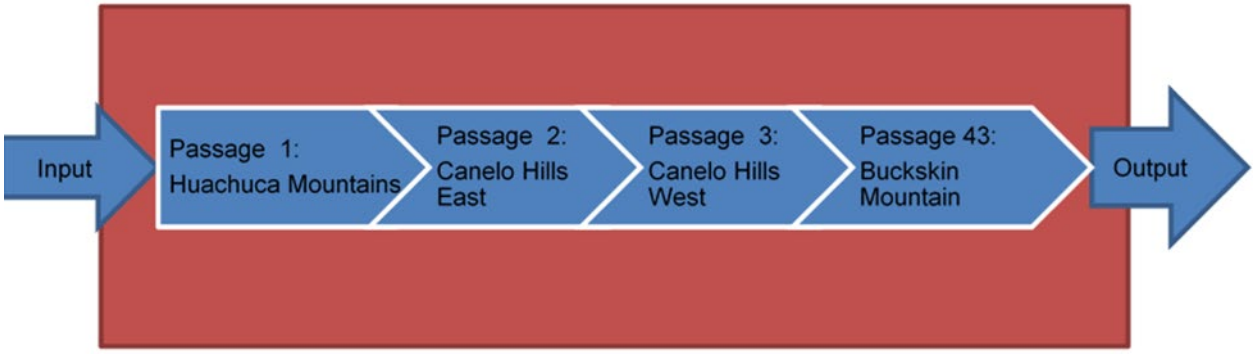

Figure 20. Trail Passages example of a long-distance route

Figure 21 provides a representation of the limiting factors to be considered for each passage when calculating capacity.

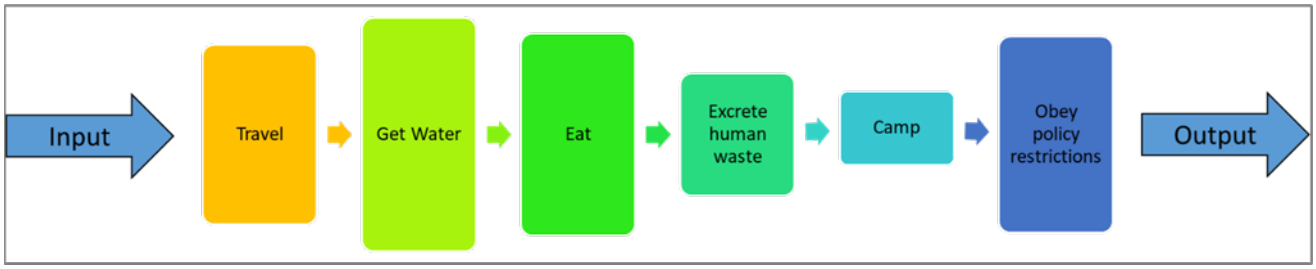

Figure 21. Capacity decisions based on limiting factors by trail passage

Travelers have certain necessary activities in each passage, and some opportunities may be more limiting than others. The focus of the sustainable affordance methodology is to identify the most limiting factors, constraints, or bottlenecks that may impact the flow of travelers along the trail. One of the processes is a constraint on the system when flow rate exceeds the movement of visitors through the passage. In this example, camp sites would be the constraint.

The two most constraining passages based on limited backcountry campsites and permit requirements includes Passages 38 – Grand Canyon Inner Gorge, and Passage 9 – Rincon Mountains. The resulting visitor capacity range for thru-hiking for the AZNST, based on camping constraints in Grand Canyon and Saguaro National Parks, is 1,800 to 2,700 people per high-use season (Feb. 15 – May 15 and Sept. 15 - Nov 15). A numeric range is provided because there are several variables, such as the ability to make advanced campsite reservations in the national parks, the availability of walk-up camping opportunities that influence the ability of these areas to accommodate overnight use, and variable party sizes.

During the spring high-use season (Feb. 15 – May 15), trail traffic flows mainly south to north so Passage 9 constraints of camping would be encountered first by thru-use. We recognize the numbers decline over time due to attrition rates – less than 70% of thru-hikers who start the AZNST actually finish as a continuous effort. In the fall high use season (Sept. 15 - Nov 15) the flow is mainly north to south, so the camping constraints in passage 38 would be first encountered, and then the numbers of thru use would decline as the season progresses and trail use moves south due to the weather. Most people start their trips over an 8-week period and end their trips at different times, so the levels of use form a bell-shaped curve, as shown in figure 22, below.

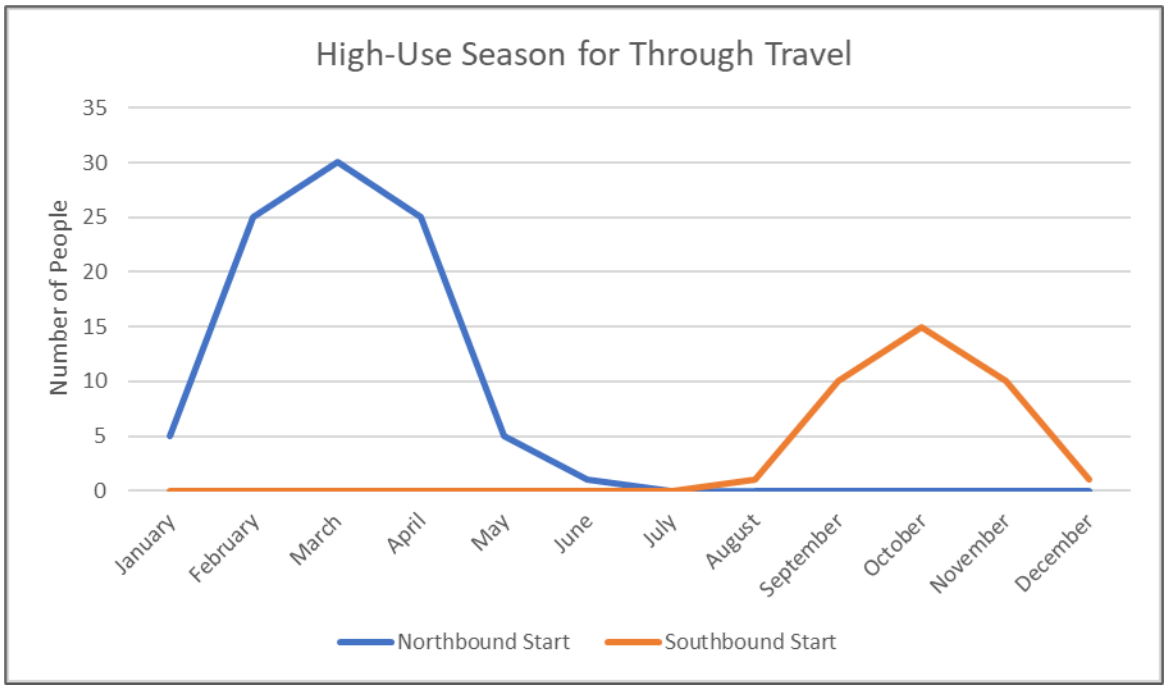

Figure 22. Bell-shaped curve of high-use season for thru travel

The estimates are presented as a range of visitor use that in most cases is much higher than current amounts of use. Thru-hiking use constitutes only a small fraction of overall use of the AZNST relative to day-use and short multi-day trips. It is estimated that more than 400 people attempted to thru-hike the entire trail in spring of 2019, however the Arizona Trail Association trail finisher report indicated 180 people submitted thru travel completion surveys in 2019. There is currently no permit system or other requirement for trail users to register. Use is likely to continue to increase as the attractiveness of this relatively little-used, long-distance trail becomes increasingly better known.

General amounts and types of use the trail can accommodate

The trail provides opportunities for shorter trips on foot, ranging from day hiking to multi-day backpacking trips on sections of the AZNST. Along with hiking, horseback riding and mountain biking are popular uses in certain sections of the AZNST. A trail that provides opportunities for long-distance hiking, horseback riding, and bicycling can accommodate other forms of non-motorized trail use such as cross-country skiing, snowshoeing, and trail running.

Day hiking, section hiking, horseback riding, bicycling, and other non-motorized trail uses have fewer constraints on timing and season of use than for thru-hiking and involve one or several passages of the trail rather than the entire trail. Use levels vary widely across the AZNST depending on adjacent communities, access, terrain, and many other factors.

Visitor capacity for all trail uses is expressed as the types and levels of use that can generally be accommodated by the AZNST. Trail zones were developed to describe the desired conditions (focusing on the recreation settings and social experiences) for the trail as it crosses a variety of landscapes and jurisdictions.

Desired Condition Zones

The desired condition zone descriptions identify the appropriate types and levels of use that can be accommodated by the AZNST, without adversely affecting the nature and purposes of the trail. If necessary, specific visitor capacities for a site, trail segment, or area would be identified and implemented by the local trail managing unit.

Desired condition zones were developed and are shown in table 10. They describe the desired conditions (trail settings and social experiences) for the trail as it crosses landscapes and jurisdictions. The zone descriptions were developed based on input from local trail managers in the data collection worksheets, existing management direction from land management plans, and trail descriptions on the Arizona Trail Association website. The zone descriptions estimate the appropriate types and levels of use that can be accommodated by the AZNST, without adversely affecting the nature and purposes of the trail.

Each trail passage was initially assigned to a zone that best represents the visitor experience and existing management direction for most of the passage (table 11). A range for the number of groups encountered on the trail per day by zone was identified based on Recreation Opportunity Spectrum setting characteristics table (USDA Forest Service 2022), visitor register information, and professional judgement of local and regional trail managers (Visitor Capacity worksheets 2018).

The trail zones will guide monitoring and subsequent management actions that will either maintain the existing visitor experience as described for each zone, or where appropriate, move the trail passage into a less-developed zone. Monitoring indicators and thresholds would be established at local managing units to ensure trail use, or management actions generally do not result in a trail classification from a less developed zone into a more developed one.

If a numerical visitor capacity calculation is desired, a visitor capacity estimate could be expressed based on the following formula:

> Average group size from trail registers (or other data sources) OR maximum group size from management plans multiplied by Maximum Typical Encounters for the Zone multiplied by Days to Complete equals People Per Day Maximum Theoretical Capacity.

At the comprehensive planning level, it is preferable to express capacity by zone as the general types and amounts of use that the trail can accommodate. Site specific visitor capacity calculations by passage at the local management unit will be most useful.

Desired Condition Zones within Trail Passages

Recognizing the trail passes through a variety of natural and social settings, and that particular indicator(s) and threshold(s) may not apply to the entire passage (see appendix D), local trail managers may also want to consider monitoring based on unique management zones within passages. Table 10 provides an example of desired conditions for unique management zones within passages.

Table 10. Desired conditions zone descriptions

Zone	Description	Typical recreation opportunity spectrum class	Typical number of groups encountered per day
Gateway Community or Trailhead Zone	High use, high proportion of day use along with overnight visitors. Close to motorized roads and access points. More developed than other zones. Poor opportunities for solitude throughout the season.	Urban Rural	Urban: 75-125 groups encountered per day Rural: 50-75 groups encountered per day
Backcountry Zone	Use levels low to high. Mostly overnight use with some day use. Roads only occasionally nearby. Moderately developed. Moderate opportunity for solitude throughout the season.	Roaded Natural Semi-Primitive Motorized	Roaded Natural: 30-50 groups encountered per day Semi-Primitive Motorized 15-30 groups encountered per day
Primitive Zone	Use level very low to moderate. Within designated wilderness and areas that are managed to provide opportunities for solitude. Primarily overnight use, often by long distance hikers. Remote, minimal development. Good opportunity for solitude throughout the season.	Semi-Primitive Non-Motorized and Primitive	6-15 groups encountered per day

Table 11 provides a summary of information for each passage in relation to visitor capacity. Passage numbers and names that are followed by an asterisk have been identified as passages that have existing or potential concerns regarding visitor capacity, trail experience, or visitor conflicts that may need to be addressed.

Table 11. Trail passages summary information for visitor capacity

Passage Number-Name	Length (Miles)	Jurisdiction	Desired Condition Zone	Max group or party size (where applicable)	Identified capacity or threshold (where applicable)	Overall need to address capacity
1 - Huachuca Mountains*	20.8	Coronado National Forest	Primitive (Miller Peak Wilderness)	Not applicable	Campsites: 10 parties per night with 2 people per party equals 20 people per night (local manager estimate not in Forest Plan)	Low
2 - Canelo Hills East	14.2	Coronado National Forest	Backcountry	Not applicable	Not applicable	Low
3 - Canelo Hills West	16.2	Coronado National Forest	Backcountry	Not applicable	Not applicable	Low
4 – Casa Blanca Canyons	20.8	Coronado National Forest	Backcountry	Not applicable	Not applicable	Low
5 - Santa Rita Mountains	13.8	Coronado National Forest	Backcountry	Not applicable	Not applicable	Low
6 - Las Colinas	13.1	Coronado National Forest	Backcountry	Not applicable	Not applicable	Low
7 - Las Cienegas	12.7	Pima County/State Land	Backcountry	Not applicable	Camping limited on state lands	Low
8 - Rincon Valley	13.9	Pima County/State Land	Backcountry	Not applicable	Camping limited on state lands	Low
9 - Rincon Mountains*	24.6	Saguaro National Park	Primitive (Saguaro and Rincon Mountain Wilderness)	Maximum group size in wilderness is 18. No more than seven groups encountered per day (6 hours) along designated trails, with 15 percent of observations allowed to exceed the encounter levels without violating the standard	The maximum overnight capacity for camping along the trail is 54 people per night. Camping permits required: Campsites: 9 campsites with 6 people per site equals 54 people per night	Low

Passage Number-Name	Length (Miles)	Jurisdiction	Desired Condition Zone	Max group or party size (where applicable)	Identified capacity or threshold (where applicable)	Overall need to address capacity
10 - Redington Pass*	13.2	Coronado National Forest	Backcountry	Not applicable	Not applicable	Low
11 - Santa Catalina Mountains*	18.5	Coronado National Forest	Primitive (Pusch Ridge Wilderness)	Overnight group size limit in wilderness is 6. Day use is 15 people per group	There are approximately 6 good campsites in southern portion and about 12 along the Wilderness of Rock Trail. Total per night: 18 campsites with 6 people per site equals 108 people per night (local manager estimate not in Forest Plan)	Low
12 - Oracle Ridge	15.5	Coronado National Forest	Backcountry	Not applicable	Terrain on Oracle Ridge limits camping opportunities	Low
13 - Oracle	8.6	State Park	Gateway - rural (Oracle)	Not applicable	Oracle State Park, day use only	Low
14 - Black Hills*	27.8	State	Backcountry	Not applicable	State Trust Land permit required for camping	Moderate
15 - Tortilla Mountains*	28.1	State and BLM	Backcountry	Not applicable	State Trust Land permit required, no restrictions for camping on BLM	Moderate
16 - Gila River Canyons	26	State and BLM	Backcountry	Not applicable	State Trust Land permit required, no restrictions for camping on BLM	Moderate
17 - Alamo Canyon*	11.7	Tonto National Forest	Gateway - rural (Superior)	Not applicable	Not applicable	Moderate
18 - Reavis Canyon*	18.4	Tonto National Forest	Backcountry	Not applicable	Not applicable	Low
19 - Superstition Wilderness*	29.4	Tonto National Forest	Primitive (Superstition Wilderness)	15 people per group in wilderness	Not applicable	Moderate
20 - Four Peaks	19	Tonto National Forest	Primitive (Four Peaks Wilderness)	15 people per group in wilderness	Not applicable	Low
21 - Pine Mountain	19.3	Tonto National Forest	Backcountry	15 people per group in wilderness	Not applicable	Low
22 - Saddle Mountain*	16.6	Tonto National Forest	Primitive (Mazatzal Wilderness)	15 people per group in wilderness	Not applicable	Moderate

Passage Number-Name	Length (Miles)	Jurisdiction	Desired Condition Zone	Max group or party size (where applicable)	Identified capacity or threshold (where applicable)	Overall need to address capacity
23 - Mazatzal Divide	24.3	Tonto National Forest	Primitive (Mazatzal Wilderness)	15 people per group in wilderness	Not applicable	Low
24 - Red Hills	10.9	Tonto National Forest	Primitive (Mazatzal Wilderness)	15 people per group in wilderness	Not applicable	Low
25 - Whiterock Mesa	22.7	Tonto National Forest	Primitive (Mazatzal Wilderness)	15 people per group in wilderness	Not applicable	Moderate
26 - Highline	20.2	Tonto National Forest	Gateway- rural (Pine)	Not applicable	Not applicable	Low
27 - Blue Ridge	15.4	Coconino National Forest	Backcountry	Not applicable	Not applicable	Low
28 - Happy Jack	29.4	Coconino National Forest	Backcountry	Not applicable	Not applicable	Low
29 - Mormon Lake	14.8	Coconino National Forest	Backcountry	Not applicable	Not applicable	Low
30 - Anderson Mesa	17.8	Coconino National Forest	Backcountry	Not applicable	Not applicable	Low
31`- Walnut Canyon	17.9	Coconino National Forest	Backcountry	Not applicable	No limits on Anderson Mesa for dispersed camping; No camping within one mile of developed campgrounds; No camping in city limits. Camping and campfire restricted zone surrounding Flagstaff.	Low
32 - Elden Mountain	13.7	Coconino National Forest	Backcountry	Not applicable	No limits within the Forest, no camping or campfires on state land, Picture Canyon Natural Area, camping and campfire restricted zone surrounding Flagstaff.	Moderate
33 – Flagstaff Urban Route*	14.8	Coconino National Forest and City of Flagstaff	Gateway - urban (Flagstaff)	Not applicable	No camping within City limits of Flagstaff, Camping and campfire restricted zone surrounding Flagstaff.	High

Passage Number-Name	Length (Miles)	Jurisdiction	Desired Condition Zone	Max group or party size (where applicable)	Identified capacity or threshold (where applicable)	Overall need to address capacity
34 - San Francisco Peaks	35.3	Coconino National Forest	Backcountry	Not applicable	Camping and campfire restricted zone surrounding Flagstaff	Moderate
35 - Babbit Ranch	24.5	State	Backcountry	Not applicable	Arizona State Lands permit required to camp outside the 15-foot trail corridor	Low
36 - Coconino Rim	18	Coconino National Forest	Backcountry	Not applicable	Not applicable	Low
37 - Grand Canyon: South Rim*	22.5	Coconino National Forest and Grand Canyon National Park	Gateway - rural (Tusayan)	Not applicable	Camping only in designated campground in Grand Canyon National Park; Mather Campground has hike and bike campsites	Low
38 - Grand Canyon: Inner Gorge*	21.8	Grand Canyon National Park	Gateway - rural (Grand Canyon Village)	Not applicable	Permit required for camping: Bright Angel Campground: 31 small groups plus two large groups for up to 90 total people. Cottonwood Campground: 11 small groups plus one large group for up to 40 total people. Havasupai Gardens Campground: 15 small groups plus one large group for up to 50 total people. The maximum overnight capacity for camping along the trail within the Inner Gorge is 180 people per night.	Moderate

Passage Number-Name	Length (Miles)	Jurisdiction	Desired Condition Zone	Max group or party size (where applicable)	Identified capacity or threshold (where applicable)	Overall need to address capacity
39 - Grand Canyon: North Rim	12	Grand Canyon National Park	Backcountry	Not applicable	North Rim Campground (90 sites plus some available for walk in); equestrian camping north of North Rim parking lot, dispersed camping allowed between North Rim and Park boundary	Low
40 - Kaibab Plateau: South	20.7	Kaibab National Forest	Backcountry	Not applicable	Not applicable	Low
41 - Kaibab Plateau: Central	16.6	Kaibab National Forest	Backcountry	Not applicable	Not applicable	Low
42 - Kaibab Plateau: North	16.4	Kaibab National Forest	Backcountry	Not applicable	Not applicable	Low
43 - Buckskin Mountain	10.6	BLM	Backcountry	Not applicable	Not applicable	Low

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Appendix D – Adaptive Management and Monitoring

Adaptive Management and Monitoring of Visitor Use and Trail Conditions

Introduction

The nature and purposes of the AZNST define the desired key characteristics of the trail setting and experience and establish the context for appropriate activities and uses for the trail and its corridor. The nature and purposes statements (chapter 3) recognize the public's connection with the unique and diverse treasures of Arizona's outdoors for purposes of recreation, spiritual renewal, improved health, and high-quality time spent with families and friends. There is a constant management challenge to strike a balance between these societal benefits and resource protection and conservation within the framework of applicable law and policy. Through specific visitor use management practices that are related to the desired conditions for the AZNST, the comprehensive plan provides general, but consistent, direction that maintains flexibility for implementation by different agencies in varied situations.

Nature

The AZNST is a primitive, non-motorized, long-distance, continuous route through rugged and spectacular landscapes. The trail corridor is defined by open space and magnificent scenery, encompassing Arizona's dramatic topography, biodiversity, and rich cultural history. The trail experience is a blend of opportunities for quality recreation, self-reliance, stewardship, community building, discovery, self-reflection, and intimate connections with nature surrounded by breathtaking beauty and natural quiet.

Purposes

- Sustaining a premier, continuous, nonmotorized, primitive pathway across the State of Arizona from Mexico to Utah.
- Conserving and showcasing the diverse scenic, natural, historic, and cultural resources along the trail corridor in a setting that supports quiet recreation, where the sights and sounds of nature are prevalent.
- Promoting multiple non-motorized, human or animal-powered trail uses, primarily hiking, mountain biking, horseback riding, and cross-country skiing along a single shared pathway.
- Connecting deserts, mountains, forests, wilderness, canyons, communities, and people.
- Providing educational experiences for Arizona's residents and visitors that includes the cultural history of the Native Americans whose ancestral lands are traversed by the trail.
- Fostering land stewardship in the development and use of the trail to cultivate appreciation for and protection of the associated natural and cultural resources as a legacy for future generations.
- Valuing wildness, remoteness and solitude while providing opportunities to experience short excursions as well as extended adventures.

Monitoring

An adaptive management approach helps managers ensure that desired conditions and objectives for the trail are achieved, and the intent of this comprehensive plan continues to be realized as future conditions change. This adaptive management and monitoring plan defines the indicators, thresholds, and potential adaptive management actions that will govern long-term management and potential adjustments needed to ensure desired conditions are being met. An adaptive management strategy allows for the monitoring of physical, social, and managerial resource objectives.

The AZNST crosses multiple jurisdictions and passes through a variety of ecosystems. Monitoring and adaptive management approaches will range from site-specific issues to regional or trail-wide conditions and trends. In most cases, selection of appropriate indicators and thresholds, monitoring, and implementation of adaptive management actions will be done at the local level by local land managers. Overall monitoring trends will be reported to the trail administrator.

Monitoring is accomplished by selecting indicators that are used to track trends in resource and experiential conditions. Established thresholds clearly define when conditions are becoming unacceptable for the selected indicators, thus alerting managers that a change in management action(s) is required (VUM Monitoring Guidebook). The national scenic trail adaptive management toolbox focuses on visitor experience, recreation opportunities and facilities, and scenic, historic, natural, and cultural resources to be preserved, and includes examples of several potential management actions that could be taken, as determined appropriate by local managers. For example, the following paragraph describes potential management actions that could be taken related to indicators and thresholds for visitor capacity.

Identifying the limiting factors related to visitor capacity within trail passages will guide management decisions to either manage visitor use within the constraint or take actions to remove the constraint. For example, if the number of campsites is the limiting factor, a management action to increase capacity would be adding additional campsites, expanding the size of existing campsites to fit more people per site, or providing visitors with information about other overnight lodging options in the area. Managing within the constraint could be accomplished by requiring campsite permits to ensure that the campsite capacity is not exceeded. This provides an adaptive approach to maintain the sustainable recreation opportunities along the trail over time.

Adaptive Management Process

In applying adaptive management approaches, it is important to identify what is driving the issue or needed change in management. Table 12 shows the relationship between changes in the trail experience or desired conditions related to visitor use or other external factors, and the impacts to scenic, historic, natural, and cultural resources that may be a result of visitor use levels, or other activities and trends within the national trail planning corridor. Understanding these relationships will help guide selection of appropriate adaptive management actions.

Table 12. Focus areas for monitoring

Driver for change	Changes to trail experience or desired conditions	Impacts to Scenic, Historic, Natural and Cultural resources
Changes to visitor use	Changes to visitor experiences that result from visitor use (such as crowding, goal conflict, conflict between different types of uses) - Conflict between hikers, mountain bikers, and equestrians - Crowding at key destinations	Impacts to scenic, historic, natural, and cultural resources that result from visitor use (such as human waste causing water quality concerns, damage to cultural sites, user created informal trails or campsites, habituation of wildlife)
Changes to other factors	Changes to visitor experiences or desired trail conditions that result from factors other than visitor use (such as residential or commercial development adjacent to the trail, changes to scenic viewpoints, motorized use adjacent to or across the trail, availability of campsites)	Changes in the overall condition of scenic, historic, natural, and cultural resources within the national trail planning corridor (such as air quality, invasive species, trail conditions, vegetation, wildlife)

Figure 23 is a flowchart depicting the adaptive management process. The process is based on three key questions to consider during the monitoring process. The response to each question will assist managers to determine if steps need to be taken to mitigate an issue, or to continue monitoring.

- Are desired conditions being met?
- Are observed issues or impacts related to visitor use?
- Has the estimated constraint to visitor capacity been reached?

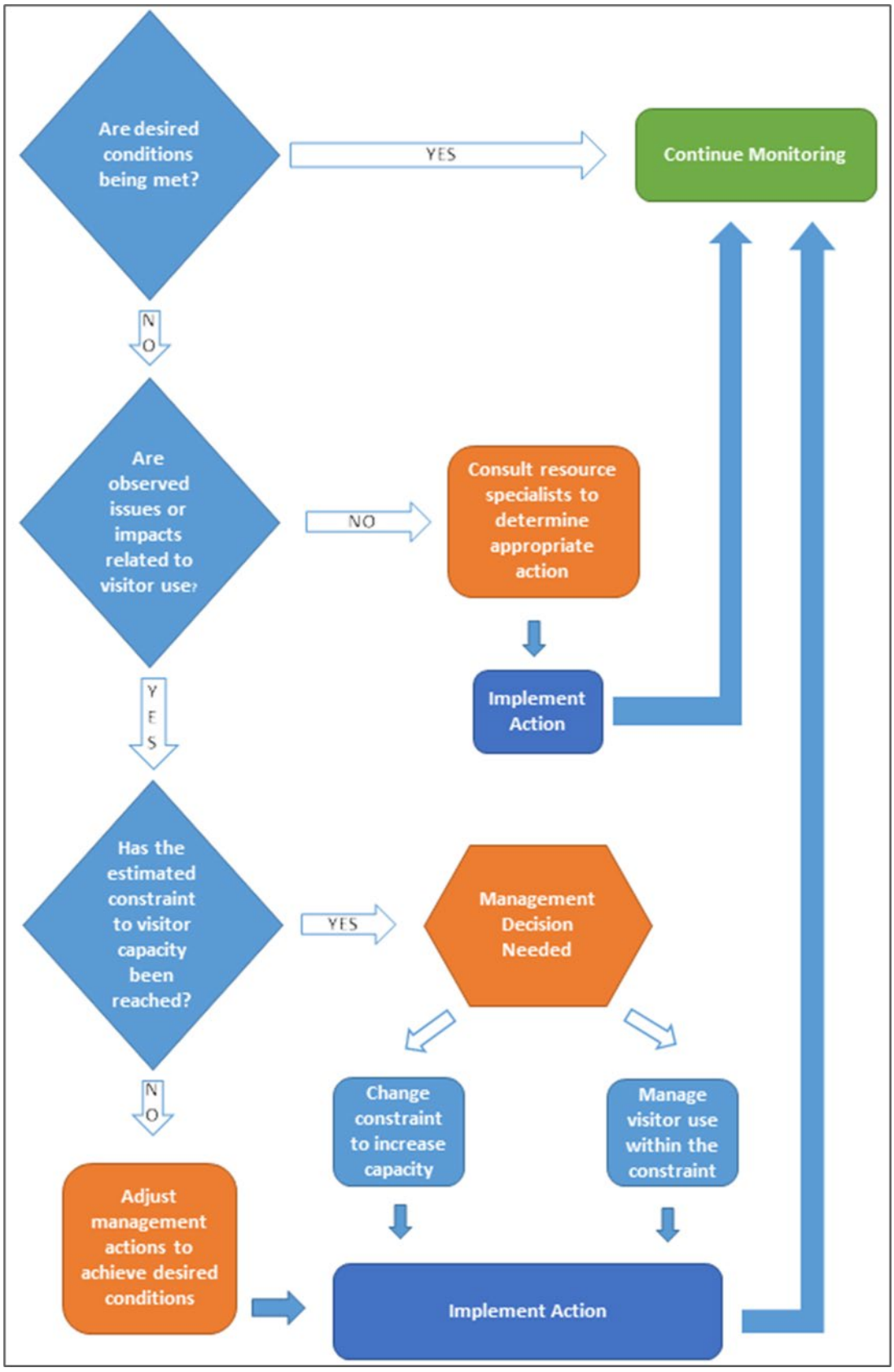

Figure 23 Adaptive management process

Identified Constraints

Limiting factors or constraints that may limit visitor use have been identified for the passages listed in this section. Monitoring of the identified factors or constraints will inform management decisions regarding sustainable use of the passage.

Table 13. Passages with identified limitations to camping or permits

Trail passage	Limiting factor
Passage 1: Huachuca Mountains	Campsite limitation
Passage 9: Rincon Mountains	Saguaro National Park camping limitation, backcountry camping permits required
Passage 11: Santa Catalina Mountains	Wilderness camping limitation, high use and influence from Sabino Canyon
Passage 38: Grand Canyon Inner Gorge	Grand Canyon National Park limited number of backcountry camping permits

Table 14. Passages with identified conflicts affecting the trail experience

Trail passage	Limiting factor
Passage 6: Las Colinas	Shooting activities
Passage 10: Redington Pass	Shooting activities
Passage 18: Reavis Canyon	Off highway vehicles, and human waste conflict at Rogers Trough Trailhead
Passage 33: Flagstaff	Conflict with downhill mountain bike use
Passage 37: Grand Canyon South Rim	Limited ability to accommodate equestrian use (issues with trail on pavement). Limited equestrian camping at Mather Campground.

Table 15. Passages with high use level, potential future concern, or opportunities to improve facilities

Trail passage	Limiting factor
Passage 14: Black Hills	Adjacent competing land use (state lands)
Passage 15: Tortilla Mountains	Adjacent competing land use (mining, state lands)
Passage 17: Alamo Canyon	High day use and Picketpost trailhead. Equestrian use – lots of horse manure and impacts on the tread.
Passage 19: Superstition Wilderness	High use, access to water – potential future wilderness permit system
Passage 22: Saddle Mountain	High use and proximity to populated areas

Experience Zones within Trail Passages

Recognizing the trail passes through a variety of natural and social settings, and that particular indicators and thresholds may not be applicable to the entire passage, local trail managers may also want to consider monitoring based on unique management zones. Suggested trail zones for monitoring opportunities include:

Gateway Community or Trailhead Zone: High use, high proportion of day use along with overnight visitors. Close to motorized roads and access points. More developed than other zones. Poor opportunities for solitude throughout the season.

Backcountry Zone: Use levels low to high. Mostly overnight use with some day use. Roads only occasionally nearby. Moderately developed. Moderate opportunity for solitude throughout the season.

Primitive Zone: Use level very low to moderate. Within designated wilderness and areas that are managed to provide opportunities for solitude. Primarily overnight use, often by long distance hikers. Remote, minimal development. Good opportunity for solitude throughout the season.

Monitoring Process

The sections below (Visitor Experience, Recreation Opportunities and Facilities and Scenic, Historic, Natural, And Cultural Resources) include potential indicators and thresholds to guide monitoring efforts. Some indicators are relevant trail-wide, while others will apply only to certain passages, or to certain desired condition zones. The thresholds will need to be modified for site specific conditions. Local trail managers will select the relevant indicators and associated thresholds, or develop additional indicators to monitor, as needed.

National Scenic Trail Adaptive Management Toolbox

Visitor Experience, Recreation Opportunities and Facilities

Visitor use levels

Table 16. Visitor use levels, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes	Provide premier trail visitor experiences to meet increasing public outdoor recreation needs. Balance the quality and quantity of recreational opportunities to preserve the AZNST resources and experience.	Visitor use levels and types of use for baseline data	Trail wide capacity for through travel ranges from 1,800 to 2,700 people per high-use season. Site-specific trail capacity by passage to be determined by local managing unit.

Adaptive Management Toolbox - Actions

- Continue or increase frequency of monitoring of trail counters, trail use data, and trail completions reports to determine if use is approaching identified capacity.
- If monitoring demonstrates issues related to resource damage, congestion, safety, or if visitor experiences are on a downward trend over several years, implement management actions to manage use within the defined trail capacity. Capacity could also be adjusted upwards if trends demonstrate that all objectives are improved and sustainable into the future.

Monitoring Responsibility

Forest Service

- Collect trail use data
- Monitor trail use and overall visitor use trends

National Park Service

- Identify and monitor backcountry permits for AZNST long-distance travelers.

Bureau of Land Management

- Monitor trail use

Arizona Trail Association

- Collect thru-hiker completion data (voluntary)

Visitor satisfaction

Table 17. Visitor Satisfaction - Adaptive Management Metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Trail Experience	Provide premier trail visitor experiences to meet increasing public outdoor recreation needs. Balance the quality and quantity of recreational opportunities to preserve the AZNST resources and experience.	Visitor satisfaction	To be determined by local land managers

Adaptive Management Toolbox - Actions

- Include the AZNST in visitor use studies such as the Forest Service National Visitor Use Monitoring Survey and explore other opportunities to collect visitor satisfaction information.
- Monitor the Arizona Trail Association trail completion surveys and social media for visitor satisfaction trends.
- Monitor social media and trail information mobile applications for potential issues, events, visitor use trends.
- Address underlying issue that is decreasing visitor satisfaction, as appropriate.

Monitoring Responsibility

Forest Service

- National Visitor Use Monitoring

Arizona Trail Association

- Collect thru-hiker completion data (voluntary)
- Monitor social media (Arizona Trail Class of (year) Facebook Group)

Trailhead capacity

Table 18. Trailhead capacity, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Managed Trail Uses	Safeguard the AZNST's nature and purposes, and conserve, protect, and restore the AZNST resources, qualities, values, associated settings, and the managed uses.	Trailhead capacity issues, especially for trucks with trailers, or overflow parking along the roads; number of vehicles at trailheads per day	Number of days trailhead capacity exceeded per season

Adaptive Management Toolbox - Actions

- Enforce parking within established trailhead.

- Construct additional trailhead facilities, include accommodations for trucks and horse trailers where equestrian use is popular.
- Provide information about other opportunities and locations for a spectrum of uses and abilities.

Monitoring Responsibility:

- To be determined by local managing unit.

Special events

Table 19. Special events, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Managed Trail Uses, Trail Experience	Balance the quality and quantity of recreational opportunities to preserve the AZNST resources and experience.	Increase in requests for special events, or events that would impact the thru- hiking season	Maximum number of special events per passage, per year.

Adaptive Management Toolbox - Actions

- See criteria for consideration of special events in chapter 5, Permitted Uses.
- Consider the number and type of competitive events trail-wide and their effect on the thru-hiker and rider experience when evaluating new events.

Monitoring Responsibility

- To be determined by local managing unit

Accidents, conflicts, or other safety issues

Table 20. Accidents, conflicts, or other safety issues, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Managed Trail Uses, Trail Experience	Balance the quality and quantity of recreational opportunities to preserve the AZNST resources and experience.	Number or increase in incidence of documented accidents, conflicts, or other safety issues where the trail is on a road.	Maximum number of reported incidents per passage, per season

Adaptive Management Toolbox - Actions

Forest Service

- Talk with Arizona Trail Association, local managing units, and transportation departments to identify potential issues.

Noise disturbance

Table 21. Noise disturbance, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Managed Trail Uses, Trail Experience	Safeguard the AZNST's nature and purposes, and conserve, protect, and restore the AZNST resources, qualities, values, associated settings, and the managed uses. Manage to reduce conflicts between the AZNST and activities that are incompatible with the purposes for which it was established.	Survey data regarding noise in key locations (decibel levels and amount of motorized use), especially related to motorized use adjacent to, or crossing the trail. Amount of recreational shooting.	Maximum number of complaints per passage, per season or survey data in excess of a set threshold.

Adaptive Management Toolbox - Actions

- Provide information to trail users to enhance their understanding and expectations regarding adjacent motorized use and opportunities for solitude along the trail.
- Address noise concerns in the travel management planning process, consider options to reduce noise in proximity to popular non-motorized areas.
- Consider criteria developed by the National Park Service Natural Sounds program and tools such as: SPreAD-GIS: an ArcGIS toolbox for modeling the propagation of engine noise in a wildland setting, to assist in quantifying noise, mapping locations of potential impact, and developing mitigations as appropriate to the local conditions.

Monitoring Responsibility

- To be determined by managing unit.

Conflict between use types

Table 22. Conflict between use types, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Managed Trail Uses, Trail Experience	Safeguard the AZNST's nature and purposes, and conserve, protect, and restore the AZNST resources, qualities, values, associated settings, and the managed uses. Provide premier trail visitor experiences to meet increasing public outdoor recreation needs.	Documented conflict between use types, such as between day use and thru-travel, or between modes of travel such as hiking, biking, and horseback riding. Potential documentation through surveys.	Maximum number of documented conflicts per passage, per season.

Adaptive Management Toolbox - Actions

- Increase information, education, and interpretation about multiple use trails and trail ethics.
- Consider site-specific trail use restrictions as needed to address conflict. Increase education regarding appropriate trail uses, incorporate trail design features to slow the rate of travel or widen trail to reduce conflict.
- Consider alternate routes for mountain bikes or equestrians, as appropriate.

Monitoring Responsibility

To be determined by local managing units as necessary.

Forest Service

- Talk with Arizona Trail Association, local managing units, and organizations representing equestrians, bicyclists, and other users to identify potential issues.

Arizona Trail Association

- Monitor trail completion surveys, social media, and trail information mobile apps for potential issues.

Number of nights at full capacity

Table 23. Number of nights at full capacity, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Managed Trail Uses, Trail Experience	Provide premier trail visitor experiences to meet increasing public outdoor recreation needs	Number of nights that campsites are at full capacity per season	To be determined by local land managers

Adaptive Management Toolbox - Actions

- Add more designated camp sites
- Expand size of existing sites to accommodate more people per site.
- Create hiker-biker sites and equestrian group sites for AZNST use.
- Provide connecting or side trails to access campgrounds off the AZNST.

Issue camping permits, include an option for combining solo trail users into a single permit to maximize the potential for accommodating visitors.

Monitoring Responsibility

To be determined by local managing units as necessary.

National Park Service

- Identify and monitor backcountry permits for AZNST long-distance travelers (as well as AZNST permit requests that can’t be fulfilled).

Forest Service

- Talk with Arizona Trail Association and local managing units, and organizations to identify potential issues.

Camping outside designated areas

Table 24. Camping outside designated areas, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Trail Experience, Significant Resources	Safeguard the AZNST's nature and purposes, and conserve, protect, and restore the AZNST resources, qualities, values, associated settings, and the managed uses. Maintain the special environments, landforms and scenery that support trail visitor experiences.	Incidence of people camping outside of the designated camping areas	Maximum number of incidents per passage, per season

Adaptive Management Toolbox - Actions

- Increase information and education regarding campsite limitations and other nearby camping options.
- Increase the number or size of campsites available, or both.
- Implement techniques to disguise or prevent access to closed areas to rehabilitate them.
- Increase enforcement.

Monitoring Responsibility:

To be determined by local managing units as necessary.

Forest Service

- Conduct campsite inventories in key areas such as wilderness, wildlife habitat, and cultural resource areas and monitor for campsite proliferation or expansion.

Conflict between trail users and recreational shooters

Table 25. Conflict between trail users and recreational shooters, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Managed Trail Uses, Trail Experience	Safeguard the AZNST's nature and purposes, and conserve, protect, and restore the AZNST resources, qualities, values, associated settings, and the managed uses. Provide premier trail visitor experiences to meet increasing public outdoor recreation needs.	Incidence of conflict between trail users and recreational shooters	Maximum number of conflicts per passage, per season

Adaptive Management Toolbox - Actions

- Increase signage and visitor information regarding the proximity of the trail to popular shooting areas.
- Increase patrol and enforcement.
- Manage target shooting activity and plinking within a certain distance of the trail, where allowed by the managing agency.

Monitoring Responsibility:

- To be determined by local managing units as necessary.

Livestock waste on trail

Table 26. Livestock waste on trail, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Managed Trail Uses, Trail Experience	Provide premier trail visitor experiences to meet increasing public outdoor recreation needs	Presence of accumulated horse, cattle or other livestock manure or associated waste along the trail.	Presence or absence

Adaptive Management Toolbox - Actions

- Educate equestrians regarding options to reduce horse manure on the trail.
- Provide a separate equestrian trail for the first 0.5 to 0.75 miles from a trailhead, where manure tends to accumulate, as horses first set out on the trail and become active.
- Maintain and repair water systems and fencing, remove unnecessary waste associated with grazing operations such discarded irrigation tubing, fencing materials, pipes, tanks etc.
- Work with range specialists and grazing operators when locating range improvements within the national trail planning corridor to reduce impacts to visual resources, natural water sources, and the trail tread.

Monitoring Responsibility

To be determined by local managing units as necessary.

- Forest Service, Bureau of Land Management, and National Park Service
  - Gather data when surveying trail conditions.
  - Gather data when monitoring grazing allotments

Crowding at viewpoints or campsites

Table 27. Crowding at viewpoints or campsites, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Trail Experience	Provide premier trail visitor experiences to meet increasing public outdoor recreation needs. Balance the quality and quantity of recreational opportunities to preserve the AZNST resources and experience.	Crowding at popular viewpoints or campsites	People at one time, people per view shed (people within view or people visible at one time)

Adaptive Management Toolbox - Actions

- Increase information and education regarding popular viewpoints or campsite limitations and other nearby camping options.
- Provide education about options to visit popular areas during less busy seasons.
- Realign the trail or redesign the viewpoint or campsite, or both.

Monitoring Responsibility

To be determined by local managing units as necessary.

Availability of water

Table 28. Availability of water, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Managed Trail Uses, Trail Experience	Safeguard the AZNST's nature and purposes, and conserve, protect, and restore the AZNST resources, qualities, values, associated settings, and the managed uses. Provide premier trail visitor experiences to meet increasing public outdoor recreation needs	Availability of Water	Average miles between dependable water sources

Adaptive Management Toolbox - Actions

- Provide visitor education regarding the scarcity of water along the trail and the need to filter water, and to be prepared to carry water.
- Work with partners to develop additional water sources.

Monitoring Responsibility

Forest Service

- Work with Arizona Trail Association and local managing units to identify potential issues.
- Gather data when surveying trail conditions.

Arizona Trail Association

- Monitor trail completion surveys, social media, and trail information mobile apps for potential issues.

Trail experience, adjacent activities, or development

Table 29. Trail experience, adjacent activities, or development, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Trail Experience	Safeguard the AZNST's nature and purposes, and conserve, protect, and restore the AZNST resources, qualities, values, associated settings, and the managed uses. Manage to reduce conflicts between the AZNST and activities that are incompatible with the purposes for which it was established.	Adjacent activities or development affecting trail experience such as impacts to scenic views, impacts to dark night skies, or increased noise adjacent to the trail	Presence or absence

Adaptive Management Toolbox - Actions

- Encourage use of design standards and best management practices to maintain scenic integrity, dark skies, etcetera.
- Purchase right-of way or acquire land, develop agreements, encourage conservation easements in corridor, or consider relocation of trail segment.

Monitoring Responsibility

Local Managing Agency

- Collect and maintain data on projects and permitted activities along the trail

Forest Service

- Collect and maintain data on projects and permitted activities adjacent to the trail that may affect trail experience.
- Update trail-wide scenic inventory as needed.
- Talk with Arizona Trail Association and local managing units to identify potential issues.

Scenic, Historic, Natural, and Cultural Resources

Significant resources to be preserved – water quality

Table 30. Significant resources to be preserved – water quality, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Significant Resources	Maintain the special environments, landforms and scenery that support trail visitor experiences. Water quality meets standard.	Stream segments meet state water quality standards. Water quality (unhealthful levels of E. coli)	Requirements set by Arizona. Department of Environmental Quality

Adaptive Management Toolbox - Actions

- Identify possible sources of pollutants.
- Implement corrective actions to reduce pollutants to levels consistent with water quality standards.

Monitoring Responsibility

To be determined by local managing agency.

Trail experience – human waste

Table 31. Trail experience – human waste, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Trail Experience, Significant Resources	Safeguard the AZNST's nature and purposes, and conserve, protect, and restore the AZNST resources, qualities, values, associated settings, and the managed uses. Water quality meets standard.	Incidence and amount of human waste along trail or at campsites	Maximum number of incidents per passage, per season

Adaptive Management Toolbox - Actions

- Provide guidance on Leave No Trace methods for handling human waste.
- Install toilets at strategic locations.

Monitoring Responsibility

To be determined by local managing agency.

Trail experience, trail standards

Adaptive Management Metrics

Table 32. Trail experience and trail standards, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and purposes, Managed uses, Trail experience, Significant resources to be preserved	Maximum outdoor recreation potential. Provide opportunities for managed uses. Preservation of significant natural, historical, and cultural resources	Trail maintained to standard	Minimum miles of trail maintained to standard per season

Adaptive Management Toolbox - Actions

- Increase seasonal workforce, volunteers, and partners for trail maintenance efforts.

Monitoring Responsibility

Local Managing Agency

- Collect and maintain data on trail conditions and maintenance activities.

Trail experience, user-created trails

Table 33. Trail experience, user-created trails, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Trail Experience, Significant Resources	Safeguard the AZNST's nature and purposes, and conserve, protect, and restore the AZNST resources, qualities, values, associated settings, and the managed uses. Maintain the special environments, landforms and scenery that support trail visitor experiences. Trail maintenance standards, Soils standard	Presence of user created trails; trail widening, impacts to vegetation along trail	Number of user created trails or trail impacts per mile or per passage

Adaptive Management Toolbox - Actions

- Address drainage or other issues that may encourage trail widening.
- Close and restore user-created trails.
- Use trail design methods such as trail hardening, signage, barriers, etc. to physically contain hikers to the trail.
- Relocate trail to a more sustainable location.

Monitoring Responsibility

Local Land Managers

- Gather data when surveying trail conditions.

Significant resources to be preserved – proximity to springs

Table 34. Significant resources to be preserved - proximity to springs, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Trail Experience, Significant Resources	Safeguard the AZNST's nature and purposes, and conserve, protect, and restore the AZNST resources, qualities, values, associated settings, and the managed uses. Maintain the special environments, landforms and scenery that support trail visitor experiences. Trail maintenance standards and soils standard	Number of campsites, size of campsite disturbed area, especially where use is concentrated near springs (a violation of state law)	Number or percent increase over time

Adaptive Management Toolbox - Actions

- Increase and enhance visitor information regarding protection of soil and water resources including but not limited to, environmental education, interpretation, Leave No Trace Ethics.
- Develop more campsites or expand the size of existing campsites to fit more people per site, or both, in appropriate and sustainable locations.
- Issue campsite permits.
- Install signs near water sources reminding visitors to not camp within ¼-mile of water in the interest of protecting watershed health and wildlife resources.

Monitoring Responsibility

To be determined by local managing units.

Forest Service and Local Managing Units

- Conduct campsite inventory.

Significant resources to be preserved – wildlife behavior

Table 35. Significant resources to be preserved – wildlife behavior, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Significant Resources	Safeguard the AZNST's nature and purposes, and conserve, protect, and restore the AZNST resources, qualities, values, associated settings, and the managed uses. Wildlife standards	Wildlife behavior; potential disturbance due to use levels	Determined by local land managers, dependent on wildlife species

Adaptive Management Toolbox - Actions

- Increase information and education about appropriate behavior around wildlife.
- Discourage off-trail use or camping in critical wildlife areas as necessary.
- Apply reroutes or seasonal closures, as necessary.

Monitoring Responsibility

To be determined by local managing unit.

Significant resources to be preserved – invasive species

Table 36. Significant resources to be preserved – invasive species, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Significant Resources	Safeguard the AZNST's nature and purposes, and conserve, protect, and restore the AZNST resources, qualities, values, associated settings, and the managed uses. Vegetation and Invasive Species standards	Invasive species	Determined by local land managers, dependent on weed species

Adaptive Management Toolbox – Actions

- Increase education and information regarding invasive species.
- Install and encourage use of boot cleaning stations.
- Require use of weed free feed for stock.

Monitoring Responsibility

To be determined by local managing unit.

Significant resources to be preserved – wilderness

Table 37. Significant resources to be preserved – wilderness, adaptive management metrics

Trail Values	Trail Objectives	Indicator	Thresholds
Nature and Purposes, Trail Experience, Significant Resources	Safeguard the AZNST's nature and purposes, and conserve, protect, and restore the AZNST resources, qualities, values, associated settings, and the managed uses. Wilderness Standards	Wilderness	See wilderness plans for group size, and other site-specific thresholds.

Adaptive Management Toolbox - Actions

- Increase and enhance visitor information including, but not limited to, environmental education, interpretation, Leave No Trace Ethics.
- Implement wilderness permit requirements.

Monitoring Responsibility

Local Managing Agency

- Monitor wilderness character

Monitoring Schedule

The monitoring report containing input from local land managers and partners will be compiled by the trail administrator. The report elements could include:

- A snapshot of the status and trend in the condition of the selected indicators for the trail's resources and values.
- Documentation of how trail conditions compare with the established thresholds.

- Highlight trail projects and accomplishments to maintain or improve trail conditions.
- Identify key issues and challenges to inform adaptive management approaches.
- Provide visual documentation using a simple condition status.

Table 38 provides the monitoring schedule. It lists the indicator to be monitored (for instance, visitor capacity), the available sources for data (such as a trail register, trail counter, or other relevant visitor use data sources), and the established monitoring frequency that applies to that indicator.

Table 38. Monitoring schedule

Indicator	Data Source	Monitoring Schedule
Visitor Capacity	Trail register, trail counter, or other relevant visitor use data sources	Annual or every 1-3 years. Frequency to be determined by the local unit.
Visitor Experience	Visitor surveys or other relevant visitor experience data	Annual or every 2 to 5 years. Frequency to be determined by the local unit.
Resource Conditions	Local management unit condition surveys	Percentage of trail annually. Scope and frequency to be determined by the local unit.
Trail Infrastructure Conditions	Local management unit maintenance data	Annual or to be determined by local unit.

In the upper portion of figure 24, visual condition and trend status is represented by colors much like a traffic signal. Green means “acceptable”, yellow means "shows potential issues with need to increase monitoring", red means "condition and trends are negative and management action is needed", and grey means "trend data is unavailable or unknown".

In the lower half of the figure, the blue horizontal arrow symbol indicates "stable conditions", blue up arrow symbol indicates "improving conditions", blue down arrow symbol indicates "declining condition", and a blue question mark symbol indicates "Trend unavailable or unknown".

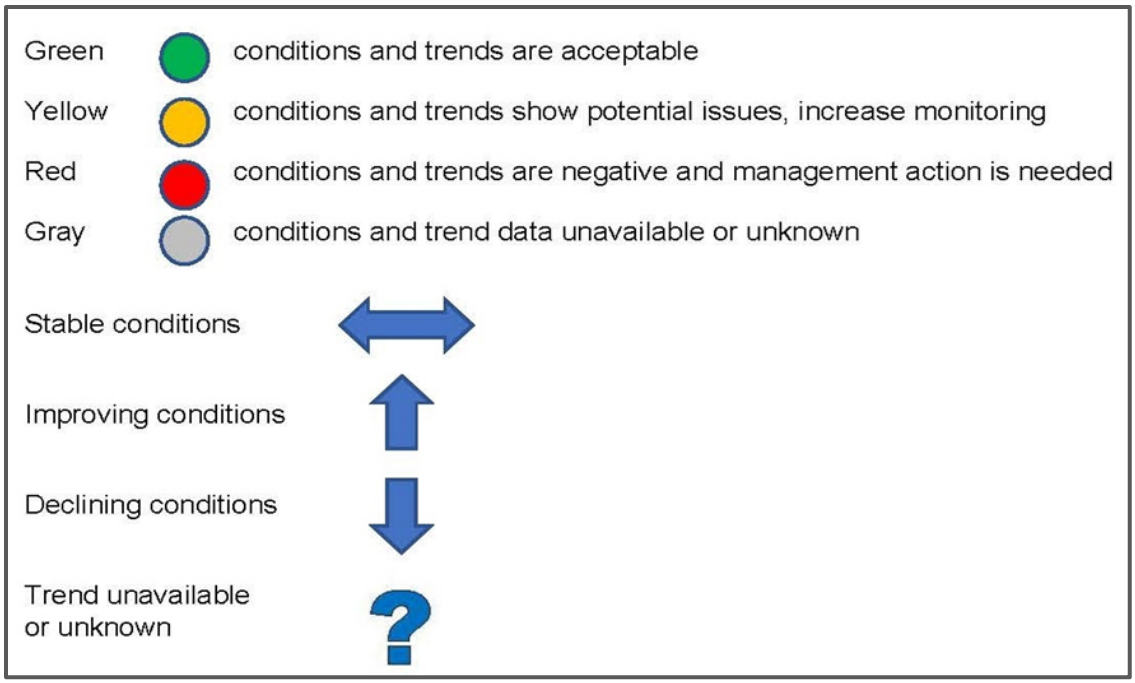

Figure 24. Visual condition and trend status

Appendix E – Recommended Priority Actions

The following are priority actions recommended to be undertaken within the first five years of the comprehensive plan's adoption. The specific timing for implementation of these actions will depend on subsequent coordination between the Forest Service, the land managing agencies, and relevant partner organizations. This is not an exhaustive list of the actions that may be undertaken within the first five years to implement the comprehensive plan. For all these actions, the Forest Service and the land managing agencies should undertake consultation and collaboration with the affected tribes and seek to incorporate tribal expertise and indigenous knowledge (see chapter 1 and chapter 2). The Forest Service will work collaboratively with partners to document ongoing work and make it available to the public, including inventories, protocols related to trail management, and monitoring data.

Collaborative Management

- Meet with land managing agencies and partner organizations to discuss capacity and funding needs related to AZNST management and implementation of this comprehensive plan, and to identify opportunities to strategically align and leverage resources.

Monitoring

- Implement the monitoring plan in coordination with the land managing agencies and partner organizations and utilize the adaptive management toolbox (see appendix D).
- Develop documents, website pages, story maps, dashboards, or other tools and use them to share monitoring reports and trends with the public.

Trail Location

- Continuously update the geospatial and tabular data for the trail following trail reroutes or other changes, and to align with the ATA's GIS Passage and trail centerline information where appropriate.
- Coordinate with the land managing agencies and partner organizations to update and refine the geospatial and tabular data for the AZNST and to identify the AZNST on maps and other visitor information.
- Coordinate with the land managing agencies, private landowners, and partner organizations to identify priority areas for Optimal Location Review (OLR). (See chapter 4.)

Connecting and Side Trails

Coordinate with land managing agencies and partner organizations to pursue designation of the LOST Trail, Temporal Gulch Connector Trail, and Pusch Ridge Wilderness Bypass as connecting or side trails for the AZNST.

Visitor Use Management

- Coordinate with the land managing agencies and partner organizations to collect data to measure use patterns and visitor impacts along the AZNST.

- Gather information from the national parks that issue permits along the AZNST regarding current approaches and challenges related to permits for long-distance hikers under the parks' existing permit systems, as well as the nexus with the Recreation.gov website.

Visitor Information and Interpretation

- Coordinate with the land managing agencies to identify segments of the trail that provide opportunities for pack and saddle stock use and bicycles (see chapter 3) and update visitor information to reflect this. Coordinate with the land managing agencies and partner organizations to provide visitor information targeted to pack and saddle stock users and bicyclists. As part of this effort, gather information about the status of electric bicycle use ("e-bikes") across jurisdictions and relevant visitor information needs to help prevent accidental use of electronic bicycles in areas where it is not permitted.
- Develop videos, story maps, website features, or other tools for effective messaging to trail visitors around health and safety, natural and cultural resource protection, and other topics highlighted in chapter 5.
- Submit service mark for the trail to the Forest Service, Washington Office, to be registered as a federal mark.

Facilities and Signs

- Update the inventory of AZNST signs or other marks across the trail. Coordinate with the land managing agencies and partner organizations to install signs where they are needed and in accordance with guidance in this comprehensive plan and the managing agency's sign standards and guidelines (see chapter 5 and appendix G).
- Remove signs where they are not necessary for navigation in order to reduce sign clutter and maximize the naturalness of the AZNST experience.

Trail Closures and Temporary Detours

- Coordinate with the land managing agencies and partner organizations to identify preferred temporary detour routes to be used in the event of future emergencies that necessitate closure of the trails, roads, or areas along the AZNST (see chapter 5).

Land Acquisition and Protection

- Develop a management toolbox for land acquisition and protection along the trail (see appendix F).
- Review land ownership information for parcels along the trail (see State, County, Municipal, and Private Lands in appendix F). Coordinate as needed with the state and counties to obtain up-to-date information.
- Contact private landowners along the trail to provide information about the trail and opportunities for donation, purchase, or exchange of lands or interests in lands; voluntary cooperative agreements; or other approaches for management of the trail (see Methods and Tools in appendix F).
- Coordinate with the state, and local governments that manage segments of the AZNST regarding opportunities for donation, purchase, or exchange of lands or interests in lands; voluntary cooperative agreements; or other approaches for management of the AZNST (see

more information on cooperation with states, counties, municipalities, private landowners, and private organizations for trail management in appendix F.)

- Establish voluntary cooperative agreements between the Forest Service and the other federal land managing agencies (National Park Service and Bureau of Land Management) documenting cooperation for management of the AZNST within federally administered areas. Coordinate to identify opportunities and roles related to land acquisition and protection for the AZNST on non-federal lands. (See Cooperative Agreements in appendix F.)

Trail Improvements and Maintenance

Coordinate with land managing agencies and partner organizations for continued trail improvements and maintenance. Priority projects to address significant deferred trail maintenance items on Forest Service lands are listed in Table 39. These projects are funded with Great American Outdoors Act (GAOA) funds. The anticipated timeline for these projects is January 2024 through September 2028.

Table 39. Priority Forest Service Arizona National Scenic Trail Projects

Project Title	Forest (Unit)	Cost Estimate	Description
Gate and Raised Cattle Guard Improvements	Kaibab NF, Tusayan RD	$23,240	Replace a gate and install nine (9) raised cattle guards next to existing swing gates.
Heavy Deferred Trail Maintenance	Kaibab NF	$101,250	Conduct heavy deferred trail maintenance at six critical locations across the forest for a total of ~28.5 mi.
Trail Signage Improvements	Kaibab NF, North Kaibab RD	$9,000	Install four (4) AZNST signs on Hwy. 67 and two (2) directional signs at the Kaibab Plateau trailhead.
Heavy Deferred Trail Maintenance	Tonto NF	$202,750	Conduct heavy deferred trail maintenance at eight critical locations across the forest for a total of about 47.2 mi.
Routine Trail Maintenance on Multiple Forests	Coronado NF Coconino NF Kaibab NF Tonto NF	$88,800	Conduct routine trail maintenance on approximately 43 miles on multiple forests: Coronado NF = ~22.5 mi. Coconino NF = ~6 mi. Kaibab NF = ~8.5 mi. Tonto NF = ~6 mi.

Appendix F – Acquisition and Protection Plan for the Arizona National Scenic Trail

Introduction

The National Trails System Act (P.L. 90-543 as amended) (NTSA) requires that comprehensive plans include an acquisition of protection plan that addresses lands to be acquired by fee title or lesser interest, and address anticipated cooperative agreements needed for any lands not to be acquired (16 U.S.C. 1244(e)). The acquisition and protection plan supports implementation of Section 7 of the National Trails System Act (16 U.S.C. 1246) and will help achieve two important goals for the Arizona National Scenic Trail (Arizona Trail or AZNST):

1. Provide for a continuous, connected non-motorized trail on lands where public access for recreational use of the trail is permanently established.
2. Ensure that lands along the AZNST are sufficiently protected to provide for the trail nature and purposes and other trail values, including the preservation of significant natural, historical, and cultural resources.

This acquisition and protection plan addresses these primary topics:

- Key provisions of the National Trails System Act
- Current landownership and special considerations related to the trail route on roads
- Desired conditions
- Guiding principles and prioritization criteria
- Methods and tools
- Strategies for Implementation

Key Provisions of the National Trail System Act

The National Trails System Act established the National Trails System "…to provide for addressing the ever-increasing outdoor recreation needs of an expanding population and to promote the preservation of, public access to, travel within, and enjoyment and appreciation of, the open air, outdoor areas, and historic resources of the Nation" (16 U.S.C. 1241(a)). The Act states that national scenic trails will be located to provide for maximum outdoor recreation potential as well as the conservation and enjoyment of the scenic, historic, natural, and cultural resources in the areas through which these trails pass (16 U.S.C. 1242(a)(2)).

As described in chapter 1, the AZNST was first envisioned in the 1970s and the idea took hold during the 1980s and 1990s. It was designated by Congress as one of America's national scenic trails through the Omnibus Public Lands Management Act of 2009 (P.L. 111-11), which amended Section 5(a) of the National Trails System Act to add the following:

(27) ARIZONA NATIONAL SCENIC TRAIL

> (A) IN GENERAL- The Arizona National Scenic Trail, extending approximately 807 miles across the State of Arizona from the U.S.-Mexico international border to the Arizona-Utah border, as generally depicted on the map entitled "Arizona National Scenic

> Trail" and dated December 5, 2007, to be administered by the Secretary of Agriculture, in consultation with the Secretary of the Interior and appropriate State, tribal, and local governmental agencies.
>
> (B) AVAILABILITY OF MAP- The map shall be on file and available for public inspection in appropriate offices of the Forest Service.

Chapter 1 provides additional information about the National Trails System Act and other authorities that apply to AZNST. The following sections summarize key provisions relevant to land acquisition and protection along national scenic trails.

Cooperation

The National Trails System Act encourages cooperation with non-federal entities, including states, counties, municipalities, private landowners, private organizations, and individuals in many aspects of trail management. Federal agencies may enter into cooperative agreements with these entities to operate, develop, and maintain any portion of the trail, within or outside a federally administered area (16 U.S.C. 1246(h)(1)).

Transfer of Management Responsibilities to Another Federal Agency

The National Trails System Act allows the Secretary responsible for administration of the trail to transfer management responsibilities for a segment of the trail to another Federal agency with those lands then managed under the rules and regulations of the accepting agency. (16 U.S.C. 1246(a)(1)(B)).

Acquisition of Lands (or Interests) Within Federally Administered Areas

The National Trails System Act allows federal agencies to acquire lands or interests in lands within the exterior boundaries of federally administered areas through written cooperative agreements with landowners, donation, purchase with donated or appropriated funds, or exchange. (16 U.S.C. 1246(d)) Federally administered areas are those lands contained within the Congressionally designated boundaries of the national forests, national parks, national recreation areas, and national historical reserves. Federal lands administered by the Department of Interior Bureau of Land Management do not have Congressionally designated boundaries.

Acquisition of Lands (or Interests) Outside Federally Administered Areas

For lands outside the exterior boundaries of federally administered areas, the National Trails System Act encourages states and local governments to enter into written cooperative agreements with landowners or to acquire such lands or interests in lands to be used as segments of the trail. If states or local governments fail to obtain lands or interests or enter into cooperative agreements with landowners, federal agencies can acquire such lands or interests, or enter into cooperative agreements:

> *…the appropriate Secretary may (i) enter into such agreements with landowners, States, local governments, private organizations, and individuals for the use of lands for trail purposes, or (ii) acquire private lands or interests therein by donation purchase with donated or appropriated funds or exchange… the appropriate Secretary may acquire*

lands or interests therein from local governments or governmental corporations with the consent of such entities. The lands involved in such rights-of-way should be acquired in fee if other methods of public control are not sufficient to assure their use for the purpose for which they are acquired…. (16 U.S.C. 1246 (e)).

Use of Condemnation

Section 7(g) of the National Trails System Act addresses use of condemnation for National Trails System Act purposes in general. It allows the responsible Secretary to use condemnation without consent of the landowner to acquire lands or interests therein, only in cases where, in the Secretary's judgement, all reasonable efforts to acquire such lands or interests by negotiation have failed; provided further, that condemnation proceedings may not be used to acquire fee title or lesser interests to more than an average of 125 acres per mile of trail, (16 U.S.C. 1246(g)).

Use of Land and Water Conservation Fund

The National Trails System Act allows appropriated funds from the Land and Water Conservation Fund (LWCF) to be used to acquire lands of interest for the purposes of the National Trails System Act (16 U.S.C. 1246(g)).

Current Status of Land Ownership and Administration of the AZNST

The location of the trail is addressed in chapter 4 of the comprehensive plan, which describes in detail the congressionally designated route of the AZNST through Arizona's geographic regions and significant resources. In addition, chapter 2 highlights the federal agencies, state agencies, counties, and municipalities that manage segments of the trail, and the role of private lands and private landowners in trail management.

This acquisition and protection report summarizes available data on land ownership and land administration for lands along the AZNST national trail planning corridor.

The AZNST crosses through different land ownership types and jurisdictions (see figure 25). More than 95 percent of the trail is located on public lands (federal, state, county, or city), about three percent is on private lands.

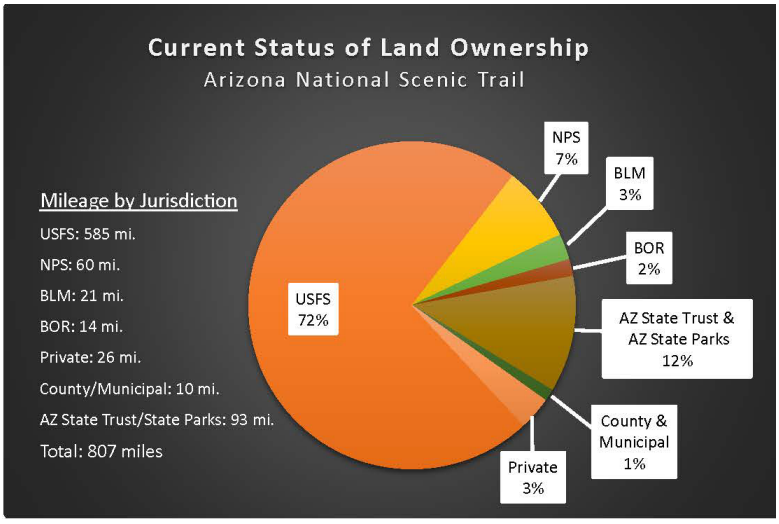

Figure 25. Land ownership with associated administration on the AZNST

Federally Administered Lands

Approximately 84 percent of the AZNST is located on federal lands administered by the Forest Service, National Park Service, and Bureau of Land Management (table 39). Of those agencies the Forest Service manages 72 percent of the trail. Each of these federal agencies is responsible for developing and managing segments of the AZNST, in concert with agency land management plans.

Table 39. Federal agencies that manage segments of the Arizona National Scenic Trail

Federal Agency	Units with segments of the AZNST	Miles of trail (approximate)	Percent of total
Forest Service	Coronado National Forest, 145 miles Tonto National Forest, 190 miles Coconino National Forest, 158 miles North Kaibab Ranger District, 53 miles Baaj Nwaavjo I'tah Kukveni - Ancestral Footprints of the Grand Canyon National Monument (Tusayan RD, Kaibab NF), 39 miles	585	72 percent
National Park Service	Coronado National Memorial, 4 miles Saguaro National Park, 17 miles Walnut Canyon National Monument, .1 miles Grand Canyon National Park, 39 miles	60	7 percent
Bureau of Land Management	Gila District, Tucson Field Office, 8 miles Arizona Strip District, 12 miles	21	3 percent
Bureau of Reclamation	Phoenix Area Office	14	2 percent

National Forest System

The Arizona Trail crosses about 585 miles of National Forest System lands on four Arizona national forests including:

- Coronado National Forest
- Tonto National Forest
- Coconino National Forest
- Baaj Nwaavjo I'tah Kukveni - Ancestral Footprints of the Grand Canyon National Monument (Tusayan RD, Kaibab NF)
- North Kaibab Ranger District

Each national forest consists of ranger districts. Each forest is managed by a forest supervisor while each district is managed by a district ranger.

The national forests in Arizona are within the Forest Service, Southwestern Region, headquartered in Albuquerque, New Mexico. Each national forest is managed by a forest supervisor who are divided by districts. The districts are overseen by a district ranger The lands and realty functions for areas along the AZNST are handled mainly the regional office.

National Park System

The AZNST crosses about 60 miles of lands administered by the DOI National Park Service on four units within Arizona:

- Coronado National Memorial

- Saguaro National Park
- Walnut Canyon National Monument
- Grand Canyon National Park

Each of these Arizona National Park Service units are within the Intermountain Region of the National Park Service. Each National Park unit is managed by a superintendent. The Coronado National Memorial is managed by a Superintendent who oversees the Southeast Arizona Group and Walnut Canyon National Monument is managed by a Superintendent who oversees the Flagstaff Area National Monuments. Lands and realty functions are handled mainly by staff in National Park Service regional office.

Bureau of Land Management

The AZNST crosses about 21 miles of lands administered by the Bureau of Land Management (BLM). BLM's State Office for Arizona is headquartered in Phoenix, Arizona, and is overseen by a State Director. BLM's administrating district offices include Gila District Office and Arizona Strip District Office, and each is overseen by a District Manager. Agency realty functions are in the state office and district office.

Bureau of Reclamation

Approximately 14 miles of the trail along the Gila River crosses Bureau of Reclamation's Butte Dam Withdrawal (Secretarial Order #3835). The Bureau of Reclamation requested relinquishment of the withdrawal several years ago, and the trail is managed by the BLM Tucson Field Office while the withdrawal relinquishment is processed.

State, County, Municipal, and Private Lands

Approximately 16 percent (roughly 133 miles) of the AZNST is located on lands not within federally administered areas. Those lands, listed in table 40, are managed by state agencies, city or county governments, or by private landowners.

- Arizona State Trust Lands comprise about 88 miles, or 11 percent of total trail length.
- Arizona State Parks comprise about 5 miles, or 0.61 percent of total trail length (a short segment at Oracle State Park).
- Private lands comprise approximately 26 miles, or three percent of total trail length.
- County and Municipal lands, approximately 10 miles, or one percent of total trail length.

Table 40. Segments of the AZNST on State, county, municipal and private lands

Type or Entity	Units with Segments of the Trail
Arizona State Land Department	State Trust Lands
Arizona State Parks	Oracle State Park
County or Municipal	Pima County - Colossal Cave Mountain Park and Cienega Creek Natural Preserve, and City of Flagstaff
Private lands	Babbitt Ranches' CO Bar Ranch, Wildlife Corridors Preserve, and Rosemont Copper's Sonoita Spring Ranch

Lands administered by different agencies may be managed for different purposes. Arizona State Trust lands have a legal responsibility to generate revenue for designated beneficiaries. The Arizona-New Mexico Enabling Act of 1910 (Act), passed on June 20, 1910, authorized the Territory of Arizona to become a state, and enter the Union on equal footing with the original states; the congressional land grant provided support for foundational public services. In addition to the previously designated sections of land, the Act assigned sections 2 and 32 of each township to be held in trust for Common Schools (K-12 Education). Congress considered the need for other foundational public services, and through the Enabling Act, more than two million additional acres were allocated for their use. After all congressional actions were complete, the total acreage granted was approximately 10,900,000 acres. Today, State Trust Land is a dedicated revenue source for 13 Trust Beneficiaries.

State Trust Land is different from public land, such as U.S. Bureau of Land Management land, national parks or forests, in that all uses of Trust land and its resources must compensate the 13 Trust Beneficiaries. Congress, in granting the land to the State in preparation for statehood, recognized its value and the importance of providing support to public schools and other public institutions (Home | Arizona State Land Department (az.gov)). Three counties (Pima, Pinal and Coconino) purchased a 15-foot-wide right-of-way across State Trust Lands for the purposes of trail construction and public access, however the lands under that right-of-way can be sold at any time.

Private landowners play an integral role in the management of the AZNST even though the percentage of the trail located on private land is small. Landowner roles and responsibilities can vary greatly depending upon the level of engagement exhibited by the landowner. Guidance on the potential roles and responsibilities of private landowners is covered in chapter 2.

AZNST Route on Roads

Approximately 128 miles of the trail is currently located on roads. Based on available geospatial data, segments of the AZNST are located on or along the following types of roads:

- low-standard natural surface or gravel roads (about 124 miles)
- paved moderate speed roads (about three miles)

The total of the AZNST route on roads was derived from agency and state GIS data layers and includes all mileage classified as roads, including roads that may be currently closed to the public or in basic custodial care. These roads are managed by several different entities, including federal land management agencies, state highway departments and state land management agencies, county and municipal governments, and private landowners.

National scenic trails are intended to provide extended opportunities for non-motorized recreation, with public use of motor vehicles along the trail prohibited (16 U.S.C. 1246(c)). Additionally, the proximity of trail users (pedestrians, and in some segments equestrians and bicyclists) to motor vehicle traffic may also create public safety concerns. Segments of the AZNST route that are on open roads is recommended to be moved onto non-motorized trails to meet the nature and purpose of the trail. In limited circumstances this may not be possible by the managing agency, however, alternatives to the use of a road will always need examined within land management planning. This acquisition and protection plan provides recommended methods and tools to accomplish this goal.

Guiding Principles and Prioritization Criteria

When acquiring lands or interests in lands, or entering into cooperative agreements, the aim should be to provide for the AZNSTs nature and purposes and other trail values, improve public access, improve visitor experience, address public health and safety concerns, and improve the trail's manageability. Chapter 3 articulates the nature and purposes of the trail and other trail values (managed uses), and significant resources) that are integral to the AZNST and foundational considerations in all aspects of its administration and management. Chapter 5 of the comprehensive plan also includes trail-wide objectives as well as desired conditions and related management practices relevant to land acquisition and protection. The following are the desired conditions for land acquisition and protection:

- The AZNST is a continuous, connected non-motorized trail on lands where public access for hikers and, where allowed by the land managing agency, pack and saddle stock users and bicyclists are allowed.
- Lands along the AZNST are sufficiently protected so that they may continue to provide for the nature and purposes and other trail values, including the preservation of significant natural, historical, and cultural resources associated with the trail.

The aim for acquisition of lands, or interests in land, is to safeguard the nature and purposes for which the national scenic trail was designated, improve public access, address public health and safety concerns, improve visitor experience, and improve trail manageability.

To achieve these desired conditions, the following twelve "guiding principles" will guide this land acquisition and protection plan for the AZNST:

1. **Complete a Non-Motorized Trail.** All land acquisition and protection actions should contribute to the overall goal of completing the trail as a continuous non-motorized trail. Completing the trail also means providing for the trail's nature and purposes and safeguarding trail values, including securing permanent public access wherever possible.
2. **Roads.** At present, approximately 16% of the trail is located on roads. To meet the intent of the National Trails System Act, national scenic trails are non-motorized trails; segments of the AZNST currently located on motorized routes are considered temporary locations. Segments of the trail located on motorized routes should be moved onto non-motorized trails. In limited cases, conversion of roads to trails could be an appropriate resolution based on the local managing agency or private landowner's preferred approach based on their travel management planning.
3. **Optimal Location Review** will be used as a guide to assist with acquisition and protection efforts. The purpose of the optimal location review is to identify the trail location that will best provide for the nature and purposes of the trail into the future; in many places the optimal location is the Congressionally designated route but in others the optimal location may be elsewhere and would require moving the trail (refer to point number 2 of this list). Chapter 4 of the comprehensive plan describes the optimal location review process as it pertains to the AZNST. Utilizing the optimal location review helps the administering agency, land managing agencies, and partner organizations coordinate effectively to plan, develop, and protect the trail in the best long-term location and avoid misdirecting resources to transitory locations. The optimal location review process will generally be completed before acquiring lands or easements along the AZNST.

4. **Prioritization Criteria.** To be effective with limited resources, a set of criteria will be developed and used to identify priorities for acquiring or otherwise protecting lands along the trail. The criteria are a tool (not agency policy) and may be updated as needed to remain relevant and responsive to dynamic conditions. In general, prioritize acquisition and protection actions that would:
    a. Resolve public access or trespass issues.
    b. Resolve public health and safety concerns. Take action to address segments of the trail that are currently located on roads or motorized trails, with greatest attention to segments where non-motorized users may face safety hazards due to traffic, speed, or road conditions.
    c. Respond to offers from willing landowners (see guiding principle number 5, below).
    d. Avoid permanent development that would not be compatible with the nature and purposes of a national scenic trail.
    e. Contribute to the preservation of significant natural, historical, and cultural resources for the AZNST, as identified in chapter 3 of the comprehensive plan: the trail itself; exceptional scenic beauty and variety; wilderness and backcountry settings; diverse ecological communities and valued plant species; valued wildlife species; places of importance to tribes; traces of the past; and rivers, and streams.
    f. Acquire or otherwise protect lands outside the boundaries of federally administered areas, in situations where state and local governments, and cooperating private entities are unwilling or unable to do so.
5. **Willing Landowners.** This is a fundamental principle. It is critical to work with private landowners to cultivate relationships and be responsive to good opportunities to acquire lands or interests in lands from willing landowners, especially by voluntary land donation and land purchase.
6. **Fee Title Acquisitions.** Within national forests and other federally administered areas, emphasize use of fee title acquisitions (land purchases and land donations) to ensure long-term protection of land areas along the trail. Outside of federally administered areas, encourage state and local governments, and cooperating private entities, to acquire such lands or interests on lands, or enter into cooperative agreements as needed to assure protection of the AZNST.
7. **Land Exchanges.** Exchanges are a valuable tool for fee title acquisitions. But Forest Service land exchanges are relatively costly, time consuming, and subject to environmental analysis under the National Environmental Policy Act (NEPA), Land exchanges should be considered only in situations where there will be clear and substantial benefits to the AZNST.
8. **Perpetual Easements.** Use all available acquisition and protection tools (see Methods and Tools, below), including the acquisition of perpetual trail easements and conservation easements along the AZNST. When fee title acquisitions are not feasible, the next priority should be to acquire trail easements to secure a legal right of access and public use of the trail. Once a legal right of access and public use is secured for the AZNST, conservation easements should be considered to help protect the entire width of the national trail planning corridor, including scenic areas and significant natural, historic, and cultural resource values.
9. **Cooperative Agreements.** Cooperative agreements should be used to document cooperation in managing the AZNST where the trail crosses lands administered by other federal agencies,

tribal lands, state lands, county or city government lands, and private lands. Although the Forest Service prefers to use the conventional acquisition tools to ensure permanent protection of the AZNST, cooperative agreements are an appropriate tool in some situations. The Forest Service will strive to make the term of the agreements as long lasting as possible.

10. **Geospatial Data.** GIS mapping and geospatial data will provide important information for implementing this land acquisition and protection plan. Effective administration and management of the AZNST requires the ability to understand and display land ownership information along the trail. Geospatial data also plays an important role in the optimal location review process.
11. **Land and Resource Management Plans.** Chapter 2 covers Trail Planning, Roles, and Responsibilities. As land use plans are revised, they should incorporate direction and guidance for the AZNST. As opportunities arise and in accordance with the relevant agencies' planning regulations and policies, include appropriate management direction and guidance for AZNST land acquisition and protection into federal land managing agencies' land management plans (such as forest plans for national forests, general management plans and associated planning documents for national park units, and resource management plans for lands managed by the Bureau of Land Management). These plans can provide valuable vision and guidance for land acquisition and protection activities within federally administered areas.
12. **Tribal, State, and Local Government Plans.** As invited and as opportunities arise, participate in, and contribute to planning efforts by tribal, state, and local governments. Examples include Arizona State Comprehensive Outdoor Recreation Plan (SCORP) and local government trail plans. Provide information about the AZNST and assist other governments to develop management direction and guidance for land acquisition and protection for the AZNST, as appropriate.

Methods and Tools

The primary methods and tools available to the Forest Service, and to other federal and state agencies, to use for implementing an Acquisition and Protection Plan are:

- Land purchase (acquire land in fee title)
- Land donation (acquire land in fee title)
- Land exchange (acquire land in fee or partial interest)
- Acquire trail easements (by purchase, donation, or exchange)
- Acquire conservation or scenic easements (by purchase, donation, or exchange)
- Enter into cooperative agreements (with agencies, landowners, other entities)

Each of these tools will be used by the Forest Service and cooperating agencies, where appropriate, to implement the acquisition and protection plan for the AZNST.

This section describes:

- Each method and tool,
- The primary authorities (laws and regulations),

- The applicable Forest Service direction and policy,
- The primary steps in the process (Forest Service),
- The pros and cons of each method,
- The anticipated effectiveness of each method, and
- The potential role of partners in using each method.

The Forest Service's use of each method listed above is described within this section. Other agencies and conservation partners also acquire lands and easements. Their specific authorities, policies and procedures will often vary from Forest Service authorities, policies, and procedures.

Land Purchase

Summary

Purchase of private lands in fee title is the most effective tool available to the Forest Service in acquiring and protecting lands along the National Trails System. Within and adjacent to the western national forests, private land inholdings are the result of the Homestead Acts, Railroad Grants, State School Grants, and the US mining laws.

For any Forest Service land purchase to be successful, the key elements are:

1. A willing seller (landowner),
2. Acceptable title to the property,
3. Appraisal accepted by the landowner and Forest Service,
4. Public and political support, and
5. Funding to complete the purchase.

A typical Forest Service land purchase will take from 1 to 2 years to complete after the purchase funding is obtained.

Primary Authorities

The Forest Service has considerable authority to purchase land within and outside the proclaimed National Forest boundaries.

The **National Trails System Act of October 2, 1968** (P.L. 90-543, as amended) grants specific and broad authorities to the Federal agencies to acquire lands and interests in lands by written cooperative agreement, donation, purchase, or exchange. The National Trails System Act should be considered the primary authority for the AZNST. Acquisition documents should cite this authority and other authorities as appropriate.

The AZNST was designated by Congress as a national scenic trail through the Omnibus Public Lands Management Act of 2009 (P.L. 111-11), which amended the National Trails System Act.

In addition to the National Trails System Act, the following Forest Service purchase authorities are available:

- The Department of Agriculture Organic Act of 1956 authorizes purchase for almost any purpose.
- The Federal Land Policy and Management Act of 1976 is a second primary authority for BLM and the Forest Service to acquire lands.
- The Land and Water Conservation Fund (LWCF) Act is another authority to purchase lands. The Act states: "Land outside but adjacent to an existing national forest boundary, not to exceed 3,000 acres in the case of any one forest, that would comprise an integral part of a forest recreational management area may also be acquired with amounts appropriated from the Fund.

Annual Congressional appropriations acts, specifically appropriated dollars from the Land and Water Conservation Fund, provide the primary funding to purchase lands.

Forest Service Direction and Policy

Direction and guidance for land purchases can be found in:

- Forest Service Manual 5420
- Forest Service Handbook 5409.13

Base purchases on approved land and resource management, landownership, and composite plans. At the time of plan completion, the existing forest plans for the national forests which host the AZNST do not provide land acquisition direction and guidance specific to the trail. Until such time as these forest plans are revised or amended, this comprehensive plan will inform the acquisition of lands and interests along the AZNST.

The guidance is purchasing lands with willing sellers at a price established by the approved appraisal of market value. Lands may be purchased for less than appraised value if the landowner so requests after being offered just compensation.

Nominate and evaluate proposed land acquisitions using the criteria established each year in the Land and Water Conservation Fund Act project nomination process.

Pros and Cons

Pros of Land Purchase

- Fee title land acquisitions, whether by donation, purchase, or exchange, are the most effective tool in ensuring long-term protection of National Scenic Trails.
- In fee title land acquisitions, the United States acquires the permanent rights to manage the land consistent with the goals and objectives for the AZNST and the forest plans.
- Landowners (sellers) do not typically retain rights on the land.
- Conservation organizations are often willing to partner with the Forest Service in land purchases, especially where there are substantial public values and resources.
- Funding for land purchases is currently at a relatively high level, due in part to strong public support, passage of the Great American Outdoors Act and a Congressional commitment for full funding of the Land and Water Conservation Program.
- Forest Service land purchases are categorically excluded from NEPA documentation and are not subject to public appeal or protest.

- The process of completing Forest Service land purchases is typically less complex, less costly, and less time-consuming in contrast to land exchanges.
- The National Trails System Act (Section 7(f)) includes specific authorities that allow for larger ("whole tract") land purchases and for disposal of lands located outside of the area of trail acquisition with proceeds from such disposal credited to the land acquisition account (16 U.S.C. 1246(f)).

Cons of Land Purchase

- Some landowners may not be willing to sell their land in fee title. However, they may be willing to grant an easement, or complete a land exchange.
- Land purchases require obtaining an appraisal that meets federal standards.
- Some landowners may not accept the results of the appraisal, which means the entire purchase proposal could be lost in some cases.
- Despite the increase in funding for land purchases, Land and Water Conservation Fund Act funding is limited, and each project is evaluated on its merits. Competition for this funding source is high.
- Land purchases need to be designed to protect the national trail planning corridor. There may not be a perfect fit. In many cases, the Forest Service may need to purchase more lands than are needed to protect the trail. Or in some cases, the landowner may not be willing to sell the lands that are needed. The National Trails System Act (Section 7(f) includes specific authorities that allow for larger ("whole tract") land purchases and for disposal of lands located outside of the area of trail acquisition with the proceeds for such disposal credited to the land acquisition account (16 U.S.C. 1246(f)).
- There is always an element of risk and uncertainty with securing funding and obtaining an appraisal that is acceptable to the landowner and the Forest Service.
- When acquiring land outside of existing federally managed areas, the agency could be left with difficult-to-manage fee-owned parcels. There may be times when the agency doesn't want to own the fee estate, but an agreement or easement may be appropriate.

Anticipated Effectiveness for the AZNST

It is anticipated that fee title land purchases will be a high priority and widely used tool.

Potential Role for Partners

More than any other option, third-party partners often have a strong interest in working with landowners and the Forest Service to complete land purchases. Conservation partners can add flexibility, move quickly, and build public support. Non-government partners can sometimes work more effectively with landowners than a federal agency, and they can help tackle difficult title issues working with the landowners and title companies. Conservation partners can share costs with the Forest Service, such as contracting for appraisal and hazmat reports.

Land Donation

Summary

Acquiring private lands in fee title by voluntary donation from willing private landowners is a viable tool that is available to the Forest Service for acquiring and protecting lands along the

National Trails System. When a landowner voluntarily offers to donate land, if title to the property is acceptable, and the land is free of hazardous substances, the Forest Service should make it high priority to follow through and complete the donation in a timely manner.

Two main differences between a land purchase and land donation are:

- donations do not require an appraisal, and
- donations do not require purchase funding.

A landowner may be motivated to donate land to help establish and protect the national scenic trail to receive an IRS tax credit for land donation, or to help permanently conserve their land for its wildlife, scenic and other resource values. In this case, the Forest Service does not provide an appraisal for tax donation purposes. A typical Forest Service land donation will take from 1 to 1½ years to complete after the trail and corridor are designed.

For any Forest Service land donation to be successful, the key elements include:

1. The landowner is willing to voluntarily donate the land to the United States.
2. The property has acceptable title and is free of hazardous substances.
3. Acquiring the property is compatible with Forest Service management goals and objectives for the adjacent or nearby National Forest System lands.
4. The Forest Service is not allowed to accept donated lands from a list of prohibited sources.

Primary Authorities

The National Trails System Act of October 2, 1968 (P.L. 90-543, as amended) grants specific and broad authorities to the Federal agencies to acquire lands and interests in lands by written cooperative agreement, donation, purchase, or exchange. The National Trails System Act should be considered the primary authority for the AZNST. Acquisition documents should cite this authority and other authorities as appropriate.

In addition to the National Trails System Act, the Forest Service has other authorities to acquire lands by voluntary donation. The Forest Service often relies on these two acts:

- Act of October 10, 1978 (92 Stat. 1065; 7 U.S.C. 2269), and the Act of June 7, 1924 (43 Stat. 653; 16 U.S.C. 569)
- Federal Land Policy and Management Act of 1976

Base land donations on approved land and resource management, landownership, and composite plans. At the time of preparing this plan, the existing land management plans (forest plans) for the national forests which host the AZNST do not provide land acquisition direction and guidance specific to the AZNST. Until such time as these forest plans are revised or amended, look to this comprehensive plan for the AZNST to inform the acquisition of lands and interests in lands along the AZNST.

Forest Service Direction and Policy

Direction and guidance for land purchases and land donations can be found in:

- Forest Service Manual 5420

- Forest Service Handbook 5409.13

Base land donations on approved land and resource management, landownership, and composite plans. At the time of preparing this plan, the existing land management plans (forest plans) for the national forests which host the AZNST do not provide land acquisition direction and guidance specific to the AZNST. Until such time as these forest plans are revised or amended, look to this comprehensive plan for the AZNST to inform the acquisition of lands and interests in lands along the AZNST.

Pros and Cons

Pros of Land Donation

- Fee title land acquisitions, whether by donation, purchase, or exchange, are the most effective tool in ensuring long-term protection of national scenic trails.
- In fee title land acquisitions, the United States acquires the permanent rights to manage the land consistent with the goals and objectives of the AZNST and the forest plans.
- Landowners (donors) do not typically retain rights on the land.
- Conservation organizations may be willing to partner with the Forest Service in land donations, especially where there are substantial public values and resources.
- Forest Service land donations (like purchases) are categorically excluded from NEPA and not subject to public appeal or protest.
- The process of completing Forest Service land donations is relatively simple.
- Donations are typically the fastest and easiest method to acquire lands.
- Donations do not require purchase funds and do not require an appraisal. However, donations still require funds for case processing, such as title and closing expenses.

Cons of Land Donation

- Most landowners expect to be compensated by the government for their land, either by selling their land at appraised value or by exchanging their land for other federal lands.
- Relatively few landowners are willing to donate their lands.
- In comparison to land purchases, conservation partners are often less inclined to partner with the Forest Service in land donations.
- The Federal government cannot solicit donations so any landowners must voluntarily bring forward a proposal to donate.

Anticipated Effectiveness for the AZNST

Acquisition of private lands by voluntary donation should be very high priority for the Forest Service, whenever that opportunity presents itself, provided title is acceptable and the acquisition is consistent with management goals and objectives. However, it is anticipated that land donations will not be widely used for the AZNST, simply because most private landowners expect to be compensated, either by purchase or exchange for other lands.

Potential Role for Partners

Third-party partners often have less interest in working with landowners and the Forest Service to complete land donations versus land purchases, but there are important exceptions. For example,

if a land donation is part of a larger conservation project, such as a land purchase with a donation component, conservation partners will often have a stronger interest. If the donation is large scale and there are substantial resource and public values, then potential partners may have more interest.

Conservation partners sometimes acquire private lands and then transfer title to the United States (Forest Service) through a combination of land purchase (appraised value) and land donation. The land donation may be considered very good public relations for the partner, and it may be important for their membership and donors.

Landowners sometimes contact a conservation group, such as The Nature Conservancy or the Rocky Mountain Elk Foundation, to express an interest in donating their land for conservation purposes and tax purposes. In those cases, the conservation group may contact the Forest Service about the donation, and they may be willing to cooperate and assist in completing the project, such as sharing the costs with the Forest Service.

Partners may be able to provide tax incentives or assurances to landowners that the Forest Service cannot guarantee.

Land Exchange

Summary

A land exchange is a voluntary real estate transaction between the Federal government and a non-Federal party and may be initiated by either party. A non-Federal party may be a person, State, or local governmental entity.

A land exchange involves the acquisition of non-Federal land, or interests in land (such as trail easements or conservation easements), by the United States in exchange for equal value National Forest System lands or interests in land. Land exchanges adjust ownership patterns to support direction in forest management plans and to create more efficient and effective ownership patterns.

Land exchange is an effective tool to acquire private lands or interests in private lands. Land exchanges should be carefully considered and evaluated as a tool available to use in acquiring and protecting lands along the AZNST.

Forest Service land exchanges are relatively complex, time consuming and costly to complete, in comparison to land purchases and land donations. A typical Forest Service land exchange will often take 5 to 10 years or more to complete. Land exchanges may involve preparing an Environmental Impact Statement (EIS) and Record of Decision or an Environmental Assessment (EA), Decision Notice and Finding of No Significant Impact (FONSI). Land exchanges require full public participation and agency decisions are subject to appeal or protest and litigation.

Land exchanges typically require completion of appraisals to federal standards, both for the Federal lands and the non-Federal lands. The federal and non-federal lands must be equal in value based on the approved appraisals or made equal in value with a cash equalization payment.

Partial interests in land may be acquired when it is in the public interest to do so. For the AZNST, the Forest Service could consider an exchange of National Forest System lands to acquire private lands, or trail easements, or conservation or scenic easements.

Primary Authorities

The National Trails System Act of October 2, 1968 (P.L. 90-543, as amended) grants specific and broad authorities to the Federal agencies to acquire lands and interests in lands by written cooperative agreement, donation, purchase, or exchange. The National Trails System Act should be considered the primary authority for the AZNST. Acquisition documents should cite this authority and other authorities as appropriate.

In addition to the National Trails System Act, the Forest Service normally uses the following authorities for considering land exchanges:

- General Exchange Act of March 20, 1922 (P.L. 67-173; 42 Stat. 465 as amended). This Act authorizes the exchange of land or timber that was reserved from the public domain for National Forest System purposes. The non-federal land must be within the same State and within the exterior boundary of a national forest or within an area covered by the provisions of the act. The Bureau of Land Management must concur in the valuation and conveyance of minerals. Either party may make reservations when in the public interest as provided in 36 CFR part 254, FSM 5403.1, and FSM 5430.3.
- Federal Land Policy and Management Act of October 21, 1976 (P.L. 94-579; 90 Stat. 2743). FLPMA amended the General Exchange Act. FLPMA requires that land exchanges must be conducted with US citizens, must be within the same State, must be of equal value, and may be equalized with cash. Section 205 authorizes the exchange of land and interests in lands **for the purpose of acquiring access across non-Federal lands** to units of the National Forest System. Section 206(d) requires use of an Agreement to Initiate (ATI) for land exchanges.
- Federal Land Exchange Facilitation Act of 1988 (Stat. 1086 as amended 43 U.S.C. 1716, 751). FLEFA also amended the General Exchange Act.
- Weeks Act of March 1, 1911 (36 Stat. 961 as amended; 16 U.S.C. 516). This act authorizes the exchange of National Forest System land that has Weeks Law (acquired land) status.

Regulations governing the exchange of National Forest System lands are at Title 36, Code of Federal Regulations, part 254, subpart A (36 CFR part 254, subpart A).

Forest Service Direction and Policy

Direction and guidance for land exchanges can be found in:

- Forest Service Manual 5430 – Land Exchanges
- Forest Service Handbook 5409.13 – Chapter 30 - Exchanges

The objective of the Forest Service land exchange program is to utilize land exchanges as a tool, in concert with the purchase program, to implement forest land management planning and direction; to optimize National Forest System landownership patterns; to further resource protection and use; and to meet the present and future needs of the American people (Forest Service Manual 5430 – Land Exchanges).

Policy: Consider only those land exchange proposals that are consistent with forest land management plans (36 CFR part 219).

Consider a land exchange only if it is in the public interest and is consistent with the forest land management plan. Identify potential concerns or issues involving cultural resources, threatened

and endangered species, floodplains, wetlands, hazardous materials, mineral estates, and other outstanding rights early in the process.

Unless otherwise provided by law, all land exchange cases shall be processed in accordance with Forest Service regulations at 36 CFR, part 254, subpart A.

Pros and Cons

Pros of Land Exchange

- Fee title land acquisitions, whether by exchange, purchase, or donation, are the most effective tool to ensure long-term protection of National Scenic Trails.
- In fee title land acquisitions, the United States acquires the permanent rights to manage the land consistent with the goals and objectives of the AZNST and the forest plans. Landowners do not typically retain rights on the land exchanged to the United States.
- Land exchanges can be an effective tool to acquire private lands or interests in lands, such as easements. Land exchanges should be carefully considered and evaluated as a tool available to use in acquiring and protecting lands along the AZNST.
- Limited Land and Water Conservation Fund Act or other purchase funding is needed for an exchange of lands. Land exchanges are based on equal value. On rare occasions, the Forest Service may need to pay cash equalization funds.

Cons of Land Exchange

- In comparison to land purchases, conservation partners are often less inclined to partner with the Forest Service in land exchanges.
- A typical Forest Service land exchange will often take 5 to 10 years or more to complete.
- Forest Service land exchanges are relatively complex, time consuming and costly to complete, in comparison to land purchases and land donations.
- Land exchanges may involve preparing an Environmental Impact Statement (EIS) and Record of Decision or an Environmental Assessment (EA), Decision Notice and FONSI.
- Land exchanges require full public participation and agency decisions are subject to appeal or protest and litigation. Therefore, land exchanges are subject to more risk, and there is no assurance that a land exchange proposal will be completed.
- Land exchanges typically require completion of appraisals for the Federal and the non-Federal lands. The Federal and non-Federal lands must be equal in value based on approved appraisals or made equal in value with a cash equalization payment.
- The cost of processing a land exchange can often be substantial which makes small land exchanges less viable.

Anticipated Effectiveness for the AZNST

Although land exchanges are an effective tool to acquire lands and access rights, it is anticipated that exchanges will not be widely used for the trail. The main reason is that Forest Service land exchanges are often complex, time consuming and costly to complete, in comparison to land purchases, donations and easement acquisitions. Land exchanges involve full compliance with the National Environmental Policy Act. Land exchanges require full public participation and agency decisions are subject to objection and litigation. A Forest Service land exchange may take 5 to 10

years or more to complete, and there is no assurance the exchange proposal will be completed. Despite these drawbacks, land exchanges should be carefully considered and evaluated as a tool available to use in acquiring and protecting lands along the trail.

Potential Role for Partners

Most often, the Forest Service works directly with landowners in developing and completing land exchanges. Third party partners are typically not directly involved in land exchanges. However, conservation partners often serve an important indirect role in building public and political support for a proposed land exchange.

There are some notable exceptions. For example, if a land exchange is part of a larger conservation project, such as a land purchase with an exchange component, conservation partners may have a stronger interest. If the proposed exchange has substantial resource and public values, then potential partners may have more interest.

Landowners sometimes contact a conservation group to express interest in conserving their land for conservation purposes, through a purchase, a donation or land exchange. In those cases, the conservation group may contact the Forest Service. The Forest Service and the landowner may reach an agreement to pursue a land exchange. The conservation group may be willing to cooperate and assist in completing the exchange.

Trail Easements

Summary

An easement is a partial interest in land that entitles the holder (in this case the United States) the right to use land owned by another party for a particular purpose.

In the Forest Service "Rights-of-Way Acquisition program", the agency acquires linear (road and trail) easements from willing landowners. Easements are often acquired by purchase, or voluntary donation, or by a reciprocal exchange of easements of similar value. In some cases, easements can also be acquired by the United States in land exchanges.

Easements acquired by the Forest Service are normally perpetual, "assignable" to other entities, and "exclusive". An exclusive easement grants jurisdiction to the holder (United States). An "assignable" easement contains language that allows for potential transfer of the easement from the Forest Service to a cooperating agency or entity, such as a state or county.

Primary Authorities

The National Trails System Act of October 2, 1968 (P.L. 90-543, as amended) grants specific and broad authorities to the Federal agencies to acquire lands and interests in lands by written cooperative agreement, donation, purchase, or exchange. The National Trails System Act should be considered the primary authority for the AZNST. Acquisition documents should cite this authority and other authorities as appropriate. The AZNST was designated by Congress as a National Scenic Trail through the Omnibus Public Lands Management Act of 2009 (P.L. 111-11), which amended the National Trails System Act.

In addition to the National Trails System Act, the Forest Service normally uses the following authority to acquire access over non-Federal lands:

- Federal Land Policy and Management Act of October 21, 1976 (FLPMA), Sec. 205
- Notwithstanding any other provisions of law…the Secretary of Agriculture, with respect to the acquisition of access over non-Federal lands to units of the National Forest System, are authorized to acquire pursuant to this Act by purchase, exchange, donation, or eminent domain, lands, or interests therein.
- The Federal Regulations for Section 205 of the Federal Land Policy and Management Act are in 36 CFR 212.

Forest Service Direction and Policy

Direction and guidance for acquiring road and trail easements can be found in:

- Forest Service Manual 5460 – Rights of Way Acquisition
- Forest Service Handbook 5409.17 – Rights of Way Acquisition

Pros and Cons

Pros of Trail Easements

- Landowners may not want to sell their land or any portion of it, but they may be willing to grant an easement for a trail. Acquiring an easement may be the best option in that situation.
- Easements can often be acquired at minimal cost by voluntary donation or by a reciprocal exchange of easements. Purchasing easements is usually less costly than purchasing land in fee title. The Forest Service (regional forester and forest supervisors) has authority to negotiate and pay above appraised value for access easements.

Cons of Trail Easements

- Easements are partial interests. Landowners retain the rights to manage their private lands as they see fit, provided they do not interfere with the easement.
- Some private land uses, such as residential development or timber harvest, may not be compatible with the goals of the AZNST.
- Future owners of the private lands might not recognize or want an easement encumbering their property. Future owners might want the easement moved off their property, or they might try to close the trail.
- Purchased easements require obtaining an appraisal (or in some cases an “appraisal waiver”) that is acceptable to both parties.

Anticipated Effectiveness for the AZNST

It is anticipated that acquisition of trail easements will be a widely used tool for the AZNST. The Forest Service can acquire permanent trail easements from willing landowners, and from other entities such as state agencies, by four methods: purchase, donation, a reciprocal exchange of easements, or as part of a land exchange. All four methods are available for the AZNST. Most trail easements will likely be purchased or donated.

Potential Role for Partners

Typically, the Forest Service works directly with private landowners and other agencies to establish perpetual trail easements and to resolve mutual access needs. Conservation partners are

normally not directly involved in acquiring trail easements, but there are some exceptions. The AZNST may be one of those important exceptions.

Conservation partners and cooperators may be willing to contribute funding for purchase of trail easements, or to contribute funding to assist the Forest Service in processing the cases, such as paying for a survey, appraisal, or title insurance. These entities may also play an important part in formulating trail and corridor design with landowners.

Cooperating entities that own and manage lands crossed by the AZNST, such as state, county, municipal, and Tribal governments, may be willing to grant and donate permanent trail easements to the Forest Service for the AZNST.

Private landowners, including timber industry owners, that own and manage lands crossed by the AZNST, may be willing to sell or donate permanent trail easements to the Forest Service for the AZNST. Some landowners, including timber industry, may want to exchange access easements with the Forest Service. For example, a timber industry landowner may want to acquire road easements across National Forest System lands and in turn, grant trail easements for segments of the AZNST to the United States. Some landowners may be interested in a land exchange, in which the United States conveys National Forest System lands, and, in exchange, the United States acquires trail easement(s) for the AZNST.

Conservation Easements

Summary

A conservation (or scenic) easement is a tool designed to permanently protect and conserve private lands without acquiring those lands in fee title. The landowner retains title to the property and continues to use the property subject to the provisions of the conservation easement. A conservation easement is a voluntary legal agreement between a landowner and a public agency, such as the Forest Service, a state, or a qualified 501(c)3 non-profit conservation organization such as The Nature Conservancy or Rocky Mountain Elk Foundation. Conservation easements may be acquired by purchase, bargain sale or donation.

Under the National Trails System Act, national scenic trails are established to conserve significant scenic, historic, natural, or cultural qualities of the area through which such trails may pass.

Conservation easements permanently prohibit (or restrict) residential or commercial development, and land uses or practices that would be harmful to the agricultural, wildlife, scenic, or other important land values. A conservation easement is negotiated on a case-by-case basis and recorded in the public records. A conservation easement remains in effect regardless of future changes in land ownership.

Conservation easements from willing landowners such as the Borderlands Wildlife Preserve which provides connection for the AZNST over private lands between the borders of the Coronado National Forest (Highway 82 crossing north of Patagonia/Canelo Hills West, Passage 3).

Some landowners want to be compensated for limiting future development of their property. A conservation easement extinguishes development rights.

Some landowners choose to negotiate a “bargain sale”. In a bargain sale, landowners are compensated for a portion of the value of their development rights, and they may take tax deductions for donating the remaining value. A “bargain sale” is not unique to conservation easements. Some landowners may also choose to negotiate a bargain sale in a fee title purchase and donate the remaining land value.

When the Forest Service purchases a conservation easement, the value of the easement must be determined by a qualified appraiser, and the appraisal must meet federal standards. The appraised value of purchased conservation easements can be as high as 80 percent to 90 percent of the fee value of the property.

Under federal law, the value of a donated conservation easement can generally be treated as a charitable donation. When the Forest Service acquires a conservation easement by donation from a willing landowner, the agency does NOT participate in the appraisal process for IRS charitable donations.

Important notes:

- A conservation easement does not necessarily provide for public recreational access, although many conservation easements do allow limited public access.
- A conservation easement does not need to cover the entire property, it can be designed to protect only a portion of the property.
- A conservation easement does not need to preclude all development. A landowner may reserve certain rights, such as the right to build a road or a cabin.

Primary Authorities

The National Trails System Act of October 2, 1968 (P.L. 90-543, as amended) grants specific and broad authorities to the Federal agencies to acquire lands and interests in lands by written cooperative agreement, donation, purchase, or exchange. The National Trails System Act should be considered the primary authority for the AZNST. Acquisition documents should cite this authority and other authorities as appropriate.

In addition to the National Trails System Act, the Forest Service uses the following authorities to acquire conservation and scenic easements:

- Department of Agriculture Organic Act, August 3, 1956. (70 Stat. 1034; 7 U.S.C. 428a). This Act provides authority for the acquisition of partial interests outside areas containing specific legislative authority. Partial interests can be acquired whenever necessary to carry out the authorized work of the Forest Service, provided provision is made in the applicable appropriations act or other law.
- Weeks Law, Act of March 1, 1911, as Amended. (36 Stat. 961, as amended).
- 16 U.S.C. 480, 500, 513-517, 517a, 518, 519, 521, 552, 563). The Weeks Law provides authority to purchase partial interests to protect the watersheds of navigable streams or promote the production of timber. Prior approval by the Secretary of Agriculture must be obtained for all Weeks Act acquisitions. Congressional oversight is required for interests valued at more than $25,000.
- Endangered Species Act of December 28, 1973 (87 Stat. 884 as amended).

- The Federal Land Policy and Management Act of 1976 (P.L. 94-579) allows the Secretary of Agriculture to acquire interests in land (including conservation easements) by exchange.
- The Land and Water Conservation Fund Act is the primary funding authority available to the Forest Service and the States to purchase lands and conservation easements. Each fiscal year, Congress appropriates Land and Water Conservation Fund Act funds to the federal and state agencies for land conservation projects.

The Forest Legacy Program was established in 1990 through an amendment to the Cooperative Forestry Assistance Act of 1978 (16 USC 2101 et seq.). The Forest Legacy Program is an effective conservation program administered by the Forest Service (State and Private Forestry) in partnership with State agencies to encourage the protection of privately owned forest lands.

The Forest Legacy Program uses both fee simple land purchases and conservation easements to protect forest areas from development and fragmentation to ensure conservation of important public benefits that forests provide. The Forest Legacy Program is implemented by the Forest Service as a grant program with State agencies, and those State agencies hold the interest in the land acquired with Forest Legacy Program funds. The program operates on a willing buyer-willing seller basis. Projects are selected through a competitive process – first at the state level and then at the national level. By providing economic incentives to private landowners, the program encourages “working forests” and sustainable forest management. Under the Forest Legacy Program, conservation easements restrict development, limit uses that impact the conservation values, and require adherence to a Multi-Resource Management Plan to protect resource values. The Forest Legacy Program was established in 1990 through an amendment to the Cooperative Forestry Assistance Act of 1978 (16 USC 2101 et seq.). Forest Legacy Program Implementation Guidelines (Forest Service-1088, May 2017) are available. The Forest Legacy Program is funded by the Land and Water Conservation Fund. A portion of the annual funding is set aside for the Forest Legacy Program and made available to the States. Since its creation in 1990, the Forest Legacy Program has conserved more than 2.8 million acres of forest land. Each state has a Forest Legacy program manager.

Forest Service Direction and Policy

Direction and guidance for acquiring conservation easements can be found in:

- Forest Service Manual 5440 – Partial Interests (except Right-of-Way Acquisition)
- Forest Service Handbook 5409.13 – Land Acquisition Handbook
- Forest Legacy Program Implementation Guidelines – Forest Service 1088, May 2017

The Objectives of partial interest acquisitions (Forest Service Manual 5440) are to:

1. Provide for acquisition of only those interests in land necessary to meet planned program objectives.
2. Provide for continuance of private land uses, which are consistent with planned program objectives.

The national policies for partial interest acquisition (Forest Service Manual 5440) are to:

1. Acquire only those interests in land necessary to provide for planned management needs, as jointly agreed by Federal Agencies in "Policy for Use of the Federal Portion of the Land and

Water Conservation Fund" published in the Federal Register, Volume 47, No. 89, Friday, May 7, 1982.

2. Base decisions to acquire partial interests on approved forest land management plans or, in the interim, landownership adjustment plans. At the time of preparing this plan, the existing land management plans (forest plans) for the national forests which host the AZNST do not provide land acquisition direction and guidance specific. Until such time as these forest plans are revised or amended, the AZNST comprehensive plan should inform consideration of partial interest acquisitions.
3. Consider less-than-fee interests, as well as reservations for life or term of years, when a property contains substantial improvement value, and the continued use of the property will not adversely affect the management objectives for the area.
4. The regional forester shall approve acquisition of conservation easements and other partial interests. The Regional Attorney (Office of General Counsel) assists in the preparation of the conveyance document.

Pros and Cons

Pros of Conservation Easements

- For private lands located outside the boundaries of the National Forests or other Federal land areas, a conservation easement may be the preferred method to protect the AZNST, as opposed to fee title land acquisition.
- Acquiring a conservation easement (or other partial interest such as a trail easement) may be the only opportunity available to protect the AZNST, if the landowner is unwilling to convey private lands in fee title.
- In some situations, conservation easements (or other partial interests) may be more politically supportable vs. fee title land acquisition.
- When conservation easements are acquired, the property stays in private ownership, and it remains on the property tax rolls.
- Conservation easements are flexible tools, that can and should be tailored to fit each situation.
- Even though conservation easements are not a favored tool for the Forest Service, they may be a useful tool for trail segments on private lands outside the boundaries of Federally administered areas. Such conservation easements could be held by land trusts, states, or other qualified entities, rather than by the Forest Service. The Forest Legacy Program may be a useful tool for the States to consider for conservation of private forest lands along the AZNST.

Cons of Conservation Easements

- Easements are partial interests. Landowners retain the rights to manage their private lands as they see fit, provided they do not interfere with the easement.
- Some “reserved” private land uses, such as mineral exploration or mining and grazing, may not be compatible with the goals of the AZNST.
- Future owners of the private lands may not want the conservation easement to encumber their property, even though the easement is permanent. Future owners may want the easement to be extinguished or amended to fit their desires for use of the property even though such

changes are unlikely. This situation may set up conflict on "jointly owned" lands making administration difficult for the easement holder.

- Monitoring and administering a conservation easement require funding and staffing. It is a permanent responsibility and commitment for the agency. There is no assurance that future funding will be available for this purpose.
- Administration can be costly, contentious, and litigious, particularly with future owners or heirs who may not be familiar with the terms of the easement.
- The Forest Service often does not have staff who are trained and experienced working with conservation easements.
- Forest Service case files and records of conservation easements may be difficult to locate and access, making it very difficult for new staff to administer the easement. (Easements are recorded in the public records of the county.)
- Purchased conservation easements require obtaining an appraisal that meets federal standards and is acceptable to both parties. Purchasing a conservation easement can be expensive, often as high as 80 percent to 90 percent of the fee value.
- Federal funding for purchasing a conservation easement is not assured.
- Conservation easements may or may not allow for public access. For the AZNST, this is a critical concern. Public use of the actual trail tread and sufficient land to provide for reasonable public use may need to be protected through a trail easement or fee title acquisition that ensures public access. Using a "layered" approach, the land area surrounding the national trail planning corridor could then be protected with a conservation easement.
- Conservation easements held by third parties may preclude the Forest Service's ability to later acquire fee interest in the property.

Anticipated Effectiveness for the AZNST

It is difficult to predict the effectiveness of conservation easements for the AZNST. It is anticipated that fee title land acquisitions (purchases, donations and land exchanges) are preferred over conservation easements. The Forest Legacy Program may be an exception.

There will be some cases, especially outside of National Forests and other federal land areas, where acquiring conservation easements may be an effective tool for the AZNST. There will likely be other situations, including cases within the boundaries of federal land areas, where a private landowner is not willing to convey land in fee title, but that landowner may be willing to grant a conservation easement.

To some extent, the effectiveness depends on the specific negotiations with individual private landowners. For example, are the landowners willing to convey lands in fee or grant public access rights?

Industry landowners may be willing to sell or donate conservation easements. Conservation partners, including The Trust for Public Land and The Nature Conservancy, have been instrumental in securing these conservation easements. Funding has often come from the Forest Legacy Program. It should be noted that continued industrial activity and management may not meet the resource protection for the AZNST.

Even though conservation easements are not a favored tool for some Forest Service regions, conservation easements may still be a used for trail segments on private lands located outside the national forest boundaries. These conservation easements could be held by land trusts, states, or other qualified entities other than the Forest Service. In that respect, the Forest Legacy Program may be a useful tool and funding source for the states to consider.

Potential Role for Partners

Conservation partners often have a strong interest in working with landowners to complete conservation easements. In some cases, the conservation partner may be willing to acquire and administer the easement. This is particularly the case for national conservation organizations such as The Nature Conservancy and Rocky Mountain Elk Foundation, as well as for local land trusts who focus on acquiring conservation easements in a certain geographic area.

Conservation partners can add flexibility, they can move quickly, and they can build public support and lobby for funding. Partners can sometimes work more effectively with landowners than a federal agency. They can help with negotiations regarding specific provisions in a conservation easement. They can also help resolve title issues working with the landowners and title companies. Conservation partners can share costs with the Forest Service, such as contracting for appraisal and hazmat reports. In some cases, the conservation partner can administer the easement.

The Arizona Trail Association may serve an important role in acquiring conservation easements along the AZNST. In the future, the Arizona Trail Association may be willing to assist the Forest Service and other agencies in monitoring and administering the conservation easements.

Conservation easements held by third parties may preclude the Forest Service's ability to later acquire fee interest in the property.

Cooperative Agreements

Summary

The term "cooperative agreements" includes the full spectrum of written agreements used by the Forest Service to document a framework for cooperation between the agency and other parties (public agencies, private entities, institutions, and individuals) that are mutually beneficial to the cooperating parties and that enhance Forest Service programs and activities.

This section focuses on the use of cooperative agreements to provide for land protection along the Arizona Trail[30]. Cooperative agreements are well established as a tool for National Scenic Trails across the country.

Cooperative agreements are fundamentally different from the other methods and tools. Cooperative agreements do not involve the acquisition of real property (lands or easements). Cooperative agreements are voluntary in nature, they are not contractual or binding on either party. Most types of cooperative agreements have a fixed term after which they expire, and they may be terminated earlier by either party. They are not permanent solutions.

[30] Other purposes and types of cooperative agreements anticipated to be used along the Arizona National Scenic Trail (such as the use of Challenge Cost Share agreements for trail maintenance and monitoring, for example) are described elsewhere in the comprehensive plan.

Although the Forest Service prefers to use the land and easement acquisition tools to ensure full and permanent protection of National Scenic Trails, cooperative agreements do serve a useful purpose, and are an appropriate tool in some situations. In total, more than 80 percent of the AZNST crosses Federal, State, county, and City lands. This landownership pattern lends itself to use of cooperative agreements. Cooperative agreements are likely to be used to document cooperation for management of the AZNST where it crosses lands managed by other Federal, State, and local government entities.

There are two primary categories of cooperative agreements the Forest Service anticipates using to facilitate land acquisition: (1) memoranda of understanding, which does not involve funding and (2) other types of agreements, which may have funding involved.

Memorandum of Understanding (MOU)

A Memorandum of Understanding (MOU) is used to document a framework for cooperation between the Forest Service and other parties for carrying out separate activities in a coordinated and mutually beneficial manner where nothing of value transfers between parties. This is often viewed as a "handshake agreement." Each party directs its own activities and uses its own resources and funding.

An MOU may not be used to exchange funds, property, services, or anything of value. Each party directs its own activities and uses its own resources. If funding for specific projects is contemplated in an MOU, that funding must be authorized under a separate funding instrument utilizing a specific authority. Care should be taken to avoid language in an MOU that may be construed as committing the Forest Service to a future obligation or an enforceable contract.

Some MOUs contain an expiration date, which limits their effectiveness in long term management of the AZNST. Many MOUs don’t have an expiration date, which is more effective for long term management. MOUs should be reviewed periodically to validate their continued need.

In the National Trails System, MOUs are commonly used to document cooperation between the trail’s administering agency (Forest Service) and other federal agencies, governments, non-profit organization like Arizona Trail Association who assist with management of the trail, and private landowners that host and manage sections of the trail on their lands.

The primary purpose of these MOUs is to document:

1. Parties’ mutual acknowledgment that one or more sections of the trail is located on lands owned or managed by an entity other than the trail administering agency, and
2. Framework for coordination and cooperation in management of those sections of the trail.

The Forest Service, National Park Service, Bureau of Land Management, and Arizona State Parks drafted a MOU in 2022 to facilitate interagency cooperation for trail activities. The MOU identifies roles and responsibilities of the agencies and reaffirms the responsibility of the agencies to administer and manage the trail across jurisdictional boundaries.

A trail administering agency will also commonly use MOUs (or, in some situations, Memoranda of Agreement (MOAs)) to document cooperation with other land management agencies to facilitate location and management of the trail on lands managed by those other federal agencies.

The Florida National Scenic Trail offers good examples of MOUs the Forest Service holds with a range of non-federal government parties, including state agencies (such as Florida Forest Service and Florida Department of Agriculture and Consumer Services), local governments (like Osceola County), and private landowners (for example, Putnam Land Conservancy) to facilitate location and management of the trail on those parties' lands.

Agreements with funding involved such as Interagency Agreements, Challenge Cost-Share Agreements, and Participating Agreements

There are several different agreement types that may be used when funding is involved, such as if money, property, services, or anything of value would be exchanged, transferred, or leveraged (for example, Federal money matched with non-Federal funds, materials, labor, equipment, or land and water). The appropriate agreement type depends on the parties, authorities, and funding involved and the nature of the work (such as where work occurs) and the types of benefits expected.

For the Forest Service, some agreement types commonly used in administration and management of national scenic trails include:

- Challenge Cost-Share Agreements are available for a term of up to five years and require recipients to match Federal money with non-Federal cash, real or personal property, services, or in-kind contributions, such as volunteer labor.
- Interagency and Intra-agency Agreements are used when one agency is providing payments, goods, or services to another agency or when internal Forest Service programs collaborate.
- Participating agreements are used when the Forest Service and its partners wish to perform work from which they will accrue non-monetary mutual benefit. Activities in these agreements are generally limited to forestry protection activities, and manpower job training, Resource Advisory Council support, and work with interpretive associations. Forestry protection activities, which are described in the Forest Service's grants and agreements handbook, do not include trail construction or the operation and maintenance of trails, recreation sites, and recreation facilities, which are prohibited activities for projects under Participating Agreements.

While they could not be used to directly acquire lands or interests in lands, these types of agreements may be appropriate tools to facilitate land acquisition and protection for the AZNST. For example, cooperative agreements could be used to facilitate information gathering, mapping, and analyses that might inform land acquisition and protection efforts. Interagency agreements may allow the Forest Service to tap into specialized expertise or staff capacity from other agencies for lands and realty work relevant to the National Trails System, for example, from the National Park Service or Bureau of Land Management.

Primary Authorities

The authorities described in Forest Service Manual 1580.11 - 1580.16 are the commonly used statutory authorities for Government-wide and service-wide use. The specific authority to use in each case is determined by several considerations, including the type of work to be completed,

the cooperating parties, which party is performing the work, the location of the work to be completed, and (if appropriate) the type(s) of funding involved.[31]

The National Trails System Act of October 2, 1968 (P.L. 90-543, as amended) grants specific and broad authorities to the Federal agencies to acquire lands and interests in lands by written cooperative agreement, donation, purchase, or exchange. The AZNST was designated by Congress as a National Scenic Trail through the Omnibus Public Lands Management Act of 2009 (P.L. 111-11), which amended the National Trails System Act. If the National Trails System Act is unable to be used as the sole or primary authority for the agreement and a different authority is cited as the primary authority, consider also citing the National Trails System Act as appropriate.

Forest Service Direction and Policy

Direction and guidance for cooperative agreements can be found in:

- Forest Service Manual 1580
- Forest Service Handbook 1509.11

Pros and Cons

Pros of Cooperative Agreements

- Cooperative agreements are a useful tool to document a framework for cooperation between the agency and other parties that are mutually beneficial and that enhance Forest Service programs and activities.
- Cooperative agreements do not involve the acquisition of real property. There is no long-term obligation by the agency to manage any acquired lands and easements.
- Cooperative agreements do not require funds for land or easement acquisition.
- Although the Forest Service prefers to use the conventional acquisition tools to ensure permanent protection of the AZNST, cooperative agreements are an appropriate tool in some situations.
- The Forest Service and other cooperating agencies frequently enter into cooperative agreements with non-profit trail associations to facilitate the development and maintenance of the National Scenic Trails.
- The Forest Service can enter into voluntary cooperative agreements with other Federal agencies and with State, county, and municipal governments, in cases where those government entities may NOT want to convey lands or easements.
- A private landowner may be interested in protecting the AZNST but may not be willing to convey private lands or easements. In some cases, the same landowner may be willing to enter into a cooperative agreement.
- More than 80 percent of the AZNST crosses Federal, State, county, municipal and tribal lands. This landownership pattern lends itself well to use of cooperative agreements.
- A broad spectrum of authorities is available to the Forest Service to develop and implement cooperative agreements.

[31] For more information, see https://www.fs.usda.gov/sites/default/files/prc-agreement-instruments_0.pdf

- The Forest Service has a cadre of trained Grants and Agreement Specialists to assist in developing cooperative agreements.

Cons of Cooperative Agreements

- A cooperative agreement is not a real property acquisition such as a land purchase or easement, so it does not ensure any lasting protection for the trail.
- A cooperative agreement is not binding, not a contract, and not permanent in nature. Either party can elect to terminate the agreement at any time.
- A cooperative agreement is only valid for a specified time, normally 5 years or less, and then it terminates unless the parties take steps to extend or renew it.
- Cooperative agreement must be developed following a rigid set of policies and procedures. Depending on their workload, agency priorities, and timing in relation to cut-off deadlines, grants and agreements specialists may not always be available to assist with a cooperative agreement for the AZNST.
- Most Forest Service land and realty staff have only limited expertise and experience with cooperative agreements. There is a steep learning curve.
- There tends to be reluctance by some Forest Service lands and realty staff to use cooperative agreements, especially when other tools such as land and easement acquisition are available.
- Some potential cooperators and partners may not want to adhere to the rigid Forest Service policies and procedures for cooperative agreements.
- Developing a cooperative agreement takes time and effort, both for the Forest Service (program manager and grants and agreements specialist) and the cooperator. Despite this time and effort, the agreement will only remain in effect for 5 years or less.
- Specific agency policies and procedures for cooperative agreements vary by region and they are subject to change and revision on a regular basis.

Anticipated Effectiveness for the AZNST

Although Forest Service preference is to use land and easement acquisition to ensure permanent protection of the AZNST, cooperative agreements do serve a useful purpose, and they are an appropriate tool in some situations. It is anticipated that cooperative agreements will be used extensively for the AZNST, particularly where the AZNST crosses lands managed by other Federal, State, and local government entities. In total, more than 95 percent of the trail crosses Federal, state, county, and city lands. This landownership pattern lends itself well to use of cooperative agreements.

Potential Role for Partners

Non-government partners can sometimes work more effectively with landowners than a federal agency, and they can help tackle difficult issues working directly with landowners. Partner organizations can also share costs with the Forest Service.

Trail organizations, including the Arizona Trail Association, have a strong interest in partnering with the Forest Service to assist in locating, developing, and maintaining the National Scenic Trails. Trail organizations have staff and volunteers who can effectively assist the Forest Service in managing and protecting the trail. Through an existing Challenge Cost Share Agreement, the

Forest Service is cooperating with the Arizona Trail Association in the management and maintenance of the trail along with supporting stewardship, education, and youth programs.

Summary – Methods and Tools

Table 41 provides a summary of the anticipated effectiveness of the methods and tools for acquiring and protecting lands along the Arizona National Scenic Trail.

Table 41. Anticipated effectiveness of methods and tools for land acquisition and protection.

Method or Tool	Anticipated Effectiveness for Acquiring and Protecting Lands
Land Purchase	It is anticipated that fee title land purchases will be a high priority and widely used tool to acquire lands and access.
Land Donation	It is anticipated that land donations will not be utilized widely, simply because most private landowners expect to be compensated, either by purchase or exchange for other lands. Acquisition of lands by voluntary donation should be very high priority, provided title is acceptable and the acquisition is consistent with management goals and objectives.
Land Exchange	It is anticipated that exchanges will not be widely used to acquire lands and access. The main reason is that Forest Service land exchanges are often complex, time consuming and costly to complete, in comparison to other methods. Despite these drawbacks, land exchanges should be carefully considered as a tool.
Trail Easements	Acquisition of trail easements will likely be a widely used tool to acquire perpetual access rights. The Forest Service and other agencies can acquire trail easements from willing landowners, and from other entities, by purchase, donation, reciprocity, or as part of a land exchange.
Conservation Easements	Conservation easements will likely be much less widely used, in comparison to fee title land acquisitions. Outside of Federal land areas, conservation easements may be an effective tool. Within Federal land areas, there will be cases where a private landowner is not willing to convey land in fee title, but that landowner may be willing to grant a conservation easement. These conservation easements could be held by land trusts, states, or other qualified entities. The Forest Legacy program may be a useful tool and funding source for the states to consider in protecting segments of the AZNST.
Cooperative Agreements	Although Forest Service preference is to use methods and tools that will ensure permanent protection of the trail, cooperative agreements do serve a useful purpose, and are an appropriate tool in some situations. It is anticipated that cooperative agreements will be used extensively, particularly where the AZNST crosses lands managed by other Federal, State, and local government entities.

Strategies for Implementation

Drawing from the previous sections of this document, this section identifies and describes the recommended approach and strategies for the Forest Service (or partners) to apply to best protect the AZNST and provide for its nature and purposes and other trail values in each specific landownership situation. Based on the National Trails System Act and other guidance, the approach, and strategies for acquiring and conserving lands along the route of the AZNST will be different, depending on whether the lands are located within or outside the boundaries of federal land management areas.

The Forest Service should regularly coordinate with other federal agencies, private landowners, Arizona State Land Department, Arizona State Parks and Trails, and counties or municipalities along the trail to prioritize lands that are available for acquisition or cooperative agreement.

Priorities for acquisition should be determined every five fiscal years due to the time needed to process a potential acquisition or cooperative agreement.

Federal Lands

Approximately 84 percent, or roughly 680 miles, of the AZNST is located on Federal lands.

National Forests

The following strategies are recommended to protect the AZNST within the exterior boundaries of the national forests:

1. **Guiding Principles.** Follow the guiding principles described in this plan.
2. **Emphasize fee title acquisitions of private inholdings.** Within the National Forests, emphasize use of fee title acquisitions (land purchases, land donations and to a lesser extent, land exchanges) to ensure long-term protection of land areas along the AZNST.
3. **Acquire trail easements.** When it is not feasible to acquire private lands or other non-Federal lands within the National Forests in fee title, the next priority for the Forest Service should be to acquire trail easements to secure a legal right of access on the AZNST. It is essential that such easements provide for public recreational use of the trail. Once a legal right of access and public use is secured for the AZNST, conservation easements should be considered where appropriate to provide for the AZNST's nature and purposes and other trail values, such as the significant natural, historical, and cultural values (see chapter 3).
4. **Criteria to set priorities.** Apply the prioritization criteria described in this plan (or the most recent criteria, if updated) to set priorities for land acquisition and protection.
5. **Forest plans.** As opportunities arise and in accordance with current planning regulations and policies, include appropriate management direction and guidance for AZNST land acquisition and protection into the forest plans for the national forests.

National Park Service Units

The following strategies are recommended to protect the AZNST within the exterior boundaries of National Park Service units:

1. **Cooperative agreements.** As the trail administering agency for the AZNST, the Forest Service should initiate and facilitate collaboration with the National Park Service and other agencies to develop Memoranda of Understanding (MOUs) or Memoranda of Agreement (MOAs) to document coordination and communication regarding management of the AZNST.
2. **Park planning documents.** As opportunities arise and in accordance with National Park Service planning regulations and policies, the Forest Service should encourage the National Park Service to include appropriate management direction and guidance for AZNST land acquisition and protection into the general management plans or other planning documents for the five national park units.

Arizona Bureau of Land Management (BLM) Units

The following strategies are recommended to protect the AZNST across the public lands administered by the BLM:

1. **Cooperative Agreements.** As the trail administering agency for the AZNST, the Forest Service should initiate and facilitate collaboration with the BLM to develop a Memorandum of Understanding (MOU) or Memorandum of Agreement (MOA) to document coordination and communication regarding management of the AZNST across the public lands managed by the BLM.
2. **Coordinate with the BLM and State, and local governments regarding lands in the vicinity of lands administered by the BLM.** The Forest Service should coordinate with BLM to encourage state and local governments to enter into written cooperative agreements with willing landowners or acquire such lands or interest from willing landowners along the AZNST. If the state or local governments are unwilling or unable to do so, the Forest Service or BLM could pursue such cooperative agreements or acquisitions with willing landowners.
    - **Fee title acquisition of private lands in the vicinity of lands administered by the BLM.** The Forest Service should actively support and assist the BLM and other partners in efforts to acquire fee-title or easements over Arizona State Trust lands in the vicinity of the lands administered by the BLM.
3. **BLM management plans.** As opportunities arise and in accordance with BLM planning regulations and policies, the Forest Service will encourage the BLM to include appropriate management direction and guidance for AZNST land acquisition and protection into the and resource management plans for lands managed by the BLM.

Arizona State Land Department

The AZNST extends across state endowment lands, lands owned by the Arizona State Land Department (ASLD). The federal Arizona-New Mexico Enabling Act of 1910 and the Arizona Constitution identify several public entities as beneficiaries to receive proceeds from the lease or sale of millions of acres of land set aside for the State of Arizona to manage on the Beneficiaries' behalf. Unlike federal lands, these lands are not “public lands”, the state manages these lands to secure maximum long-term financial return for the beneficiaries to which the land was granted, which for these lands are K-12 public education, state universities, and other beneficiaries (Arizona School for the Deaf, the State Legislature, the Arizona State Hospital in Phoenix, the Arizona Pioneers’ Home in Prescott, the Arizona Department of Juvenile Corrections, and the Arizona State Department of Corrections). The following strategies are recommended to protect the AZNST on and in the vicinity of Arizona State Trust Lands:

1. **Fee Title Acquisition.** Prioritize purchase of State Land parcels where the AZNST currently crosses, where no protection plan exists. In priority order, Arizona State Land Department lands in Coconino County, followed by Pima County, then Pinal County. This is based on the likelihood of land to be sold for development.
2. **Cooperative agreement.** As the trail administering agency for the AZNST, the Forest Service should initiate a Memorandum of Understanding (MOU) or Memorandum of Agreement (MOA) to document coordination and communication regarding management of the AZNST on Arizona State Trust Lands.
3. **Consider the need to acquire trail easements.** In addition to cooperative agreements, the Forest Service should also approach Arizona State Land Department about acquiring trail easements to ensure a perpetual legal right of public non-motorized access on all segments of the AZNST across state trust lands.

4. **Information for planning and management.** As opportunities arise and in accordance with the state's planning regulations and policies, the Forest Service should assist Arizona State Land Department to include appropriate direction, guidance, or information for AZNST in its planning documents and maps.

Arizona State Parks and Trails

The AZNST crosses only one Arizona State Park within Oracle State Park. The following strategies are recommended to protect the AZNST on lands managed by Arizona State Parks and Trails:

1. **Cooperative Agreements.** As the trail administering agency for the AZNST, the Forest Service should initiate a Memorandum of Understanding (MOU) or Memorandum of Agreement (MOA) with Arizona State Parks and Trails to document coordination and communication regarding management of the AZNST on Arizona State Parks and Trails lands.
2. **Consider the need to acquire trail easements across State park lands.** In addition to a cooperative agreement, the Forest Service should approach Arizona State Parks and Trails about acquiring trail easements or using some other tool, if preferred by the state, to ensure a perpetual legal right of public non-motorized access on all segments of the AZNST across Arizona State Parks and Trails lands.
3. **Information for planning and management.** As opportunities arise and in accordance with planning regulations and policies for the State of Arizona, the Forest Service should assist Arizona State Parks and Trails to include appropriate direction, guidance, or information for the AZNST in the management plans and map for Oracle State Park.

County and City Lands

In total, approximately four percent of the AZNST is located on county and city lands. While the nature of these lands and trails and the management goals and policies of each county and municipality will differ, the following general strategies are recommended to protect the AZNST across the lands and trails managed counties and municipalities:

1. **Cooperative Agreements.** As the trail administering agency for the AZNST, the Forest Service should initiate Memoranda of Understanding (MOUs) or Memoranda of Agreement (MOAs) with each of the involved counties and municipalities to document coordination and communication regarding management of the AZNST on county and city lands.
2. **Consider the need to acquire trail easements.** In addition to cooperative agreements, the Forest Service should also approach each of the counties and cities about acquiring trail easements from each of these respective counties and cities using some other tool, if preferred by the parties, to ensure a perpetual legal right of public non-motorized access on all segments of the AZNST on county and city lands.
3. **Coordinate with the counties and cities regarding land acquisition plans and priorities.** The Forest Service should coordinate with each of the respective counties and cities to be apprised of their respective land acquisition plans and priorities to identify and assist with efforts that would also benefit the AZNST.
4. **Information for planning and management.** As opportunities arise and in accordance with planning regulations and policies, the Forest Service should assist each county and city

include appropriate direction, guidance, or information for the AZNST in management plans and maps.

Private Lands within Federal Land Management Areas

The National Trails System Act provides specific direction regarding the acquisition and protection of non-Federal lands within the designated boundaries of Federally administered areas. The strategies for protecting and conserving the AZNST across private lands within the proclaimed boundaries of the Federal Land Management Areas are described in prior pages of this plan. In summary, these strategies are:

1. **Fee title acquisitions.** The Forest Service should actively pursue fee title acquisition of private land inholdings along the AZNST within the designated boundaries of the four national forests.
2. **Acquire trail easements.** When it is not feasible for the Forest Service to acquire private lands in fee title within the national forests, the Forest Service should actively pursue the acquisition of perpetual trail easements across the private lands needed to secure a legal right of public use of the AZNST across the national forests.
3. **Identify potential opportunities to move the trail off private lands.** In situations where it is not feasible for the Federal agencies to acquire a private land parcel in fee, or to acquire a permanent trail easement, the Forest Service should work closely with other relevant partners to explore the feasibility of realigning or relocating the involved segment of the AZNST from private lands onto Federal lands or, if that is not feasible, onto state, county, or city lands.

Private Lands Outside of Federal Land Management Areas

The National Trails System Act also provides direction regarding acquisition and protection of National Scenic Trails outside the exterior boundaries of federally administered areas. Prior to federal agencies acquiring lands or interests in lands outside of federally administered areas, state and local agencies are encouraged to obtain lands, interests, or cooperative agreements from willing landowners for the protection of the AZNST. If state or local agencies are unwilling or unable to obtain lands, interests, or agreement from willing landowners, the Forest Service and other federal agencies can acquire such lands, interests, or agreements. For lands or partial interests acquired by the Forest Service along the AZNST that are outside of national forest boundaries, the Act allows the Forest Service to transfer management responsibilities to another federal agency, with those lands then managed under the rules and regulations of the accepting agency.

Following are the primary strategies for protecting and conserving the AZNST across private lands outside the proclaimed boundaries of the Federal Land Management Areas:

1. **Encourage state and local governments to acquire lands or interests.** The Forest Service should actively encourage state and local governments, and cooperating private entities, to acquire such private lands or interests on private lands (such as easements) from willing landowners, as needed to assure long-term protection of the AZNST.
2. **Encourage state and local governments to develop cooperative agreements.** In situations where state and local governments, and cooperating private entities are not able to acquire lands or interests needed to assure long-term protection of the AZNST, the Forest Service will

encourage state and local governments to develop and enter into cooperative agreements with the private landowners hosting the AZNST.

3. **Evaluate feasibility of Forest Service acquisition or cooperative agreements.** In situations where state and local governments, and cooperating private entities are unable to acquire lands or interests to assure long-term protection of the AZNST, and where state and local governments are unable to develop and enter into cooperative agreements with the landowners along the trail , the Forest Service should, on a case-by-case basis, evaluate the feasibility of acquiring such lands or interests from willing private landowners or developing and entering into cooperative agreements with willing landowners.
4. **Transfer.** The Forest Service should also consider, on a case-by-case basis, potential transfer of acquired lands or partial interests outside of national forest boundaries to another federal or state agency, with those lands managed under the rules and regulations of the accepting agency.
5. **Identify potential opportunities to move the trail off private lands.** In certain specific situations, for example where the AZNST crosses private lands and the landowner(s) are: (a) not willing to convey lands or interests along the AZNST, and (b) not willing to enter into a cooperative agreement, the Forest Service and cooperating entities should explore the feasibility of potentially realigning or relocating the segment of the AZNST onto other nearby lands.

Strategies for Roads

As described in the AZNST Route on Roads section, approximately 16% of the AZNST (roughly 128 miles) is located on roads. However, some of those roads are currently closed to the public or in basic custodial care, and therefore not currently open to motorized use by the public. Where the AZNST is co-located with motorized routes, this diverges from National Trails System Act direction for national scenic trails as non-motorized trails and the proximity of pedestrians to motor vehicle traffic is a potential public safety concern. The guiding principles and prioritization criteria address the need to move segments of the AZNST that are currently located on roads onto non-motorized trails.

Following are the primary strategies the Forest Service and cooperating agencies and other entities should use for the segments of the AZNST located on roads:

1. **Roads are temporary locations.** To meet the intent of the National Trails System Act that national scenic trails are non-motorized trails, the Forest Service and cooperating entities should consider all segments of the trail currently located on roads as temporary locations and long-term non-motorized routes analyzed through agency planning.
2. **Relocate or re-align segments of the AZNST.** The Forest Service should actively work with the responsible federal agencies, states, counties, and city governments, and with the Arizona Trail Association, in cooperative efforts to realign or relocate (see chapter 4) all segments of the AZNST onto non-motorized trails.
3. **Consider conversion of roads to trails.** In some limited cases, conversion of roads to trails, and similar approaches, may be used by the relevant managing agency, in accordance with its policies and applicable plans, to meet the goal that all segments of the AZNST are on non-motorized trails.

Appendix G — Arizona National Scenic Trail Sign Guidelines

Southwestern Region

October 1, 2018

Introduction

Signs are the most common constructed features on the Arizona National Scenic Trail (AZNST). Properly selected and maintained, signs welcome visitors to the trail, help them find their way, and provide information so people can enjoy the trail, stay safe, and learn about natural and cultural resources.

In 2016, the Arizona Trail Association contracted two thru-hikers to complete an inventory of signs along the 800-mile national scenic trail. The inventory identified approximately 3,500 signs along the route, and included GPS locations, photos, and a brief description of each sign. Signage inventoried along the national trail planning corridor represented an impressive effort by agencies and partner groups. However, the inventory revealed a number of issues, including a lack of consistency, signs in poor condition, missing signs, and improper installation of signposts.

The images that follow provide examples of some of the common issues identified regarding signage along the Arizona National Scenic Trail.

About 2,500 of the existing signs are fiberglass-type posts with decals. A large percentage of these are not properly installed and in poor condition.

Figure 26. Examples of fiberglass signage improperly installed or in poor condition

Wood signs are in character with natural landscapes, but do not hold up well in Arizona's climate and require more maintenance than other materials.

Figure 27. Two examples of engraved wooden signs in poor condition

The service mark used on signs along the trail varies, and the official service mark was found to be rarely used.

Figure 28. Sign displaying the official service mark of the Arizona National Scenic Trail

Signage Objectives

The guidelines contained in this document are provided to help trail managers as they install and replace signs along the AZNST national trail planning corridor. Guidelines are recommendations and trail managers should adhere to them whenever possible.

However, some agencies have other sign guidelines or policy to consider along with these guidelines. Local conditions and other issues will occasionally necessitate straying from the guidelines, such as installing signs that are not covered here. Consider the objectives below and work with the AZNST program manager and Arizona Trail Association when needed.

1. Minimize the number of signs. Signs on the trail should be placed sparingly, where needed for trail users to follow the trail and at critical intersections but should not dominate the national trail planning corridor.
2. Provide a strong, consistent, and positive image or "brand" for the Arizona National Scenic Trail.
3. Orient, guide, and inform trail users. Inform northbound and southbound trail users equally. (Note: currently, trail signage is more complete from the south-to-north direction).
4. Maximize the use of sustainable practices and materials (for example, wood signs are mandatory in wilderness, but other materials may be more sustainable in other locations).
5. Complement the Nature and Purposes of the trail. Ensure signs are consistent with the setting (signs in urban areas can be different than those in wildland settings).
6. South of the Gila River (passages 1-15), signs should be in both English and Spanish whenever possible.

Figure 29. Examples of use for the Arizona National Scenic Trail service mark

Whenever possible, signage should include the official service mark of the Arizona National Scenic Trail, in either color or black and white, or as a brand. This service mark is a visual key to trail users on the route and promotes the recognition of a cooperatively managed trail to the public.

There are several general types of signs for the AZNST, including:

- **Road signs,** which help motorists find trailheads. On high-speed roads, they can also warn drivers of trail crossings. These signs are primarily used on state highways, county roads, and forest roads.
- **Trailhead signs**, which provide visitors with maps and information about the trail, safety information, and tips on protecting resources.
- **Signs on the trail**, which reassure trail users that they are on the AZNST, help prevent them from getting lost, give information about destinations and distances, and provide information about administrative boundaries and special places.
- **Interpretive signs** which help visitors learn about nature, history, and other topics. These may be located at trailheads, along the trail, or at locations just off the trail.

The public agencies and private organizations that manage segments of the AZNST often use a variety of signing methods. However, for the AZNST to be recognized as a national scenic trail along its entire 800-mile route, signs and their locations should be consistent. Managing authorities (such as U.S. Forest Service, National Park Service, Bureau of Land Management, and counties) and passage stewards are urged to identify signing needs as part of the annual trail assessment process. An inventory of existing signs should be regularly updated. It is recommended that, as new signs are needed or existing signs need replacement, the uniform sign guidelines suggested in this document be followed.

Application of these guidelines needs to be balanced with aesthetic considerations to avoid over-signage. Each passage should contain a limited “set” of signs. Existing sets should be evaluated to determine if they contain the essential elements or whether they over-burden the system and contribute to sign pollution. When replacing old or damaged signs, every effort should be made to place new signs back in the same locations and not just add signs to the system.

Implementation of these guidelines will be limited by availability of funds or labor, or both. Therefore, establishing priorities may be helpful.

Priorities

1. Install, repair, and replace signs as needed to protect health and safety. First evaluate whether a sign is the best way to address safety, then utilize these guidelines as appropriate.
2. Give the entire trail a facelift by performing maintenance on the approximately 2500 existing fiberglass posts or replacing with more durable materials. Install all posts properly (a large number are crooked or falling down), replace posts that are badly deteriorating, and replace decals per these guidelines. Remove those that are not essential for trail users.
3. Install missing signs per guidelines:
    - where necessary for navigation (such as trail junctions and major road crossings),
    - boundary signs at private lands and wilderness, and
    - Signs bearing the service mark of the AZNST through Grand Canyon National Park.
4. Implement guidelines at high-use trailheads (both road and recreation signs) and replace existing signs that are in poor condition.
5. For signs that are currently in acceptable condition and, as funding is available, make changes to meet sign guidelines, or wait until replacement is needed and then apply the guidelines.

Guidelines

The following types of signs and markers will be discussed in this document. Each type of sign listed below has been assigned an alphabetical identifier. Figure 30 is a diagram of a hypothetical trailhead area identifying potential locations for signage using the alphabetical identifier assigned for the different types of signage.

Road signs

A. Trailhead information signs

B. Trail crossing signs

C. Gateway Community signs

Recreation (non-road) signs

D. Trailhead information kiosks

E. Destination signs

F. Navigation markers

G. Interpretive signs

H. Boundary signs

I. Signs where AZNST is on existing roads

J. Miscellaneous other signs

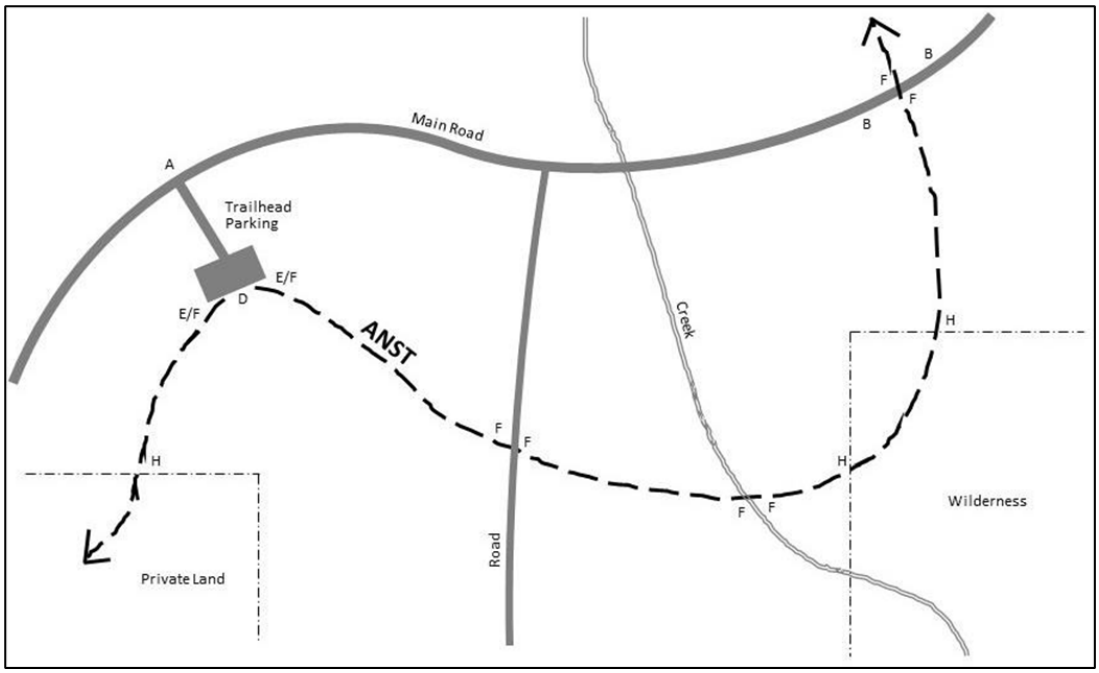

Figure 30. Potential locations where various types of signage could be installed

Note: figure 30 is not to scale and does not include every type of sign included in these guidelines. This diagram represents the potential locations where signs could be installed. Signs are not needed at every crossing or in every location. Check local trail conditions and install only the signs that are needed.

It should be noted that other guidelines exist for many signs. For road signs, Manual of Uniform Traffic Control Devices standards must be followed (see Road Signs section below). For signs on National Forest System lands, sign and poster guidelines for the Forest Service (EM7100) apply.

Road Signs

Road signs must comply with the Manual of Uniform Traffic Control Devices (MUTCD), including requirements for retro- reflectivity. When planning these signs, always work with engineers and road managers (Arizona Department of Transportation, County departments of transportation, or land management agency). Highway departments calculate the size of the sign based on travel speed or posted speed limits. Most road signs are aluminum.

Note: The AZNST service mark must be approved by Arizona Department of Transportation before it is used on roads within their jurisdiction.

Trail Information Signs

Trail information signs direct motorists to trailheads. They are primarily used on higher speed roads and at major trailheads.

Signs generally have white lettering on a brown background. The use of the AZNST service mark is optional but encouraged (brown and white or color). Signs may also include an arrow, trailhead or site name, and international symbols.

Mounting on standard galvanized U-channel or square posts is the norm.

Figure 31. Road signs direct motorists to trailheads

Figure 32. Official service mark of the Arizona National Scenic Trail

Where desired, the official service mark of Arizona National Scenic Trail may be included on the sign. If desired, international symbols (hiker, equestrian, bicycle) may be mounted under the main sign.

In some locations, simply installing a sign with the official service mark (in color or brown and white) is sufficient to direct visitors to trailheads and avoids the need to add the words “Arizona National Scenic Trail” in locations where one or more signs already exist.

Trail Crossing Signs

Road signs can be installed in advance of trail crossings where trail use, and road conditions warrant. Approach and warning signs may be installed 500 feet to 1,000 feet in advance. This is important where visibility is limited due to road curvature, vegetation, or hills, and trail use is heavy. They may also be used where equestrians must cross a major roadway.

Mounting on standard galvanized U-channel or square posts are the norm.

Figure 33. International symbols may be used where the trail crosses roads.

At potentially dangerous road crossings, pavement markings or a signal, or both, may be needed. These are rare, and mainly located on highways.

Where it is important for trail users crossing a road to know the road number (such as for navigation purposes), it is acceptable to post a road sign with the road number on the roadway near the trail crossing. Figure 34 provides an example of a trail crossing with pavement markings, a signal, and road numbers.

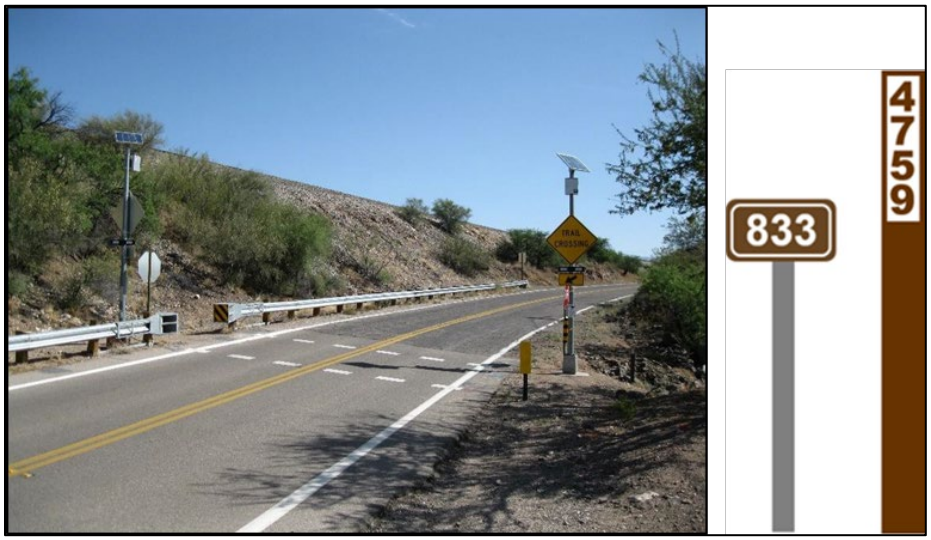

Figure 34. Road crossing in Pima County includes signs, pavement markings, and a signal.

Gateway Community Signs

Gateway Community signs can be installed at portals to official gateway communities. They are green and white metal signs with the AZNST service mark and usually mounted on U-channel or square posts. They may be mounted alone or incorporated onto other signs.

Figure 35. Gateway Community signage

Recreation signs

Recreation signs are located along trails, walkways, and within recreation sites such as trailheads, and are not meant to be viewed from a vehicle. Fonts on recreation signs should generally be a simple style such as Arial, Calibri, or Helvetica. All caps may be used for headings or destinations, but avoid using all caps for multiple words, as this is difficult to read.

Trailhead Information Kiosks

Trailhead kiosks are used at primary trailheads with higher use and designated parking. At smaller trailheads, a destination sign or navigation marker (see the Destination Signs section, and Navigational Markers sections that follow) where the trail leaves the trailhead is often sufficient.

Kiosks should be installed at the start of the trail. Kiosks can have one or more panels. A three-panel kiosk at a major trailhead might have a panel with general information about the AZNST and a map of the entire route, a panel with a more detailed map and information about the trail passage, and a third panel for posting temporary information such as safety issues, fire restrictions, etc. A one-panel kiosk might just have a map and basic information. The AZNST words and/or service mark should be featured prominently on all kiosks. Including the passage name is also recommended.

Consider including other important information on kiosks, such as prohibited uses (for example, bicycles in wilderness), bypass routes, regulatory and safety information, and Leave-No-Trace ethics. An example is shown in the appendix.

Kiosk materials and colors should be selected to blend with the surrounding landscape and minimize long-term maintenance needs. Select brown structures and sign panels with earth tones. Wood structures are discouraged; metal and composite structures are more durable. Existing boilerplate cutouts in the shape of Arizona are also acceptable.

Select sign panels that have at least a 10-year warranty. If desired, kiosks are good locations to install trail registers.

Figure 36. Four examples of trailhead kiosks

Trailhead kiosks like the four examples seen in figure 36 may vary in style but should be comprised of low maintenance materials, have colors that blend into the environment, and include a map and information for trail users.

Destination Signs

Destination signs are a good alternative to kiosks at smaller trailheads but can also be used at major trail intersections. These signs provide visitors with reassurance that they are on the trail and headed to the correct destination. They should only be used where there are major destinations important to most trail users. Signs should include the AZNST service mark, as well as major destination(s), mileage (outside of wilderness), and arrows if necessary.

Figure 37. Examples of destination signage

Figure 37 provides two examples of destination signage. The left sign (located in wilderness) shows a wood sign on an un-dimensional wood post. The right sign (located outside wilderness) shows an anodized sign on a steel post.

Font size is usually 1 inch. In wilderness, use natural unpainted wood signs installed on natural un-dimensioned posts (such as juniper). Outside of wilderness, consider the natural and cultural setting, as well as long-term maintenance costs, when selecting materials. Wood can help protect primitive character, but anodized aluminum or routed high-density polyethylene (HDPE) composite signs (with brown backgrounds and light-colored text), installed on steel posts may be

appropriate in some locations. Do not mount signs on trees, fences, or other signs or their supporting posts. Many destination signs will be mounted so that the bottom edge of the sign is set 60 inches above the trail tread.

Navigation Markers

Navigation markers are the most common signs along the AZNST. They provide reassurance that trail users are on the AZNST and can also indicate acceptable and unacceptable uses.

The current signs are usually fiberglass-type posts (such as Carsonite™) with decals, which are inexpensive and simple to install. Although brown fiberglass is acceptable, the material and decals degrade and need regular maintenance and replacement. Fiberglass posts can fade or fail within a few years when located in deserts and/or full sun (note: good quality packing tape placed over the top of decals and posts can help improve longevity).

Consider replacing fiberglass posts with stickers with lower maintenance materials such as anodized aluminum or unpainted steel signs installed on unpainted 2-inch to 4-inch diameter steel posts set in natural soil and rock where practicable or concrete footings when located near trailheads or urban areas.

Consider reflectorized or contrasting colors where visibility at night (or low light) is important. Wood posts are an option in some settings, and a simple installation option is to drive a metal post (U- channel or square, preferably brown in color) into the ground and attach a 4-inch by 4-inch wood post to the metal post near the ground. This eliminates the need for digging a larger hole and avoids termite or rot issues, but still looks like a wood post set in the ground. Where there are cattle, 4-inch by 4-inch posts hold up well. Do not use fiberglass posts in wilderness.

Decals should generally be 3.5 inches in size. In locations where this size is not prominent enough, such as at busy trailheads or major road crossings, size may be increased (9 inches may be more appropriate in these areas). In areas where non- permitted uses are a problem, the international symbol and circle with a slash, can be added to help control the problem. Where possible, install boulders or other physical barriers instead of signs.

For consistency, stickers or symbols should be placed in this order from top to bottom: AZNST service mark (use on all navigation markers); Directional arrow, if needed

- Other symbols that are necessary for a specific section of trail
- Optional: Agency, trail courtesy symbol, American flag (can help reduce vandalism)

Figure 38. Examples of navigation markers

- Whenever possible, use only the AZNST service mark (with an arrow if needed).
- Use additional symbols only when necessary for a section of trail (such as where off-highway vehicle resource damage is a problem)
- Less is more. Minimize the number of navigation markers and use only the symbols necessary for a section of trail and minimize the number of navigation markers

Possible locations for navigation markers include:

- At trailheads where trail begins (if the trail itself and other signs are insufficient).
- Both sides of trail crossings, road crossings, and/or major drainages crossings (such as rivers and arroyos).
- Where the trail abruptly changes direction.
- Places where users may wander off the trail due to cattle trails or other confusing features.

Navigation markers may also be the AZNST service mark mounted on fences, gates, or trees (note: Use a metal service mark, not plastic). Rock cairns or rocks in mesh baskets may be appropriate in certain locations, such as on both sides of road crossings, arroyos and creek/river crossings, and in wilderness (anchor baskets to the ground as needed).

Figure 39. More examples of navigation markers

Navigation markers can be branded signs on trees or wood posts (especially in wilderness), fiberglass or metal posts with the AZNST service mark, or rock cairns. Decals and brands should generally be 3.5 inches. In wilderness and locations where vegetation and snow will not obscure them, cairns can be smaller than shown in figure 39.

Interpretive Signs

Interpretive signs are optional but can be useful to help trail users learn about natural and cultural resources in an area. Interpretation along the AZNST is currently very limited, and ideally interpretation should occur at trailhead kiosks and in brochures rather than signs along the trail. This is because interpretive signs are a major investment in time and money, expensive to install and maintain, subject to vandalism, and can be a visual intrusion along remote sections of the trail. However, there are some sites where their placement is warranted. Whatever medium is chosen, interpretive signs should be made to quality standards that complement and enhance the prominence and identification of the AZNST. Some potential locations are areas where outstanding educational opportunities exist and in areas where sensitive resources need protection. Trailheads, National Parks, and urban areas are the primary locations where interpretive signs should be considered. Ensure that funds for long-term maintenance will be available.

Figure 40. Examples of interpretive signs

Recommended materials include anodized aluminum or digital composites mounted in aluminum frames.

Boundary Signs

It is recommended that signs be placed in locations where the AZNST crosses the following boundaries:

- Wilderness (wood signs on juniper posts)
- Private Lands (metal signs on U channel or steel posts)

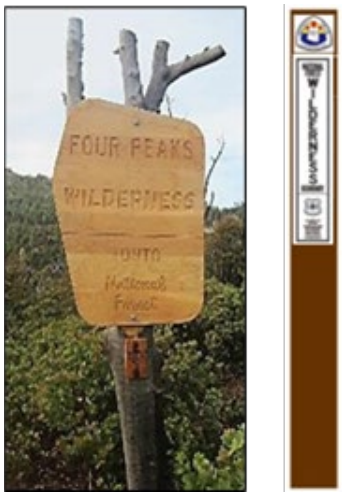

Figure 41. Examples of wilderness boundary signs

Figure 42. Example of a sign marking private land

Figure 43. A boundary sign

Signs for locations where the AZNST crosses Federal Public Lands (Forest Service, Park Service, Bureau of Land Management), State lands (including state parks), or county land are optional. Use when helpful to discourage hunting, off-trail use, and illegal activities.

Mounting boundary signs on gates and fences is also acceptable.

Where bicycles frequently enter wilderness, consider installing signs to inform users of prohibitions (and/or bicycle bypass signs if appropriate).

Signs Where the Trail is on Existing Roads

The long-term goal is to re-route the AZNST off of existing roads. However, in locations where the AZNST is currently on an existing road, fiberglass posts with decals are likely the best option for signs. See Navigation Markers section above. Discuss signs with the jurisdiction responsible for the road. For Forest Roads, posts should be off the road edge 6 feet to 12 feet, unless doing so would make them difficult for trail users to see. Install signs sparingly; focus on where the trail starts and stops following a road, and at road intersections.

Figure 44. A national scenic trail sign indicating the trail is on an existing road

Miscellaneous Other Signs

- **Bypass Routes**: Signs for equestrian and mountain bike bypass routes. Ideally trail users will have maps or other guidance to find these routes. Install signs sparingly and only where necessary.
- **Side and Connecting Trails**: See AZNST Comprehensive Plan, chapter 5 for guidance about side and connecting trails. Signs for these routes may be installed, but they should clearly differentiate between the AZNST and the side or connecting trail. The service mark should not be used on side or connecting trails.
- **Existing Signs**: There are some existing anomalies, such as monuments at the boundaries with Mexico and Utah, boilerplate cutout signs at the beginning of some passages, overhead portals at some trailheads, and the unique style of signs or posts on the Flagstaff urban trail system. There is no need to change these signs, but additional signs like these elsewhere on the AZNST are discouraged.
- **Passage Names**: Signs with passage names should only be installed at trailheads.
- **Signs on Gates**: Work with land managers and ranchers to determine what a gate is used for. If the gate is only for AZNST users, posting a "Please Close Gate" sign is appropriate. If a gate is used by ranchers to control livestock, a sign reading "Close Gate Unless Wired Open" or "Leave gate as you found it" can be installed.
- **Safety Information**: Temporary or permanent signs for hazards (for example, wildfire damage, trail maintenance, forest health projects, and trail re-routes) may be installed at the discretion of local trail managers. Information about closures and known safety issues (such as where the AZNST is on a road) is best posted at trailheads. In locations where the AZNST crosses a cattleguard, warning signs for bicycles may be installed.
- **Highest and Lowest Points**: Signs for the highest and lowest elevation points along the trail should be installed. Use appropriate materials.

Figure 45. Examples of other miscellaneous signs

Figure 45 provides some examples of other miscellaneous signs. Bypass signs (first photo) may be installed at the discretion of trail managers. (Note: Bypasses are not a part of the AZNST, and the service mark should only be used for the official AZNST route). Existing steel cutout signs (second photo) are acceptable. Temporary signs to alert trail users to hazards (next four photos) may be installed at the discretion of trail managers.

Maintenance

Signs along the AZNST need regular maintenance and replacement. Managing agencies should pay for signs and maintenance on trails within their jurisdiction. Managing agencies should do the following at least annually:

- Inspect posts to ensure they are plumb and not rotting or failing and replace as needed.
- Replace fiberglass posts and decals as needed.
- Remove graffiti and repair vandalism.
- Repaint where paint is fading, blistering, flaking, or peeling. Federal Standard Color 20059 is a recommended dark brown color.
- Trim vegetation that hides signs or mount signs above vegetation height.
- Remove temporary signs that are no longer needed.
- Update the sign inventory maintained by the Arizona Trail Association. When signs are installed, removed, or altered, send a photo and GPS location to the Arizona Trail Association. Instructions can be found at https://aztrail.org/get-involved/regional-stewards/sign-and-gate-inventory/

Sources

Although local sign shops can produce many of the signs included in these guidelines, some sources to consider include:

- Rock Art https://www.rockartsigns.com/d72/
- Interpretive Graphics http://www.interpretivegraphics.com/
- Carsonite™ http://www.carsonite.com/products/parks-recreation
- Pannier Graphics http://panniergraphics.com/ and Rock Art https://www.rockartsigns.com/d72/
- Unicor https://www.unicor.gov/Category.aspx?iStore=UNI&idCategory=1422
- Arizona Trail Association https://aztrail.org/product/wooden-sign/
- Wood Product Signs https://www.woodproductsigns.com/
- Heather & Fred Studio https://www.cncservicesarizona.com/

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References

Many agencies have sign guidelines. The Arizona Trail Sign Guidelines should be used in conjunction with other sign guidance. Some of these include:

Bureau of Land Management National Sign Handbook
https://www.blm.gov/download/file/fid/5938

Forest Service Sign and Poster Guidelines
https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3810021.pdf USDOT Federal Highway Administration Manual of Uniform Traffic Control Devices
https://mutcd.fhwa.dot.gov/

Appendix

Figure 46 is an example of a well-designed trailhead sign. Trailhead signs should include a title that prominently features the words Arizona National Scenic Trail, the service mark, and a detailed map of the trail. The map should highlight the Arizona National Scenic Trail, but also show other trails and bypass routes. Additional items that may be included: the passage or trailhead name, an overview of the Arizona National Scenic Trail, leave-no-trace guidance, regulatory and safety information, and interpretation of natural and cultural resources.

Figure 46. Example of a well-designed trailhead sign