



United States  
Department of  
Agriculture

Forest  
Service

Southwestern  
Region



# **Final Environmental Assessment for The Arizona Trail – Peaks Segment**

**Sandy Seep to Kelly Tank**

**Coconino National Forest**

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# Chapter 1 – Purpose and Need

## Document Structure

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into four parts:

- Chapter 1: Purpose and Need
- Chapter 2: Alternatives
- Chapter 3: Environmental Consequences
- Chapter 4: Agencies and Persons Consulted
- Chapter 5. References and Literature Cited
- Appendices

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Peaks Ranger District Office in Flagstaff, Arizona.

## Background

The Arizona Trail is a long-distance trail traversing Arizona from its Mexico to Utah borders. Three state planning documents reflect the widespread support for construction of the Arizona Trail. The development of each of these documents included extensive public contact and involvement: the 1994 Arizona Statewide Comprehensive Outdoor Recreation Plan (SCORP), the 1994 Arizona State Trails Plan, and the 1995 Arizona Trail Management Guide. In addition, the 1986 Land Management Plan (Forest Plan) of the Coconino National Forest<sup>1</sup> identifies the Arizona Trail as a priority for completion.

The Forest Service has reinforced the vision to complete the Arizona Trail by entering into a Memorandum of Understanding with the Arizona Trail Association and an Intergovernmental Agreement with Arizona State Parks. Much of the Arizona Trail has been completed across the state. The segment discussed here is one of the last remaining large connections. Currently, segments of the Trail are completed or are scheduled for construction in the Peaks, Mormon Lake and Mogollon Rim Ranger Districts.

Cultural values of Native American tribes were a prominent factor that helped the ID team identify the proposed action. In addition, the proposed action maintains wilderness values by avoiding the Kachina Peaks Wilderness.

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<sup>1</sup> Forest Plan has been amended seventeen times.

Other concerns include the many Protected Activity Centers (PACs) for Mexican spotted owls in the area. This proposed action avoids some owl PACs and passes through others.

One goal of the proposed Arizona Trail route is to provide a quality high elevation experience with scenic views for hikers, mountain bikers, and horseback riders. A designated trail corridor would provide planned, well-engineered trail routes. Constructing a trail would provide opportunities for long distance use on the entire Arizona Trail, shorter trips, and other daytime use. Currently, some social trail use occurs along the proposed route, especially in the Schultz Pass Road and Fort Valley areas. A light concentration of hiking occurs on social trails on the slopes of San Francisco Mountain near Hart Prairie. A Forest system trail could serve as a collector to channel hiking use to a well-designed Arizona Trail route.

The Forest Plan identifies the Arizona Trail as a priority for completion and describes the segments on the Mogollon Rim (formerly Blue Ridge) and Mormon Lake Districts. However, the same Forest Plan direction (written below) also describes the objectives for this proposed portion of the Arizona Trail.

The Forest Plan states... "This trail will be a non-motorized pathway. The route will use public lands to ensure public access; use existing trails, where use of the trail as part of the Arizona Trail does not cause substantial negative impacts; allow day-long, weekend, or week-long travel segments; accommodate hikers, equestrians, cross-country skiers, and back-country bicyclists where physically possible and where management permits; provide representation of the various life zones, geologic features, native vegetation, wildlife, cultural resources and resource management practices of the Coconino National Forest; be in harmony with other federal, state, and local government entities, and private landowners; and allow for continued production of outputs from forest resources as stated in the Forest Land Management Plan. Final trail location, design, construction, and signing to be accomplished by Forest staff and private sector/volunteer partnerships"(Forest Plan page 52).

Previous attempts to finalize the Peaks Ranger District Segment of the Arizona Trail were made in the 1990's however the diversity of opinion and other project priorities shelved the project.

At that time, the Arizona Trail Association strongly supported a route that went to the highest point in Arizona and traveled within the Kachina Peaks Wilderness along existing trails. This alternative was unacceptable to the Native Americans and had its fair share of wildlife and wilderness concerns. Options to this alternative were considered that moved the route to the other side of Highway 180 and to the east side of the Kachina Peaks Wilderness.

The Proposed Action described in this EA is a fresh start at dealing with the complexities of building a trail in an area that holds great importance to a range of individuals and forest users. The Project Initiation Letter identifies the focus of the analysis will be on locating the Arizona Trail for the benefit of the greater public, while understanding and mitigating potential impacts to affected resources and sensitive areas (PRD#08).

## **Purpose and Need for Action**

There is a need to:

- Plan and construct a non-motorized trail to the standards established in the Forest Service Trails Handbook and Arizona Trail Management Guide. Provide hiking, equestrian, and mountain biking opportunities.

- Identify and/or construct, as needed, Arizona Trail support features such as trailheads, water sources, and locations to replenish supplies of food and other essential items.
- Identify a trail route that provides a high quality recreational experience and that provides a portion of the Arizona Trail.
- Identify a trail route that represents a balance between recreation demands and cultural values of Native American tribes. Take steps to mitigate negative effects to culturally sensitive areas.
- Identify an Arizona Trail route that balances recreational uses with the protection of wildlife habitat. Take steps to mitigate negative effects to threatened, endangered, and sensitive species. Strive for positive human/wildlife habitat interactions.
- Interpret unique landscape features along the Arizona Trail route to foster understanding and help protect features, such as, dendroglyphs<sup>2</sup>, wildfire areas, and historic railroads.

This action responds to the goals and objectives outlined in the Coconino Forest Plan, and helps move the project area towards desired conditions described in the Plan.

## Proposed Action

The ID team developed a group of actions to identify the Proposed Action. The Proposed Action represents the ID team's best effort at progressing towards desired conditions for the Arizona Trail. A list of actions, including specific design features was described. The Proposed Action is described under Alternative A. Actions presented will allow for continued recreation use along the trail corridor under specific conditions and management direction that considers soil, water and vegetative conditions, wildlife needs, heritage resources and recreation experience. The proposed action meets the intent, standards, and guidelines of the Forest Plan. The inclusion of this segment of the trail will be an amendment to the Plan to include Arizona Trail designation on the Peaks Ranger District.

## Decision Framework

Nora Rasure, Forest Supervisor of the Coconino National Forest, is the Forest Service official responsible for deciding whether or not to construct this segment of the Arizona Trail in this project area as proposed, or in an alternative location or manner. If the decision were made to construct the trail, it would also be designated in the Coconino Forest Plan. A portion of the Arizona Trail passes through lands administered by the Rocky Mountain Forest and Range Experiment Station – Fort Valley Experimental Forest and will therefore require concurrence by their designated official.

## Public Involvement

This project was listed in the Schedule of Proposed Actions on October 2001 and all subsequent issues. A meeting with Arizona Game and Fish personnel was held on December 21, 2001. A Proposed Action was mailed on January 11, 2002 to a mailing list of 768 people who expressed interest in the project, were on the Forest Plan mailing list, or who were otherwise determined to be interested or affected (adjacent landowners, organizations, agencies). In addition, as part of the public involvement process, the agency conducted a public field trip on May 18, 2002 and a

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<sup>2</sup> A dendroglyph is a historic carving on a tree, primarily aspen in this vicinity.

meeting with homeowners on May 19, 2002. Consultation with tribes began with Cultural Resource Advisory Team (CRAT) meetings December 1996 and March 2000 and a meeting with Timothy Begay (Navajo Cultural Specialist) and Roger Henderson (Archaeologist) at the Peaks Ranger District, August 1996. Consultation was continued via a letter with Proposed Action sent to affiliated tribes on February 5, 2002. A sight visit with Hopi Elders took place on August 5, 2003. In addition, a news release was issued at the time the proposed action was available. A field trip was held on June 24, 2002 attended by USFS, Arizona Game and Fish and US Fish and Wildlife Service (USFWS) service personnel. The Proposed Action was posted on the Coconino website. A meeting was held on July 12, 2002, where USFS, Arizona Trail Association, USFWS, Arizona Game and Fish Department, and Grand Canyon Trust shared concerns. Using the comments from the public and other agencies the ID team developed a list of issues to address. Meeting notes, field trip notes, and comment letters are located in the Project File.

## Issues

The Council for Environmental Quality (CEQ) NEPA regulations require this delineation in Sec. 1501.7, "...identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)..." A summary of the comment analysis is located in the project record file (PRD#31). Explanation of rationale used for determining significance is located in the project record file (PRD#30).

As for significant issues, the Forest Service identified 4 topics raised during scoping. These issues include:

**Issue #1:** Having a portion of the trail motorized will diminish non-motorized experience, cause safety concerns and user conflicts. And it will be difficult to limit motorized use to only that portion<sup>3</sup>.

The miles of motorized use trail will measure this issue by alternative.

**Issue #2:** The proposed route will cause increased (and unacceptable) human disturbance to Mexican spotted owl (MSO) habitat during nesting and rearing young within Protected Activity Centers (PACs) and goshawk nesting and rearing young (PFAs).

This issue will be evaluated by the number of miles of trail within MSO PACs and goshawk PFAs, the proximity of the trail to nesting areas, topography and vegetation factors that influence site distance and sound levels adjacent to trail.

**Issue #3:** The proposed route will cause more people to go to Little Springs, thus adding to current levels of use during the day. This may; a) make it difficult for animals to use the water, b) disturb bear foraging, c) disturb MSO using the area<sup>4</sup>, d) increase stepping on unique plants and e) impact cultural values.

This issue will be evaluated by the miles of Arizona Trail within the Little Springs PAC, the number of social trails that intersect the Arizona Trail in the Little Springs area and the distance of this section of the Arizona Trail from trailhead parking. A qualitative evaluation

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<sup>3</sup> Coconino National Forest Plan identifies the Arizona Trail as a non-motorized pathway.

<sup>4</sup> Note: nighttime impacts are not an issue because no camping along trail within ½ mile of PACs or within ¼ mile of water source.

will describe how much the Arizona Trail is contributing to current recreation impacts in the area under the different alternatives.

**Issue #4:** The proposed route does not include the Snowbowl parking area; people are hiking down the hill from the lot anyway. People will travel cross-country to reach the proposed Arizona Trail. Also, the proposed route lacks access for too long of a portion. People may park along Snowbowl Road if we don't provide a trailhead in the area.

This issue will be evaluated by a qualitative estimate of trail use as associated with trailhead locations under different alternatives, and the expected resource impacts of cross country dispersed use versus managed trail use.

## Chapter 2 – Alternatives

This chapter describes and compares the alternatives considered for the Arizona Trail-Peaks Segment project. It includes a description of each alternative considered. Maps are located at the end of this document. This section presents the alternatives in comparative form, sharply defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public.

### Alternatives Not Analyzed in Detail

Project record document #33 summarizes the variety of comments received to the Proposed Action. The Interdisciplinary (ID) Team discussed options for a trail route in other areas of the San Francisco Peaks. Placing the Arizona Trail on the east side of the mountain, and using existing trails, was not analyzed in detail because it would require traversing wilderness, the east side is less fragmented or “pristine” than the west side, similar threatened and endangered wildlife concerns occur on both sides, and the east side contains more culturally sensitive areas.

On the portion of the trail from Snowbowl Road to Kelly Tank there was a field trip to identify an alternative route that avoided constructing new trails in PACs, used existing roads and trails and provided a recreation experience that met the Arizona Trail Association objectives was explored (PRD#35). A route around the Snowbowl PAC was identified and although it bordered private property and would be more expensive to construct, it was a viable alternative route and was later incorporated into Alternative D. Due to the juxtaposition of private land, the Fern Mountain Botanical Area and associated Bebb's Willow riparian community, and the location of existing roads and trails we were unable to locate a viable route that would avoid the Little Springs PAC. A possible route could have been considered if The Nature Conservancy (TNC) would allow an easement across their property. A subsequent call to TNC indicated they would not be interested. Lastly, we identified the northern portion of trail avoiding Little Springs PAC but were unable to locate the route on existing roads. The steepness of this route was a concern but was determined to be feasible. This portion of the route was also incorporated in Alternative D.

In the vicinity of Mt Elden and the Dry Lake Hills an alternative was considered that designated the existing Brookbank and Sunset Trails as the Arizona Trail. This route was not analyzed in detail because it did not meet the goal of maintaining a ½-mile distance from known Mexican spotted owl nest locations which Alternatives A, C and D do. This route, although on existing trail, would have likely increased use within a MSO nest buffer and therefore was eliminated from a detailed analysis.

The ID Team discussed the option of designating the existing Kachina Trail as part of the Arizona Trail, but chose not to analyze this route in detail because mountain bikes can not use the Kachina Trail as it lies within the wilderness. Another concern was that portions of the Kachina Trail are not suitable for horses (PRD#36).

### How the Alternatives Were Developed

All action Alternatives are the same for the equestrian trail opportunity from Sandy Seep to Sunset Trailhead, and for the City of Flagstaff's Urban Trails System (FUTS) connection at Buffalo Park to the Oldham/Rocky Ridge Trail.

Alternative A is the proposed action. Alternative A was adjusted slightly in the Little Springs area thus partly responding to Issue#3. Two design features were added to Alternative A. The first additional change included taking forest/meadow edge into consideration when conducting final trail layout. The objective is to reduce the number of places where the trail is located on the edge. This design feature was developed from discussions with Arizona Game and Fish Department. The second design feature includes obliterating two poorly located social trails in the area between Little Spring and Bismarck Lake and designing an improved and better located loop trail from Bismarck trailhead connecting to the proposed Arizona Trail and looping back to Little Spring. This loop uses an existing trail and a two-track road located within a previously designated motorized restricted use area. This was developed from discussions with US Fish and Wildlife Service to provide a more managed situation and to lessen impacts of dispersed, off trail uses.

Alternative C was developed to respond to Issue#1 and contains no motorized uses. After further review of the Fort Valley trail system<sup>5</sup>, it was determined that parallel trails would be appropriate because of the high levels of use in the area, and the need for connections for both motorized and non-motorized single track trail. A trail that provides for motorcycle use was approved under the Fort Valley decision. A new parallel non-motorized section (approximately 2 miles) is needed in order for the Arizona Trail to be entirely non-motorized. The development of parallel trails has been generally discouraged as recreation management practice; especially when the ID team was considering proposed trail routes in the wilderness that would have required parallel trails for mountain bike use. However, the Fort Valley area has less traditional cultural and biological sensitivity than the wilderness, and using parallel trails is the only way to accommodate previous decisions made with participation from motorized users in the Fort Valley area. Because of the creation of motorized trails under the Fort Valley decision, the need for motorized access on the Schultz Creek trail is diminished. Therefore this alternative would convert the Schultz Creek trail from a combined motorized/non-motorized single-track trail to a non-motorized trail<sup>6</sup>.

Alternative C includes the adjustment for a loop trail in the Little Springs area and the design feature for edge habitat similar to Alternative A. Therefore this alternative partly responds to Issue#3.

Alternative D was developed to address Issue#2 and Issue#3. This alternative is the same as Alternative C in the Dry Lake Hills and Fort Valley area, but travels a different route from the Fort Valley area towards the north. This alternative does not pass through any MSO PACs north of Schultz Creek<sup>7</sup>. All Arizona Trail route alternatives are the same in they pass within 1.0 mile of Little Springs. Alternative A and C include the Bismarck Loop, passing alongside Little Spring. Alternative D does not include this loop.

Option A1 and C1 which is the creation of a trailhead connection at Humphrey's Trailhead in the Arizona Snowbowl lower parking lot is in response to Issue#4. Under these options a short loop trail would be created for people who are only visiting the parking area for views, picnics etc, or

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<sup>5</sup> Per the Decision Notice and Finding of No Significant Impact for the Fort Valley Ecosystem Restoration Project

<sup>6</sup> The Flagstaff/Lake Mary Ecosystem Area Forest Plan Amendment 17 directs the FS to 'consider converting the Schultz Creek Trail to a non-motorized trail' (Forest Plan page 206-105).

<sup>7</sup> There are two PACs within the Dry Lake Hills trail system where the Arizona Trail would be designated on existing Forest System trail.

who want a very short interpretive trail experience<sup>8</sup>. The rationale for creating the interpretive loop trail is to manage the current large numbers of people that fan out from the parking area. Discussions with Arizona Game and Fish department personnel supported a short loop trail in an effort to maintain turkey use of the area. In addition to the loop trail, a 0.4-mile connection would be designated from the parking lot to the Arizona Trail.

For all alternatives the concept of identifying water sources along the trail route was dropped from consideration. Rather individuals must plan for limited water availability along the trail and carry their own water.

## Items Common to All Action Alternatives

### ***Design Features and Coordinating Requirements***

The following items are part of the proposed trail design and management,

- A Conservation Measure for the Biological Assessment and Evaluation is to close and obliterate social trails that intersect the Arizona Trail route except for the Little Springs area. In an effort to manage existing and anticipated use of this area a loop trail was designed to provide access to Bismarck Lake and Little Springs while reducing negative impacts by obliterating poorly located social trails.
- A Conservation Measure for the Biological Assessment and Evaluation is to create no-camping area within ½ mile radius of the Arizona Trail in the four MSO PACs. Inform and enforce Statewide no camping within ¼ mile of open water rule.
- Install self-closing gates at allotment fence crossings in conjunction with arched aboveground cattle guards if needed, i.e., for cattle using a pasture.
- The current motorized restricted use in the vicinity of Domingo Tank north to Bismarck Lake is not changed with this decision.
- Designs trail width to approximately 24".
- Cut trees as needed for the proposed Arizona Trail route construction. Avoid cutting snags, pine or fir trees greater than 9 inches diameter, or oak trees larger than 5 inches diameter at root collar.
- Conduct pre-construction surveys, as needed, for Forest Service sensitive plant species (*Astragalus rusbyi* and *Penstemon nudiflorus*). Conduct surveys in potential habitat along the route prior to Arizona Trail construction. The surveys would provide for optimum detection and protection of sensitive plants. Personnel involved in the trail construction would be trained in the identification of these plants to expedite survey efforts.
- Lay out the trail to minimize impacts to sensitive plants or significant archeological features. As needed, a biologist/botanist or an archaeologist would be consulted to verify plants or features and to monitor trail routing.

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<sup>8</sup> Separate from this analysis and decision, a composting or other self contained toilet will be installed at this site.

- Develop a noxious weed risk assessment. Conduct pre-construction surveys for noxious weeds and Implement Best Management Practices as identified in the *Coconino National Forest Noxious Weed Strategy* through the weed risk assessment. Prior to final Arizona Trail construction, crews would be trained to identify noxious weed species. Should populations be found, workers would consult with District wildlife and recreation staff to determine a course of action to eradicate plants and/or prevent spread.
- Annually search for noxious weeds at trailheads. Train the trail stewards to recognize and report weeds.
- Design trail to pass in and out of the forest edge (the place where meadows meet the tree line), to lessen impacts to turkey, deer and other wildlife.
- A Conservation Measure for the Biological Assessment and Evaluation is to survey Mexican spotted owl restricted habitat within ½ mile of the proposed Arizona Trail route. For one year, the Forest Service would conduct surveys of Mexican spotted owl in restricted habitat areas within ½ mile of the trail. This would occur in the year prior to or during the year of trail construction.
- Encourage Arizona Trail users to keep pets on a leash through signing and trail steward contacts.
- As much as possible, leave downed logs intact to maintain habitat for the prey of raptors.
- A Conservation Measure for the Biological Assessment and Evaluation is that no new construction will occur during the Mexican spotted owl breeding season (3/1 through 8/31) within Mexican spotted owl PACs.
- Where appropriate, place signs and other interpretative tools at historic railroad grades and dendroglyph sites for information and protection purposes.
- Follow the Archaeological Clearance Report for this project. The Report will document the archaeological inventory, results of consultations with the Tribes, and compliance with the National Historic Preservation Act of 1966, as amended. The Report will contain site-specific protection measures for implementation including monitoring and the stipulation that all cultural and historical sites will be avoided by ground disturbing activities.
- Outfitter guides and permitted group uses or events will be evaluated under separate NEPA analyses and decisions<sup>9</sup>.
- No permits will be issued for groups larger than 12 persons, which is the limit recommended in the Recovery Plan, during the MSO breeding season (March 1 through August 31) for use of the segment of the Arizona Trail which is within the Schultz Creek, Weatherford, and Little Springs PACs.
- The primary season of use of the proposed Arizona Trail route would be mid-May through mid-October. The route may also be signed as a cross-country ski trail.

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<sup>9</sup> Appendix A contains a summary of how the FS approves or disapproves outfitter guide and group use/event requests.

- Lay out the trail to minimize impacts to research plots. Rocky Mountain Research Station will approve route through Rocky Mountain Experimental Forest. Where appropriate place signs and interpretive tools for protection of research plots prior to construction of trail.
- Location of trail is at least ½ mile from known Mexican spotted owl nest and roost sites.
- Best Management Practices for trail building as identified in the Forest Service Trails Handbook and Specifications for Construction and Maintenance of Trails.

## Alternatives

The following alternatives are considered in detail. See the maps located at the end of this document.

### **Alternative A – Proposed Action**

**Alternative A** is the Proposed Action as follows,

Construct and/or Designate the Arizona Trail corridor from Sandy Seep to Kelly Tank (see map). This segment is approximately 31.0 miles. The estimates below show the different types of trail designation.

- 15.8 miles of current Forest Service System Trail (Dry Lake Hills and Fort Valley Areas) – 4.4 miles of this trail will also have motorcycle use.
- 1.2 miles of social trail<sup>10</sup> would be converted to Forest Service System Trail.
- 1.3 miles of two track roads located within a previously designated motorized restricted use area would be converted to trail.
- 1.5 miles of roads currently open to vehicles that would be closed to vehicles and converted to non-motorized trail (PRD#84).
- 11.8 miles of new single-track construction.
- The Bismarck Loop, which utilizes 1.1 miles existing trail and 1.3 miles of two track roads, located within a previously designated motorized closure.

This analysis applies to a corridor that is one-quarter mile wide. The proposed Arizona Trail route would be a 24-inch tread located within the corridor based on the on-the-ground layout.

Under this Alternative, the Forest Plan will be amended to apply the current Forest Plan language as written for the Arizona Trail on the Mogollon (formerly Blue Ridge/ Long Valley) and Mormon Lake Districts to the segments of trail located on the Peaks Ranger District (Fisher Point to the Forest boundary).

Use the Buffalo Park, Sunset and Sandy Seep Trailheads. Construct a new trailhead at Kelly Tank.

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<sup>10</sup> A social trail is a non Forest Service system trail that is created by forest users

In addition, the trail route is adjusted for edge habitat (moving in and out of edge with on the ground layout) and adjusted for Little Springs. The adjustment moves the trail east and closer to the Wilderness boundary to create more distance between Little Springs and the Arizona Trail while creating the Bismarck Loop connecting to the Arizona Trail.

Option A1 includes an additional trailhead at the Humphrey's trailhead at the parking area of Arizona Snowbowl and a connector trail of 0.4 miles.

### **Alternative B – No Action**

Under the No Action alternative, no Forest Service system trail corridor would be implemented.

### **Alternative C – Preferred Alternative**

**Alternative C** is the same as Alternative A except in the Fort Valley area. This alternative places the Arizona Trail on Schultz Creek Trail and removes motorized use on the Schultz Creek Trail. This Alternative creates a new non-motorized section of trail that parallels the existing planned motorized trail in the Fort Valley area.

Alternative C has,

- 12.2 miles of current Forest Service System Trail (Dry Lake Hills and Fort Valley Areas)
- 1.2 miles of social trail<sup>11</sup> would be converted to Forest Service System Trail.
- 1.3 miles of two track roads located within a previously designated motorized closure area.
- 15.4 miles of new single-track construction (approximately 3.5 miles in the Fort Valley area).
- 1.5 miles of trail currently open to motorized use that will be closed to motorized use.
- The Bismarck Loop, that utilizes 1.1 miles existing trail and 1.3 miles of two track roads, located within a previously designated motorized closure.

Option C1 includes the additional trailhead at the Humphrey's trailhead at the parking area of Arizona Snowbowl and a connector interpretive loop trail of .4 miles.

### **Alternative D**

**Alternative D** – is a new location that swings further west in the lands between Hart Prairie and Highway 180. This alternative is non-motorized, avoids all northern goshawk PFAs, all MSO PACs north of Schultz Creek, and follows roads slated for closure as much as possible<sup>12</sup>.

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<sup>11</sup> A social trail is a non Forest Service system trail that is created by forest users

<sup>12</sup> Sometimes closed roads are poorly located causing resource impacts and/or diminished recreation experience. To place a trail on such a road is may not appropriate or desirable.

Alternative D has,

- 12.2 miles of current Forest Service System Trail (Dry Lake Hills and Fort Valley Areas).
- 2.0 miles of roads currently open to vehicles that would be closed to vehicles (except for administrative use).
- 6.2 miles of two-track roads will be obliterated and converted to trail.
- 12.8 miles of new single-track trail construction.

## Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative. Information in the table is focused on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

	Alt A	Alt B	Alt C	Alt D
Entire Route Non-motorized	No	N/A	Yes	Yes
Effects MSO PACs	Yes - potential increased disturbance to 2 PACs.  New trail construction in 2 PACs	No - Existing disturbance in 3 PACs  No new trail construction	Yes – potential increased disturbance in 3 PACs  New trail construction in 2 PACs	Yes – potential increased disturbance in 1 PAC.  No new trail construction in PACs
Effects Little Springs	Some effects to spring vegetation. MSO offset by social trail mgmt., closure and rehab of social trails will mitigate current impacts from forest visitors. Designating a system trail for hikers, bikers, and equestrians would reduce unmanaged social trail impacts. Impacts would be confined to a hardened or defined trail tread. Corridors would use minimum impact strategies for travel and would follow natural terrain.	Least – no change to social trails.	Same as A	No change to social trails in Little Spring area resulting in continued impacts on MSO and spring vegetation.

Chapter 2 – Alternatives

	Alt A	Alt B	Alt C	Alt D
Provides Snowbowl Parking Link	Yes	N/A	Yes	No
Provides Arizona Trail	Yes	No	Yes	Yes
High Quality Recreation Experience	Lesser quality due to shared use with motorcycles	Lowest quality experience with no trail designation or construction	Highest quality experience, non-motorized, quality views, high variety of vegetation types, including high elevation experience.	Lesser quality due to numerous motorized road crossings, more likely to encounter other forest visitors along FR 151 corridor, greatest distance from S.F. Peaks, low elevation.
Human – Wildlife Interactions	Potential on non-motorized portion. More potential for viewing and encounters than D	Potential for wildlife viewing and encounters. Social trails continue	Potential for wildlife viewing and encounters.	Potential for wildlife viewing and encounters. Trail crosses more motorized roads reducing potential.

# Chapter 3 - Environmental Consequences

This section summarizes the physical, biological, social and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. It also presents the scientific and analytical basis for the comparison of alternatives presented in the chart above.

## Applicability of the Forest Plan, Laws, Regulations, Policies and Other Direction

### *Plans of Other Agencies*

The Council for Environmental Quality regulations implementing NEPA require a determination of possible conflicts between the Proposed Action and the objectives of federal, state, and local land use plans, policies, and controls for the area. The Arizona Trail – Peaks Segment designation does not conflict with objectives of other Federal, State, and local land use plans, policies and controls for the area.

### *Forest Plan Management Direction and Consistency*

The proposed action and alternatives are consistent with the Forest Plan (PRD#46). This document tiers to the Final Environmental Impact Statement and Land and Resource Management Plan (Forest Plan) for the Coconino National Forest (Record of Decision, 1987) and all subsequent amendments. The Forest Plan provides direction for all resource management programs, practices, uses, and protection measures for the Coconino National Forest. The table below shows the Management Areas where the alternative routes pass through.

Management Areas<sup>13</sup> crossed by miles of Arizona Trail for each alternative

Alternative	MA 3	MA 4	MA 5	MA 6	MA 7	MA 8	MA 9	EXP
A	19.91	1.94	1.94	4.13	0.08	0.42	1.17	1.78
C	17.47	2.37	1.93	4.12	0.08	0.42	1.19	2.26
D	19.90	2.21	2.64	4.76	0.08	0.42	0.44	2.37

Consistency with the Forest Plan applies only to the specific activities described in the alternatives. Not all desired conditions in the Forest Plan can be achieved with a single on the ground action. Often many actions are necessary in order to meet the desired conditions identified by the management direction.

The Forest Service uses many design features, mitigation measures and preventive measures in the planning and implementation of land management activities. The application of these measures begins during the planning and design phases of a project. Some are described in the Forest Plan and additional direction comes from applicable Forest Service manuals and handbooks. These are described in the Items Common to All Alternatives Section of Chapter 2.

<sup>13</sup> MA 3 is ponderosa pine and mixed conifer less than 40% slope, MA4 is ponderosa pine greater than 40% slope, MA5 is aspen, MA6 is unsuitable pine, MA7 is pinyon and juniper less than 40% slope, MA8 is pinyon and juniper greater than 40% slope, MA9 is mountain meadow and EXP is Fort Valley Experimental Forest.

Management guidance for management indicator species, other wildlife and fish resources, and diversity of plant and animal populations, is found in several key documents. The 1982 National Forest Management Act Regulations (Planning Regulations) at 36 CFR 219 set forth a process for developing, adopting, and revising land and resource management plans for the National Forest System (CFR 219.1), and identify requirements for integrating fish and wildlife resources in Forest Land Management Plans (CFR 219.13 and CFR 219.19). Key provisions for fish and wildlife resources require that fish and wildlife habitat be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area, where a viable population is considered to be one that has the estimated numbers and distribution of individuals to ensure its continued existence is well distributed through the planning area (CFR 219.19). By definition, the planning area is the area covered by a forest plan (CFR 219.3). The Forest Planning Regulations require that certain species, whose population changes are believed to indicate the effects of management activities, be selected and evaluated in forest planning alternatives (CFR 219.19).

To this end, Region Three Forest Service Sensitive species have been evaluated. Within the project area, there are 12 species that are found or have potential habitat. Findings include “no impact” for six of these species and “may impact individuals but not likely to trend toward Federal listing” for the remaining six species.

Additionally, the Planning Regulations require that the population trends of management indicator species (MIS) be monitored and relationships to habitat changes determined (CFR 219.19). Specific management direction for MIS is also found in Forest Service Manual (FSM) 2600. Policy and direction that tiers to CFR 219.19 is provided for MIS for application at the Forest Plan and project levels relative to species selection, habitat analysis, monitoring and evaluation, and other habitat and planning evaluation considerations, in FSM 2620. FSM 2630 provides guidance on improving MIS habitat, and conducting habitat examinations, and project level evaluations for MIS within the project area.

Within the project area there are 12 MIS species that are found or have potential habitat. There are no habitat impacts for any of these MIS species. There are no human disturbance impacts to three of the species. There are human disturbance impacts expected for northern goshawk, turkey, elk, deer, pygmy nuthatch, juniper titmouse and Mexican spotted owl. However, implementation of any alternative will not result in effects that change the population’s trend on the Coconino National Forest (USDA 2002).

### ***Applicable Laws and Regulations to All Alternatives***

Shown below is a partial list of federal laws and executive orders pertaining to project-specific planning and environmental analysis on federal lands. While most pertain to all federal lands, some of the laws are specific to Arizona.

- Multiple-Use Sustained-Yield Act of 1960 – This law is followed by this project because it is consistent with the Forest Plan.
- National Historic Preservation Act of 1966 (as amended) – This law is followed by this project and the appropriate documentation will be located in the project file.
- Wild and Scenic Rivers Act of 1968, (as amended) – there are no wild and scenic rivers within the project area.

- National Environmental Policy Act (NEPA) of 1969 (as amended) – The effects of the project have been analyzed and are disclosed in this Environmental Assessment.
- Clean Air Act of 1970 (as amended) – There are no effects to air quality from any alternative.
- Endangered Species Act (ESA) of 1973 (as amended) – Analysis and disclosure of effects is complete, documentation meets standards of this law and consultation with US Fish and Wildlife Service is underway and will be completed prior to a decision.
- Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 (as amended) – This law is met because this project is consistent with the Forest Plan.
- National Forest Management Act (NFMA) of 1976 (as amended) – See the Forest Plan Direction and Consistency section above. This project meets the intent of this law by consistency with the Forest Plan.
- Clean Water Act of 1977 (as amended) – There is no effect to water quality.
- American Indian Religious Freedom Act of 1978 – The effects will be analyzed and disclosed in the Cultural Resources report.
- Archeological Resource Protection Act of 1980 – The effects on archaeological sites will be analyzed and disclosed in the Cultural Resources report.
- Cave Resource Protection Act of 1988 – There are no caves affected by this project.
- Executive Order 11593 (cultural resources) – See NHPA above.
- Executive Order 11988 (floodplains) – There are no floodplains within the project area.
- Executive Order 11990 (wetlands) – There is no construction within wetlands or disposition of wetlands to other ownership, nor easement through wetlands.
- Executive Order 12898 (environmental justice) – See the Environmental Justice section of this chapter.
- Executive Order 12962 (aquatic systems and recreational fisheries) – There are no aquatic systems or recreational fisheries affected within this project.
- Executive Order 13186 (conservation of migratory birds) – The effects to migratory birds will be analyzed and disclosed in the Environmental Consequences chapter.

### **Other Guidance**

Where other guiding documents exist, they are specifically described for the resource where they apply; examples are the Mexican Spotted Owl Recovery Plan (1995).

### **Assumptions for Analysis**

A portion of the Peaks Ranger District Segment of the Arizona Trail would be designated on existing trails or in areas within Fort Valley where motorized and non-motorized trail needs have

been identified in past analysis (USDA 1999). The estimated 1 to 2% increase in trail use within 3 to 5 years after the Arizona Trail is officially completed is additive to the estimated 3 to 5 % annual increase attributable to population increases. The cumulative effects of this increase would be small.

The portion of the Arizona Trail where the trail turns north and follows along the western flank of the San Francisco Mountain would be primarily new Forest System trail. This would result in a cumulative increase in trail use of 4 to 7%. Existing use of social trails would also be expected to increase at rate of 3 to 5% annually due to population growth. The alternative trail routes will focus use on a single corridor reducing the area of impact but increasing the number of Forest System trail users. Increased use from the Arizona Trail route will be additive to the estimated increases due to population growth. The reduced area of impact will balance the cumulative effects of this increase.

All cumulative effects analysis that follows relates to the following past, present and reasonably foreseeable actions:

Fort Valley Ecosystem Restoration Project

Arizona Snowbowl Facilities Upgrade

White Vulcan Mine Settlement Agreement and Mine Closure (TCP eligibility for inclusion in the National Register of Historic Places)

Existing Forest System Trails

Hart Prairie Bebbs Willow Project

Hart Hill Road Obliteration

Social Trails and Unclassified Roads

Existing Snowbowl Special Use Authorization

Schultz Vegetation Management

Inner Basin Waterline

Private Land Development in Fort Valley/Baderville and Hart Prairie/White Horse Hills

Vegetation maintenance along existing roads and utility easements

Existing Recreation (firewood gathering, sight seeing, Humphrey's Trail)

## **How the Alternatives Meet the Purpose and Need**

**Purpose and Need Statements:** Plan and construct a non-motorized trail to the standards established in the Forest Service Trails Handbook and the Arizona Trail Management Guide (PRD#72). Provide hiking, equestrian, and mountain biking opportunities. Identify and/or construct, as needed, Arizona Trail support features such as trailheads, water sources, and locations to replenish supplies of food and other essential items.

**Conclusion:** Alternatives A, C and D all meet the need for completing the Arizona Trail. All the action alternatives meet the design criteria in the Arizona Trail Management Guide. However,

Alternative D does not meet the Arizona Trail Association’s objective of traveling near or to prominent land features. Alternative B does not meet this purpose and need.

**Purpose and Need Statement:** Identify a trail route that represents a balance between recreation demands and cultural values of Native American tribes. Take steps to mitigate negative effects to culturally sensitive areas.

**Conclusion:** Alternatives A, C and D are all located outside of the Kachina Peaks Wilderness. All alternatives are within a Traditional Cultural Property (TCP). This TCP was determined eligible for inclusion in the National Register of Historic Places as part of the White Vulcan Mine Settlement Agreement and Mine Closure in August 2000. Location of Alternatives A and C are of less concern to tribes than options further upslope and in the wilderness. However, Hopi expressed concern about recreation use in the vicinity of Alternatives A and C. Most support trails that provide a more managed situation, and lessens impacts of dispersed, off trail uses. Alternative D has the least concern from a traditional cultural value standpoint. Alternative B does not raise traditional cultural concerns.

**Purpose and Need Statement:** Identify an Arizona Trail route that balances recreational uses with the protection of wildlife habitat. Take steps to mitigate negative effects to threatened, endangered, and sensitive species. Strive for positive human/wildlife habitat interactions.

**Conclusion:** None of the effects to wildlife habitat are substantial under any Alternative. Alternative D has the least effect on Mexican spotted owl habitat, followed by A and then C. Alternative D has the least effect on northern goshawk habitat, followed by C and then A. There are no known bear maternity areas affected by any alternative. Alternative D is expected to have the least bear/human encounters, followed by C and A, which are similar. Alternative D does not pass through key nesting and brooding turkey habitat and therefore has the least impact. Alternatives A and C pass through key nesting and summer habitat for turkeys and impacts are lessened by design feature along edge. There are no known mountain lion dens along any alternative trail route. Alternative D has the least chance of lion encounters followed by C and A which are similar. All alternative routes pass through elk calving habitat and effects are not substantial. Alternative B does not meet this purpose and need. Alternatives A and C take steps to mitigate the negative effects of recreation use on wildlife by closing, and obliterating social trails and focusing use in more appropriate and less sensitive areas.

**Purpose and Need Statement:** Identify a trail route that provides a high quality recreational experience and that provides a portion of the Arizona Trail.

**Conclusion:** Alternative C provides the highest level of recreation trail experience because it is 1) non-motorized, 2) travels through a variety of vegetation types including high elevation vegetation, and 3) contains vistas along the route. Alternative A is the next highest recreation trail experience followed by Alternative D. Alternatives A and C provide for a more unified and cohesive trail experience as these routes cross the fewest number of roads, while Alternative D crosses roads more frequently, offering a more disjointed recreational experience. (See Comparison of Alternatives table, page 13)

In addition, Alternatives A and C both provide for ‘collecting’ social trail use and encouraging use on a well-designed sustainable trail. The Bismarck Loop and subsequent social trail obliteration will improve resource conditions by better managing recreation use in the Little Spring area. Alternative D has the same effect in the areas west of Hart Prairie. The trail option at Snowbowl

(Option A1 and C1) also improves resource conditions by better managing use at this high visit area. Alternative B makes no changes in current social trails at Little Springs.

**Objective Statement:** Interpret unique landscape features along the Arizona Trail route to foster understanding and help protect features, such as, dendroglyphs<sup>14</sup>, wildfire areas, and historic railroads.

**Conclusion:** All action alternatives provide for similar levels of opportunity for interpretation of these features.

## Analysis of Significant Issues

The following section describes environmental effects as they relate to the significant issues. Information is organized into 1) affected environment, 2) direct and indirect effects and 3) cumulative effects. There are no direct or indirect effects from trail designation or construction under Alternative B, no-action.

***Issue #1 having a portion of the trail motorized will diminish non-motorized experience, cause safety concerns and user conflicts. And it will be difficult to limit motorized use to only that portion.***

**Alternative A:** Alternative A includes 4.4 miles of trail where single track motorized use (motorcycles) would share the trail with non-motorized users. Safety concerns would exist on this portion of the trail especially where motorcycles pass or come upon horses. The number of motorcycles that would use the trail is unknown, but would be expected to increase over time, as the trail became better known. Increases in the number of trail users increases safety concerns.

Many non-motorized trail users do not like the presence of motor noise. This effect is usually short and lasts for the time it takes a motorcycle to pass a horse rider, mountain biker or hiker. Other distant noises occur in the project area, the primary noise being a background sound of cars traveling along Highway 180 and the Snowbowl Road. The occasional motorcycle would only have slight noise impacts and disturbance to people that did not like motor noise. Higher numbers of motorcycles on the trail would increase this impact.

When the ID team designed the proposed action, the ID team felt that motorized use could be limited to only the section of the trail where it was designated. This would be done through signing and trail stewards (volunteers that monitor trail activity).

**Alternative B:** Current nonsystem, social motorized trail use would continue under this alternative. The occasional motorcycle can be heard in the area. There is no conflict with Arizona Trail users because there would be no Arizona Trail under this alternative.

**Alternative C:** A parallel trail allows for motorcycles to use Fort Valley area as approved through the Fort Valley Ecosystem Restoration decision (USDA 1999). The parallel non-motorized pathway for hikers, mountain bikers, and horse riders eliminates the direct of contact with motorcycles. Distant motorcycle noise will still be heard.

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<sup>14</sup> A dendroglyph is a historic carving on a tree, primarily aspen in this vicinity.

**Alternative D:** Same as C.

***Issue #2 The proposed route will cause increased (and unacceptable) human disturbance to Mexican spotted owl (MSO) during nesting and rearing young (PACs) and goshawk nesting and rearing young (PFAs).***

## **Mexican Spotted Owl**

### **Affected Environment**

The Mexican spotted owl occupies mixed conifer and ponderosa pine/Gambel oak vegetation, usually characterized by high canopy closure, high stem density, multi-layered canopies within the stand, numerous snags, and down woody material.

The exact relationship between human disturbance and owl success is unknown. Owls are most susceptible to human disturbance effects at nest sites and during the breeding season of March 1 through August 31. This season overlaps with the summer season that usually sees high levels of outdoor recreation use.

Protected Activity Centers (PACs) of not less than 600 acres have been delineated around activity centers for PACs in the project area using boundaries of known habitat polygons and topographic features.

Current Forest Plan language says to “Generally allow continuation of the level of recreation activities that was occurring prior to listing” and listing occurred in 1993. There was little quantitative data at that time to describe the level of recreation activities, so it is difficult to describe quantitatively whether or not use levels are similar. In general use is high and trends are upward for portions of all of the MSO PACs affected, and the Arizona Trail is expected to elevate these trends. At the same time road and trail management has reduced use in portions of many of these PACs and channeled use onto managed roads and trails in others. This trend for road and trail management is expected to continue.

The affected environment of individual PACs follows:

Schultz Creek PAC: Currently there is 1 mile of single track Forest Service system trail used by motorcycles, hikers, mountain bikes and horses. Incidental activities already taking place in the general area include vehicles sight seeing/driving along Schultz Pass Road, camping, horseback riding, hiking, biking, motorcycling, and picnicking. The birds have either habituated to the current recreation activity associated with the trail and road or have already moved due to human disturbance. We do not know how these owls have responded to recreational activities within the PAC.

Weatherford PAC:

Currently there is 1 mile of existing Forest Service system trail within this PAC. Uses along this trail include horse, mountain bike and hiking. Extremely dense mixed conifer vegetation and steep topography buffers the activity center from trail activity. The Schultz Pass Road intersects the lower ¼ of this PAC. Informal Monitoring has documented occupancy of this PAC 15 of the past 17 years. Monitoring was not sufficient to determining reproductive status and no young have been documented

Snowbowl PAC:

Currently there are 0 miles of Forest Service system trail and very few user-created trails. Monitoring has shown reproduction for 8 of 15 years. The Snowbowl Road intersects this PAC. There is an existing trail in the Veit Springs area owned and administered by the Arizona Game and Fish Department<sup>15</sup>. Incidental use in the area includes vehicle travel on Snowbowl Road, camping, horseback riding, hiking, biking, picnicking and heavy recreational use at Veit Spring.

Little Springs PAC:

Currently there are 0.15 miles of Forest Service system trail within this PAC. There are two well-established user-created trails. Most people stay on established social trails but some off-trail hiking occurs. Incidental use in the general area includes camping, horseback riding, hiking, biking, and picnicking. Since listing in 1993, there have been increases in recreation activity within this PAC that have been offset by motorized closures and riparian habitat improvement projects.

Orion PAC:

Currently there are 0 miles of Forest Service system trail although there are large amounts of user-created trails. The Fort Valley Ecosystem Restoration EA (USDA 1999) identified recreation impacts to the owls from dispersed camping and the development of social trails. A decision was made to seasonally restrict camping, reroute the trail system and implement trail closures within the PAC to reduce disturbance to resident owls. Efforts to seasonally restrict camping within the PAC were completed in the summer of 2000. To date, the replacement trail system has not been completed; therefore social trails have not been closed in the PAC. Work is ongoing to complete the trail system and obliterate social trails and completion is expected in 2004. Continued recreation use on these social trails is adversely affecting these birds.

### **Direct and Indirect Effects**

Common to all action alternatives is the implementation of design features that help reduce impacts to owl habitat. In alternatives A and C these include adjusting the trail further east in the Little Springs PAC, developing a loop trail from Bismarck Lake to Little Spring and closing social trails to reduce impacts in the Little Springs area, no camping within ½ mile radius of the Arizona Trail in MSO PACs, timing restrictions for trail construction activities, locating the trail at least ½ mile from known nest and roost sites, implementing a trail steward program to assist

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<sup>15</sup> If the Bellemont land exchange (a transfer of land allocated to a shooting facility to Arizona Game and Fish Department) occurs Forest Service will be the owner.

with compliance and monitoring. These items are listed in detail in the Items Common to All Alternatives section of Chapter 2. In Alternative D there is no new construction in PACs.

Common to all action alternatives, trail use will not alter primary habitat components or reduce prey base habitat. Alternatives A and C may adversely affect owls because trail route is constructed within PACs and human use, during breeding season has the most impact

Schultz Creek PAC – Designation of the Arizona Trail segment under Alternative C will increase human activities of hiking, mountain biking and horse riding, but will reduce motorized use and camping in and near the PAC. Alternatives A and D do not pass through or alongside this PAC.

Weatherford PAC – Designation of the Arizona Trail on 0.65 miles of the existing trail under Alternatives A, C and D will not increased disturbance. Current monitoring indicates a tolerance to a high level of use within ¼ mile of known active nest sites. The addition of increased numbers of people further away will not increase disturbance levels.

Snowbowl PAC – Approximately 0.83 miles of new trail will pass through this PAC under Alternatives A and C. The trail does not intersect nest areas. The Arizona Trail will increase hiking, horse and mountain bike use, and will not increase camping within the PAC. Monitoring has indicated a tolerance for high levels of use within 0.10 mile of nest areas. Alternative D does not pass through this PAC.

Little Springs PAC – Approximately 0.69 miles of new trail passes through the PAC under Alternatives A and C. This will increase hikers, mountain bikes and horses within the PAC and will not increase overnight camping. The Arizona Trail does not bisect the two well-established social trails that are located elsewhere in this PAC and identified for obliteration. One closed road bisects the Arizona Trail and this connection will be used for the northern portion of the Bismarck Loop. The Arizona Trail will not increase a specific recreation use within an activity center or in direct vicinity of known MSO roost and daytime locations. In fact, the Bismarck Loop is a conservation measure designed in coordination with US Fish and Wildlife Service to reduce impacts from unmanaged recreation in this sensitive area. The dense vegetation and topographic features between the Arizona Trail and roost areas will reduce the potential for noise to carry to the roost area. Alternative D does not pass through this PAC but passes .4 mile from its boundary. Under the no action alternative, no Forest Service system trail would be implemented. Deleterious impacts to this PAC from unmanaged social trails and increased use would continue.

Orion Springs PAC – No portion of the Arizona Trail will pass through this PAC in any alternative. All alternatives intersect with the Fort Valley trail system just south of the Orion Springs PAC providing an opportunity for trail users to use the Fort Valley system. The new Fort Valley trail will not intersect nest sites.

### **Cumulative Effects**

A list of past, present and reasonably foreseeable activities (Appendix B) was referenced and those activities that could have the same effects are listed for each Mexican spotted owl PAC.

Schultz Creek PAC – There are no other projects completed in the recent past, underway or planned that would have effects additive to effects from the Arizona Trail. There is a continued emphasis on closing social trails as they occur<sup>16</sup>.

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<sup>16</sup> Per the FLEA Amendment 17.

Weatherford PAC – Same as Schultz Creek PAC.

Snowbowl PAC – Recreation use of the Veit Springs area (1/4 section owned by the Arizona Game and Fish Department<sup>15</sup>) is expected to continue to be high with an emphasis on hiking. The effects of the Arizona Trail are additive to effects at Veit Springs. The Arizona Snowbowl Facilities Improvement Proposal incorporates the Snowbowl PAC but is not expected to have an adverse effect to these owls due to timing restrictions and no habitat modification of spotted owl habitat. The Veit Springs property owned by Arizona Game and Fish Department is part of a proposed land exchange with the US Forest Service. The land exchange may or may not occur and use of the area will not change with a change in ownership.

Little Springs PAC – The Little Springs Restoration project was implemented in 1996/1997 and included road obliteration, extension of the Bismarck Motorized Restricted Use Area, and spring habitat improvement. Social trail use is expected to continue and to increase over time. The Arizona Trail will slightly add to the overall use of the Little Springs area but will benefit the area by obliterating poorly located user-created trails. Trail stewards can help remind people to stay on the trail. This cumulative effect is expected to be favorable.

Orion PAC – The Fort Valley Ecosystem Restoration project is underway. Completion of the system trails and closure of the social trails is expected to reduce disturbance to owls from recreation impacts from dispersed camping and the development of social trails. A decision was made to seasonally restrict camping, reroute the trail system and implement trail closures within the PAC to reduce disturbance to resident owls. Efforts to seasonally restrict camping within the PAC were completed in the summer of 2000. To date, the replacement trail system has not been completed; therefore social trails have not been closed.

## **Northern Goshawk**

### **Affected Environment**

Northern goshawks live in ponderosa pine and mixed conifer forests in a variety of forest structures. Post Fledgling Family Areas (PFAs) are generally stands of intermediate canopy cover for nesting, while more open areas are used for foraging. The Coconino Land Management Plan contains a guideline to *limit human activities in or near nest sites and post-fledgling family areas during the breeding season so that goshawk reproductive success is not affected by human activities.*

The Fort Valley PFA is located west of the Dry Lake Hills – current uses within this PFA include 1.5 miles of Forest Service system trail designated in the Fort Valley Ecosystem Restoration decision (USDA 1999). Incidental use in the area includes, horseback riding, hiking, biking, motorcycling, picnicking and heavy recreational use from residents in the area. There is increased emphasis on removing social trails within the PFA.

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<sup>15</sup> If the Bellemont land exchange (a transfer of land allocated to a shooting facility to Arizona Game and Fish Department) occurs Forest Service will be the owner.

The Veit PFA is located south of Veit Springs – Currently there are 0 miles of Forest Service system trail and very few user-created trails. The Snowbowl Road intersects this PFA. There is an existing trail in the Veit Springs area owned and administered by the Arizona Game and Fish Department<sup>15</sup>. Incidental use in the area includes vehicle travel on Snowbowl Road, camping, horseback riding, hiking, biking, picnicking and heavy recreational use at Veit Spring area.

The Whitehorse PFA is located between Walker Lake and White Horse Hills. The 1996 Hochderffer Fire burned through the nest stand and 60% of this PFA. Monitoring indicates the PFA has not been occupied since 1993. The PFA boundary was revised in 1998 to include additional unburned habitat. The PFA was monitored four years following the fire with no response or location of any northern goshawk. Recreation has been somewhat reduced in this area as a result of the fire damage that occurred.

### **Direct and Indirect Effects**

Approximately 1.1 miles of existing (Fort Valley) trail will pass through the Fort Valley PFA under Alternative A. This trail route was identified in the Fort Valley Ecosystem Restoration decision (USDA 1999) and is located away from nest sites to reduce disturbance. The designation and subsequent increased use of this portion of trail as the Arizona Trail is not expected to limit reproductive ability in this PFA. Alternatives C and D do not pass through this PFA.

The Veit PFA is crossed by the Arizona Trail under Alternative A and C by approximately 0.83 miles of new construction. Although constructing a trail through a PFA is not consistent with the guideline to limit human activities, the actual location of the trail meets the intent of minimizing human disturbance to the nest by moving the trail as far away as possible. Although nesting goshawks, particularly the male, may be aware of hikers within the PFA, it is unlikely that hikers would disrupt nesting behavior because the trail is greater than 1/2 mile from nest stands. Alternative D does not pass through this PFA.

The Whitehorse Hills PFA is crossed by the Arizona Trail under Alternative A and C by approximately 1.9 miles of new trail. This PFA was unoccupied prior to the 1996 Horseshoe fire and monitoring indicates it has not been occupied for 8 consecutive years. The trail route is located away from potential nest habitat within the revised PFA to reduce potential disturbance if the PFA becomes reoccupied. Alternative D does not pass through this PFA.

### **Cumulative Effects**

The Fort Valley PFA – The project biologist determined that combined effects from the Fort Valley and A1 projects will not adversely affect this species and improves habitat for the northern goshawk over the long term. Effects from Alternative A are additive. However, the combined effects of these projects and the proposed action will not affect the population viability of this species or result in a trend toward federal listing.

The Veit PFA – Veit Spring property owned by Arizona Game and Fish Department is part of a proposed land exchange with the US Forest Service. The land exchange may or may not occur and use of the area will not change with a change in ownership. The Arizona Snowbowl Facilities Improvement Proposal incorporates the Veit PFA but is not expected to impact these goshawks due to timing restrictions for construction activities and limited habitat modification.

The Whitehorse PFA – the past fire activity in this PFA impacted northern goshawk habitat and effects from the Arizona Trail are additive.

***Issue #3 The proposed route will cause more people to go to Little Springs, thus adding to current levels of use during the day. This may; a) make it difficult for animals to use the water, b) disturb bear foraging, c) disturb MSO using the area, d) increase stepping on unique plants and e) impact cultural values.***

## **Little Springs Area**

### **Affected Environment**

Wildlife uses of water – Currently wildlife access the spring site in between the times that people are present. People are present mostly during late morning, mid-day and the afternoon during the summer months. Other water sources are available in the general area including springs and seeps within the wilderness. The current State law of no camping within ¼ mile of water discourages camping in close vicinity to the spring.

Bear foraging – Currently bear use the Little Springs area in between the times that people are present. When bear are unable to forage at the Little Springs site, they are able to find food elsewhere in the general area. Game and Fish Department has not reported problems with bear/human encounters in the Little Springs area. Bear generally avoid humans unless bears become habituated to human foods. Trailheads will include information on proper techniques for minimizing bear-human conflicts.

MSO – see discussion of Issue #2.

Unique plants – riparian vegetation occurs in a small patch at the spring site. People and wildlife currently trample these plants during the summer months. The plants are maintaining themselves but are not expanding. The spring and its associated vegetation provides potential habitat for other rare species in the Little Springs area including Navajo Mountain Mexican voles, mountain silverspot butterfly, blue-black silverspot butterfly, and northern leopard frog.

Cultural values – The Little Springs area has historical and cultural values. The spring was the base camp for C. Hart Merriam who developed a description of life zones that is commonly used today. The springs are part of the larger traditional cultural property as identified by local Native American tribes and springs in general hold high cultural value. Currently, the spring site is in moderate to good condition. Generally there are plants holding soil in place, the spring is running into its natural drainage, and litter is not prevalent. One social trail leading into the Little Spring area is poorly located and causing erosion because of its steep grade. This social trail and others will be obliterated in Alternatives A and C. Roads have been closed by other projects (PRD#63) to discourage motorized use in the area.

### **Direct and Indirect Effects**

The Arizona Trail as described under Alternatives A and C and D will only slightly contribute to impacts at Little Spring. Alternatives A and C include a direct trail link from the Arizona Trail to the Little Springs area. Use in this area is currently on social trails and off-trail. Although use in the area may increase it will be better managed, as off-trail use and the creation of social trails is often a result of a lack of appropriate and satisfactory trail opportunities (Dawson and Hendee, 2002). Designation and construction of the Arizona Trail under Alternatives A, C and D and the connecting trail in Alternatives A and C would provide such trail opportunities.

Wildlife uses of water - The State law of no camping within  $\frac{1}{4}$  mile is already in place and along with the camping restriction associated with the trail will extend no camping away from the spring. This will enhance the opportunity for wildlife to access the spring site as a water source.

Bear foraging – The addition of the Arizona Trail designation and construction under Alternatives A and C will increase the potential for human/bear encounters in the general area. The occasional loop trail hiker may increase the potential for bear encounter around the Little Spring site, but this increase is very minimal when considered with existing use. The camping restriction will reduce potential for human-bear conflicts in this area.

Unique Plants - Trampling of plants at the spring site, or other unique plants in the area is likely to occur at similar levels regardless of the alternative chosen for the Arizona Trail. So effects are the same for A, B, C, and D.

MSO - Effects to Mexican spotted owl area discussed above under Issue #2.

Cultural Values – As mentioned above, the Arizona Trail would contribute to human uses at the spring site only slightly from the occasional loop trail hiker. This increase is not expected to adversely affect cultural and archaeological values. Culturally sensitive places will be avoided in all alternatives. There are no structures associated with the C. Hart Merriam Base camp. This historical site is maintained currently and would continue to be maintained under any of the alternatives (A, B, C, and D). Managing use and reducing dispersed recreation will minimize impacts to cultural resources.

### **Cumulative Effects**

The Little Springs Restoration project was implemented in 1996/1997 and included road obliteration, extension of the Bismarck Motorized Restricted Use Area (PRD#63), and spring site improvement. The runoff from the spring was re-channeled back into its natural drainage. Disturbance from road obliteration and fence construction is no longer evident and the area has re-vegetated.

There are no other projects planned, currently underway or proposed that would have effects additive to the effects of the Arizona Trail.

Recreation activities will continue including hiking, biking and horse riding on the social trails within the area. Traffic will continue at the outer perimeter of the area along Forest Roads 418 and 151. There will continue to be some cross-country travel by off-trail users. The Arizona Trail would slightly increase use in this area potentially causing increased impacts. However, the closure of social trails and concentrating of use on a developed trail will mitigate and focus these impacts.

***Issue #4 the proposed route does not include the Snowbowl parking area – people are hiking down the hill from the lot anyway. People will cross country to trail. Also, proposed route lacks access for too long of a portion. People may park along Snowbowl Road if we don't provide a trailhead in the area.***

## **Humphreys Trailhead Area at the Lower Snowbowl Parking Lot**

### **Affected Environment**

The lower parking lot of Snowbowl currently provides summertime parking for the Humphrey's Peak Trail, and people seeking a high elevation viewpoint. The paved Snowbowl Road experiences high levels of traffic during the summer and people often park at the lower parking lot for picnics. In addition, recreation use patterns reflect that many people prefer hiking a short distance from the trailhead and have created several social trails in the meadow below the parking area. It is estimated that over 30,000 people visit this site during the summer months (based on Humphrey's Peak Trail register data). Currently the Arizona Snowbowl provides a temporary toilet facility at the site. The District intends to establish a permanent restroom facility at the site as funds become available.

### **Direct and Indirect Effects**

If a trail link were established to the Arizona Trail as described in option A1 and C1, there would be a very slight increase in the numbers of people driving to the lower parking lot at Snowbowl. This increase would be those people driving to the lot for the purpose of hiking that portion of the Arizona Trail. The slight increase is not expected to affect the plants or wildlife of the area more than they are already being affected by current use. Currently use of this parking area outside the ski season is largely for access to the Humphrey's Trail. Use of this wilderness trail is very high, however much of the use is focused on the first few miles. The construction of a Arizona Trail connection and interpretive loop trail (option A1 and C1) would likely serve to funnel some of this use away from the Humphrey's Trail, and out of the Wilderness, on to the loop trail.

The loop trail proposed as a part of the connection would channel use onto an interpretive loop trail located to limit effects to turkey and other wildlife. This would lessen the amount of people that walk randomly into meadows. Interpretive signs would include messages about the unique habitat and high mountain qualities, cultural values, discourage littering, discourage off trail hiking, and provide for education.

If the trail link was not provided, it is possible that some people would be parking at the parking lot or along Snowbowl road and hike cross-country to access the Arizona Trail. It is unknown how many people would do this.

There is not a trail link necessary under Alternative D because there is not a logical connection to the Humphrey's Trail. In addition there is no parking allowed on the Snowbowl Road so people cannot access the trail from the road. Alternative D does not lack potential access points along any stretch of the route.

### **Cumulative Effects**

No other projects are planned, underway or proposed that would increase the numbers of people that use the lower parking lot at Snowbowl during the summer.

The Arizona Snowbowl Facilities Improvement Project currently in the planning stages, may have short term effects on plants and wildlife habitat during construction in the summer months. The additive effect from the Arizona Trail, to these short-term construction effects is not expected to be significant.

### ***Threatened or Endangered Species***

Effects related to Mexican spotted owl are located under Issue#2 above. Adverse affects are expected due to building trail in PACs (PRD#41). The Arizona Trail –Peaks Segment is not likely to jeopardize proposed critical habitat (PRD#85).

There is no effect from any alternative on bald eagle (PRD#41).

There is no effect from any alternative on potential black-footed ferret habitat (PRD#41).

There is no effect from any alternative on San Francisco Peaks groundsel or its habitat (PRD#86).

### **Forest Service Region Three Sensitive Species**

Species that are known to occur or have potential habitat along the alternative trail routes are listed in the table below. No alternative will result in a trend toward federal listing or loss of viability. Effects on Region Three Forest Service Sensitive Species are listed below.

<b>SPECIES NAME</b>	<b>DETERMINATION</b>	<b>WHY</b>
American Peregrine Falcon	“No impact”	Nearest nest location over 2.5 miles from trail. Foraging habitat up to 20 miles from nest. No key foraging impacted.
Northern Goshawk	“May impact individuals, but not likely to result in trend toward federal listing or loss of viability”	All alternatives pass through potential habitat for northern goshawks. No impacts to habitat. Alt. A and C pass through PFAs. No disturbance in nesting stands. Potential disturbance in foraging habitat and unoccupied nesting habitat. See discussion.
Northern Leopard Frog	“No impact”	Potential habitat at Little Springs. No historic habitat. AZ Trail is 1 mile from Little Spring. Bismarck Loop may increase use at spring slightly in Alternative A and C.
Mountain Silverspot Butterfly	“May impact individuals, but not likely to result in trend toward federal listing or loss of viability”	Potential habitat for host plant at Little Spring. Trail location approximately 1 mile from Little Springs. Bismarck Loop may increase use at spring slightly in Alternative A and C.
Blue-black Silverspot Butterfly	“May impact, individuals, but not likely to result in trend toward federal listing or loss of viability”	Potential habitat for host plant at Little Spring. Trail location approximately 1 mile from Little Springs. Bismarck Loop may increase use at spring slightly in Alternative A and C.
Early Elfin	“No impact”	No habitat will be impacted by trail construction.

Chapter 3 – Environmental Consequences

<b>SPECIES NAME</b>	<b>DETERMINATION</b>	<b>WHY</b>
Rusby’s Milkvetch	“May impact individuals, but not likely to result in trend toward federal listing or loss of viability ”	Trail location will be surveyed prior to or along with construction. Plants will be avoided. Soil and vegetation disturbance during trail construction may impact potential habitat. Individual plants along portions of existing trail may be trampled although trail edges provide habitat.
Flagstaff Beardtongue	“No impact”	Trail location will be surveyed prior to or along with construction. Plants will be avoided.
Navajo Mountain Mexican Vole	“May impact individuals, but not likely to result in trend toward federal listing or loss of viability”	Suitable habitat. Soil and vegetation disturbance during trail construction may impact runways and potential habitat. Social trail closures would improve habitat.

### **Management Indicator Species**

A working draft forest-wide assessment entitled "Management Indicator Species Status Report for the Coconino National Forest" dated 7/1/02 summarizes current knowledge of population and habitat trends for species identified as management indicator species (MIS) for the Coconino National Forest (USDA Forest Service, 2002a). Population trends need to be monitored as the Forest Plan is implemented, and relationships to habitat changes over time determined (36 CFR 219.19).

The table below lists MIS for the project and impacts. No alternative will impact population trends of MIS. Because turkey habitat was an important feature in the design of the project, a detailed discussion follows this table.

MA	MIS	HABITAT SPECIFICS	IMPACTS
3,4	Northern Goshawk	Occupied nesting habitat in Alts. A and C.	No impacts to nesting activity (see issue#2 above). No impact to habitat.
3,4	Pygmy Nuthatch	Snag dependant, secondary nester, prefers large yellow pine. Social species.	No habitat impacts. No trees greater than 9" diameter are cut. Potential human disturbance along trail zone of influence.
3,4	Turkey	Key reproductive and summer habitat in Alt. A and C.	Human disturbance. Trail modification to reduce impacts (see discussion).
3,4	Red Squirrel	Mixed conifer dependant species.	No habitat impacts. No trees greater than 9" diameter are cut. No effect to cone caches.
3,4	Mexican Spotted Owl	Nesting habitat in Alt. A and C. Passes through four designated PACs.	Human disturbance concerns in Alt. A, C, and D (see discussion).
3,4,7,8,9	Elk	Key reproductive areas in Alt. A, C, and D.	Human disturbance (see discussion).
3,4	Abert Squirrel	Pole-sized ponderosa pine.	No habitat impacts. No trees greater than 9" diameter are cut.
3,4	Hairy Woodpecker	Snag dependent, primary cavity excavator/nester.	No habitat impacts. No trees or snags greater than 9" diameter are cut.
9	Antelope	Found in grasslands. No key antelope areas identified.	No impacts.
7,8	Juniper Titmouse	Found in pinyon-juniper woodland. Secondary cavity nesters prefer juniper trees.	No habitat impacts. No juniper trees will be cut. No new construction in habitat.
5,7,8	Mule Deer	Key reproductive and summer habitat in Alt. A, C, and D.	No habitat impacts. Human disturbance concerns in all alternatives.
5	Yellow-bellied Sapsucker	Nests primarily in aspen. Nest trees are a minimum 10"diameter.	No habitat impacts. No trees or snags larger than 9" diameter are cut.

## **Turkey Habitat**

### **Affected Environment**

Key habitat attributes for turkeys include: availability of roost trees in summer and winter range which consist of groups of large yellow pines; uneven aged overstory structure; nesting areas; mast from ponderosa pine, pinyon pine, juniper and oak; riparian areas around springs and seeps, and small openings for seedhead and invertebrate production. Mast production is vital to how well turkeys overwinter and it is tied to the amount and timing of precipitation.

A turkey nesting area of 1,470 acres is identified in the area of Little Springs, Bismarck Lake and Lew Tank. Turkey utilize edge habitat between adjacent forest and meadow that provides important breeding and brooding habitat for turkey in the vicinity of Little Springs, Bismarck Lake, Lew Tank and south to Alfa Fia Tank. There is an existing trail providing non-motorized access to Bismarck Lake.

Turkey population trends tend to vary depending on location. This project falls within Game Management Unit 7, which shows a relatively stable trend for turkey (USFS 2002).

### **Environmental Consequences**

Turkey is the big game species most intolerant of humans. Human disturbance can cause turkeys to abandon areas and nests. They have superior eyesight, and depending on topography and cover, may be affected by hikers up to ½ mile away. Turkeys tend to avoid humans and move when hearing people approaching. There are key use areas that are around waters and in small openings and along edge. If too much of an area is criss-crossed by roads or trails turkey may be very much affected. Lindezey (1967) reported that turkeys are not compatible with heavily used recreation areas and even occasional use in some areas may cause nest abandonment. Wright and Speake (1975) noted that foot traffic had an adverse effect on the use of an area by turkeys.

There is a slight direct effect to plants in nesting and foraging habitat where the 24” tread for the trail is constructed. No effects to other habitat attributes will occur in any alternative.

Nesting and Brooding – Alternatives A and C intersect turkey nesting habitat. The turkey nesting area of 1,470 acres is identified in the area of Little Springs, Bismarck Lake and Lew Tank. All alternatives pass within 1 mile of Little Springs and Alternatives A and C pass within less than ¼ mile of Bismarck Lake and alongside Lew Tank. Alternatives A and C incorporate a loop trail from Bismarck Trailhead to Little Springs. This loop is designed to better manage existing use in this area and provide a more managed situation to lessen impacts of dispersed, and off-trail use. Alternatives A and C pass through or near small openings and larger meadows used for foraging during the summer months. The design feature of moving the trail in and out of edge habitat will lessen effects. Trail use is expected to be heaviest during the day from mid-morning to mid-afternoon. Turkey will utilize these areas more in the evenings. Turkeys will likely utilize areas away from the trail for nesting and forage along the trail when hikers are not present. For alternatives A and C the trail impacts only a portion of the available nesting and brooding habitat and will not cause significant stress or reduction of reproductive success.

Alternative D also passes through some openings and small meadows used by turkey for foraging but does not intersect nesting habitat. The effect is less than alternative A and C in that alternative D will not reduce available nesting habitat by means of disturbance.

Roosting- yellow pines will not be removed in any of the alternatives and therefore no roost trees will be impacted. No roosts have been identified within the corridor for any alternative.

Current dispersed use of the lower parking lot at Snowbowl is likely limiting turkey utilization of this area. Alternative A1 and C1 may focus recreation use at the Snowbowl Trailhead but will likely continue to limit turkey utilization of the meadow edge within a turkey's line of sight of the loop trail.

### **Cumulative Effects**

The effects to turkey habitat are additive to similar effects from the Snowbowl Facilities Improvement Project. If approved, there would be short-term effects to turkey habitat along the pipeline corridor and in the Hart Prairie area during construction. For Alternative C1, turkey would likely limit use within ½-mile of the interpretive trail loop and the existing Humphrey's Trailhead. The remainder of the trail will be designed to reduce impacts to turkeys. The cumulative effects from the Arizona Trail and the Snowbowl Facilities Improvement project would not cause viability concerns.

There are no other projects recently completed, underway or planned that effect turkey habitat in the project area.

Recreation activities will continue along each of the alternative trail routes. Hiking, biking and horse riding occurs on many of the Forest roads in the vicinity of Alternative D. Some social trails and roads also exist and receive use in the vicinity of the Alternative D route.

In the vicinity of the Alternative A and C routes, there is primarily non-motorized recreation on social trails and also some cross-country travel. This use affects turkey and impacts along the Arizona Trail are additive. This is offset by the likelihood that more people will stay on the established Arizona Trail route and the amount of social trail and cross country use may diminish.

### **Migratory Bird Species**

President Clinton signed Executive Order 13186 on January 10, 2001, placing emphasis on conservation of migratory birds. This order requires that an analysis be made on the effects of Forest Service actions on Species of Concern listed by Partners in Flight, the effects on Important Bird Areas (IBA's) identified by Partners in Flight (Latta, et al., 1999), and the effects to important overwintering areas. There are no IBA's within the alternative trail routes. The following is a description of the species' status within the alternative trail routes and an analysis of effects for each alternative. The following tables summarize each migratory bird species of concern by habitat.

**Migratory Birds – Pine type habitat priority species**

PRIORITY SPECIES	STATUS IN THE PROJECT AREA	FINDINGS
Olive-sided Flycatcher	BBS data indicates that this species exists in low numbers, but is stable to slightly increasing within the alternative trail routes.	Trails in forests likely disrupt songbird breeding activities and/or displace birds from the zone of influence. No impact on habitat is expected.
Cordilleran Flycatcher	It is expected that this species is static to increasing within the alternative trail routes.	Trails in forests likely disrupt songbird breeding activities and/or displace birds from the zone of influence. No impact on habitat is expected.
Purple Martin	BBS data indicates that this species is static to slightly declining in the alternative trail routes. Nesting sites in snags.	Trails in forests likely disrupt songbird breeding activities and/or displace birds from the zone of influence. No impact on habitat is expected.

**Migratory Birds - Pinyon-juniper habitat priority species**

PRIORITY SPECIES	STATUS IN THE PROJECT AREA	FINDINGS
Gray Flycatcher	Status of gray flycatchers is expected to be static to increasing. Expected to be common in alternative trail routes.	Trails in forests likely disrupt songbird breeding activities and/or displace birds from the zone of influence. No impact on habitat is expected.
Pinyon Jay	Mixed stands of pinyon-juniper occur over large areas and pinyon heavily impacted by drought and beetle kill. In general, trees greater than 75 years old are preferred in large numbers. Pinyon jays were common on the area prior to beetle kill. Their presence and breeding behavior is dependent upon availability of pine seed crops. Social species.	Trails in forests likely disrupt songbird breeding activities and/or displace birds from the zone of influence. No impact on habitat is expected. May be less tolerant to disturbance than solitary species.

PRIORITY SPECIES	STATUS IN THE PROJECT AREA	FINDINGS
Gray Vireo	Gray vireos generally occur at naturally low population densities. Within the alternative trail routes, rare open stands of mature pinyon-juniper are interspersed with areas of young trees. In general, mature stands of pinyon-juniper within the alternative trail routes have much higher tree densities than the preferred 280 trees per hectare, thus limiting the availability of habitat for this species. Common in the alternative trail routes. Considered to be stable within the project area.	Trails in forests likely disrupt songbird breeding activities and/or displace birds from the zone of influence. No impact on habitat is expected.
Black-throated Gray Warbler	They are common within the alternative trail routes and are considered to be stable to increasing.	Trails in forests likely disrupt songbird breeding activities and/or displace birds from the zone of influence. No impact on habitat is expected.

**Migratory Birds - High elevation grassland habitat priority species**

PRIORITY SPECIES	STATUS IN THE PROJECT AREA	FINDINGS
Ferruginous Hawk	No known nesting. Fall migratory use in grasslands in the Hart Prairie area. No key foraging. This species is expected to be static within the alternative trail routes. More potential foraging in Alt. A and C, than D.	None of the alternatives are expected to impact this species.
Swainson’s Hawk	No known nesting. Swainson’s hawks occupy grassland habitats within the alternative trail routes, although habitat is limited to short grass prairie habitats. Woodland encroachment into these grasslands and global decreases in this species numbers are expected to be resulting in static to decreasing numbers of Swainson’s hawks within the alternative trail routes. More potential foraging habitat in Alt. A and C, than D.	None of the alternatives are expected to impact this species.
Burrowing Owl	Habitat is limited to grasslands along the alternative trail routes	None of the alternatives are expected to impact this

PRIORITY SPECIES	STATUS IN THE PROJECT AREA	FINDINGS
	Burrowing owls are not documented in area. Considered to be declining throughout the majority of their range. Population numbers vary with burrow availability. Within the alternative trail routes, they are expected to be stable to slightly declining. Trail passes through more potential habitat in Alt. A and C, than D.	species.

**Migratory Birds - high elevation riparian habitat species**

PRIORITY SPECIES	STATUS IN THE PROJECT AREA	FINDINGS
MacGillivray’s Warbler	Potential habitat in springs. No fragmentation of this high valued habitat. Trail passes through more potential habitat in Alt. A and C, than D.	Any alternative should not alter habitat. Trails in forests likely disrupt songbird breeding activities and/or displace birds from the zone of influence. Alternatives A and C may slightly increase disturbance near Little Spring.
Red-faced Warbler	Potential habitat in springs. No fragmentation of this high valued habitat. Trail passes through more potential habitat in Alt. A and C, than D.	Any alternative should not alter habitat. Trails in forests likely disrupt songbird breeding activities and/or displace birds from the zone of influence. Alternatives A and C may slightly increase disturbance near Little Spring.

There is limited information regarding songbird's tolerance to human disturbance. In general, a simplification of bird communities occurs along recreational trails with generalist species more abundant near trails and specialists less common. Animals that feed in social groups (pinyon jay, pygmy nuthatch) are thought to respond quicker to disturbance than solitary ones because of increased vigilance and the past experiences of other individual birds in the groups (Knight and Cole 1995). Miller *et al* (1998) found the majority of species were found in reduced numbers near trails, the zone of influence of trails appears to be about 240 feet. Certain species, exhibited reduced numbers as far as 320 feet away from trails.

Miller also maintains that consolidation of trails to certain areas (i.e. edges of forest and grassland) will reduce the fragmentation of large blocks of habitat, maintaining less-disturbed areas for species sensitive to fragmentation. New trail construction is designed to consolidate dispersed use and reduce fragmentation.

## **Elk**

Because many people commented on the effects of the alternative trail routes on elk habitat, a brief description of effects is included here.

There is no substantial impact to elk or elk habitat from any alternative.

### **Affected Environment**

The project area is in summer elk habitat. Elk move off the slopes of the San Francisco Mountains to water and feed in evening, night, and early morning hours. Elk calving and deer fawning have been documented in several areas around the San Francisco Mountains.

Overall elk are considered to be stable on the Coconino National Forest and Game Management Unit 7 shows a general increasing trend (USDA Forest Service 2002). Productivity tends to be high and herds are located in all habitat types. The objective of the Arizona Game and Fish Department is to maintain a stable to gradually declining population over time, with specific objectives for specific areas (AGFD 2001). In GMU 7 the objective is to continue this trend into 2004. Elk are found throughout the project area.

### **Direct and Indirect Effects**

Elk and deer will most likely be displaced up to ¼ mile either side of the trail where it passes through forested areas. The amount of cover provided by vegetation and topography influence the actual distance. Elk will commonly use areas at night after humans have left. In the future, numbers of hikers may reach a level that results in elk avoidance of the trail during daytime hours.

Alternative A and C would cause disturbance in calving and fawning areas. The trail transects an area along the western side of the San Francisco Mountains and White Horse Hills used for elk calving and deer fawning for approximately four miles (roughly 1,270 acres if the zone of influence for calving/fawning is ¼ mile from the trail). Over 15,000 acres along the western edge of these mountains have been identified as being used for elk calving and deer fawning. The trail could reduce the area for calving/fawning, reducing the available area by 4%. Due to the large area available for elk and deer fawning, reducing the area by 4% would not have a measurable impact on reproduction of elk and deer in the project area.

Alternative D would have less impact to elk calving and deer fawning.

The no action alternative may impact elk and deer due to unmanaged social trails in the calving area.

The Arizona Trail falls into GMU 7 and the goal of the Arizona Game and Fish Department is to stabilize or continue reductions of elk in the project area (AGFD 2001).

### **Cumulative Effects**

Recreation activities will continue along each of the alternative trail routes. Hiking, biking and horse riding occurs on many of the Forest roads in the vicinity of Alternative D. Some social trails and roads also exist and receive use in the vicinity of the Alternative D route. Cumulative impacts from this general recreation use and the Arizona Trail use are not substantial.

In the vicinity of the Alternative A and C routes, there is primarily non-motorized recreation on social trails and also some cross-country travel. This is offset by the likelihood that more people will stay on the established Arizona Trail route and the amount of social trail and cross country use may diminish.

The Bismarck Lake Closure area is a motorized restricted use area was a cooperative project with U.S. Forest Service, Arizona Game and Fish Department, The Rocky Mountain Elk Foundation, Coconino Sportsman and The Wilson Trust. This project was intended to close roads to motorized use and improve habitat quality for this elk summer range.

### **Bear**

Because many people asked about impacts to bear habitat a brief description is included here. The Little Springs area is discussed in more detail under Issue#3.

### **Affected Environment**

Bears are widely distributed in Arizona. Black bears likely inhabit the Kachina Peaks Wilderness and surrounding areas. They are known to forage in the Little Springs area. There are no known reproductive or den sites or travelways in or near the project area.

Homes in this vicinity of black bear habitat may increase attractants to bears and therefore increase potential human-bear interactions.

### **Direct and Indirect Effects**

Limited research is available concerning the effects of recreational use of roads and trails on black bears. Brody and Pelton (1989) found that black bears did not restrict their movements in reaction to road density with established home ranges. Trails displace black bears less than open roads (Joslin 1999).

As human populations and the pursuit of recreation increase, conflicts between people and black bears will probably also increase. Education at trailheads will focus on controlling attractants and appropriate responses to bear encounters.

Alternatives A and C pass between bear habitat and private homes therefore hiker encounters with black bear may be greater than in Alternative D.

### **Cumulative Effects**

Recreation activities will continue along each of the alternative trail routes. Hiking, biking and horse riding occurs on many of the Forest roads in the vicinity of Alternative D. Some social trails and roads also exist and receive use in the vicinity of the Alternative D route. Cumulative impacts from this general recreation use and the Arizona Trail use are not an added effect to population trends.

In the vicinity of the Alternative A and C routes, there is primarily non-motorized recreation on social trails and also some cross-country travel. This is offset by the likelihood that more people will stay on the established Arizona Trail route and the amount of social trail and cross country use may diminish. There is not added effect to population trends as a result of this project. The activities may result in a cumulative increase in the frequency of encounters between humans and bears in the analysis area.

### **Mountain Lion**

Because many people asked about impacts to mountain lion habitat and the potential for human encounters with lion the section briefly discusses lion habitat related to the alternative trail routes.

### **Affected Environment**

Mountain lions are highly specialized predators adapted to thrive in a broad diversity of habitats. Mountain lion populations are thought to be slightly increasing and have a well-distributed, healthy population on the Coconino National Forest.

Homes in this vicinity of mountain lion habitat may increase attractants to lions and therefore increase potential human-lion interactions.

### **Direct and Indirect Effects**

The main concern with lions is the potential for the trail to increase lion/human encounters. As human populations and the pursuit of recreation increase, lion-human interactions will probably increase. Habituation and food conditioning of lions are factors in several human-lion interactions. Gradual habituation begins with humans living and recreating in lion habitat and lions feeding on human refuse, pets, or natural prey near campgrounds and residences (McBride and Ruth 1988, Aune 1991).

Education at trailheads will focus on keeping pets on leash, controlling attractants and appropriate aggressive responses to lion encounters.

Habitat fragmentation - Beier (1995) found that lions avoided corridors with excessive noise, lighting and domestic dogs yet readily used corridors without lighting, quiet motors, and trails heavily used by hikers, bicyclists, and equestrians (Joslin 1999). The trail is not expected to deter lions from using or moving through the vicinity.

## **Cumulative Effects**

Recreation activities will continue along each of the alternative trail routes. Hiking, biking and horse riding occurs on many of the Forest roads in the vicinity of Alternative D. The Nordic Center rents Mountain bikes in the summer months in a portion of this area. Some social trails and roads also exist and receive use in the vicinity of the Alternative D route. These activities may result in a cumulative increase in encounters between humans and mountain lions in the analysis area. In the vicinity of the Alternative A and C routes, there is primarily non-motorized recreation on social trails and also some cross-country travel. This is offset by the likelihood that more people will stay on the established Arizona Trail route and the amount of social trail and cross country use may diminish.

## **Habitat Fragmentation**

### **Affected Environment**

Analysis of Forest Service and Grand Canyon Trust Geographic Information System (GIS) data on the area west of the wilderness boundary and east of the private lands shows evidence of old roads. Old roads are no longer open to motorized travel; however mountain bikers, hikers and equestrians use them. In addition to the many roads that cross the area, many uninventoried social trails are also prevalent as noted by the ID Team. Private property is interspersed throughout most of the area. Forest Road 151 parallels the trail routes and is within 1-2 miles of each alternative.

Highway 180 and FR 151 provide access to motorized and non-motorized traffic in the Hart Prairie area. Hart Prairie, including Forest Roads 151 and 794 is documented to have 62,000 RVD'S<sup>18</sup> in an average year. Of those, a percentage hike, drive and mountain bike off existing roads. Currently there are no system trails in this area. Off-trail and road usage can be expected to continue, and in turn lead to more fragmentation, without the establishment of Forest Service system trail and the obliteration of social trails and social roads.

### **Direct and Indirect Effects**

While new trail construction, under Alternatives A, C and D would lead to additional habitat fragmentation, these effects are mitigated by the closure and obliteration of intersecting social and system trails and roads. Under Alternatives A and C, the construction or designation of the trail will add some fragmentation to an already fragmented area. Construction and designation of the Arizona Trail is tied to social and system trail closure and obliteration is expected to reduce habitat fragmentation, by collecting use to a single trail alignment. Many people tend to stay on established trails so the amount of social trail use may lessen as a result of the Arizona Trail construction (Dawson and Hendee 2002). The addition of the Bismarck Loop and subsequent obliteration of social trails is expected to reduce fragmentation in the Bismarck Lake/Little Springs area.

Alternative D slightly adds to fragmentation but this is slightly offset by locations where roads are converted to trail. Alternative D does not improve management or the fragmentation situation in the Bismarck Lake/Little Spring area, however.

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<sup>18</sup> RVD is a person recreating for any period of time within a 12 hour period.

## **Analysis of Other Aspects of the Environment**

Where the Arizona Trail would be designated on existing Forest Service system trail, there are no direct effects to soil or water quality, plants, or recreation experience beyond current effects from their use.

### ***Air Quality***

There is no affect to air quality from any alternative. There is no effect to the existing forest structure, types of trees or tree densities from any alternative. There is no change in the likelihood of fires.

### ***Plants***

#### **Direct and Indirect Effects**

There is a slight direct effect to plants where the 24-inch tread for the trail is constructed. The trail will remove a linear corridor of plant material from the area, but this will not affect the overall condition of the Forest understory. Trail design includes avoidance of sensitive plant locations so there is little effect from the trail to these species.

Equestrian use may increase the potential for spread of noxious weeds along the trail. Best Management Practices including monitoring and treatment of weed populations will be implemented along the trail corridor. Trail design includes identification of any non-native or invasive weed species that may exist and actions to prevent spread and/or eradicate the plants. Trailheads will be monitored annually to see if recreation users have transported non-native or invasive plants from other areas to the trailheads. There are few known populations of non-native or invasive plants along any of the alternative routes. Surveys have documented noxious weeds in the parking areas associated with the proposed Snowbowl Trailhead. These areas are currently and will continue to be monitored and treated on an annual basis. No alternative is expected to increase non-native and invasive weed species in the trail route areas.

#### **Cumulative Effects**

The effects to the understory plant community along the alternative trail routes is additive to similar effects from the Snowbowl Facilities Improvement Project. There will be short-term effects to plants within the Snowbowl permit area and along a proposed pipeline. The cumulative effects from the Arizona Trail, and all past, present and reasonably foreseeable activities were reviewed. The Arizona Trail combined with these activities may increase noxious weeds in the analysis area. The same measures of control and eradication of nonnative and invasive plant species will be undertaken for these projects.

### ***Soil and Water Quality***

#### **Schultz Creek Area**

Maintenance items should include rerouting small segments of the Schultz Creek trail slightly in order to reduce impacts on riparian vegetation. Water drainage could be improved by redesigning waterbars and grade dips. District soil and water specialists should work with the trail layout specialist to accomplish this.

Efforts should be made to continue to encourage users to stay on the trail tread. When large numbers of users are present on the trail, some people move off the trail to allow others to pass. Sometimes bikes travel off the trail to go around hikers or horses. This occurs within about 10-20 feet either side of the existing trail tread and can contribute to erosion. Continue to observe recreation use of this trail and correct of trail impacts if they occur. The trail can be widened in appropriate locations to allow for users to pass each other and to reduce off trail use. At some time, it may be necessary to evaluate options for reducing total numbers or types of use.

### **General Trail Route**

Trail maintenance and new trail construction will follow Best Management Practices and accepted trail standards as listed in the Forest Service Trails Handbook and Arizona Trail Management Guide. The trail will be designed and constructed to “lay lightly” on the land, following contours and conforming to standards for slope grades for moderate multi-use non-motorized trail. By keeping trail grade slopes in accepted ranges (generally from 5 to 12 percent), routing the trail through appropriate soils, designing and constructing drainage structures were needed, and armoring drainage crossings, on-site and off-site erosion will be minimized and insignificant. Given that trail will be well designed and located there are no perennial waters directly affected by any alternative trail location. There are minimal off-site erosion effects under any alternative.

### **Environmental Consequences**

Even with maintenance items described above, there will continue to be some off-site erosion from the trail into the Schultz creek drainage. The effect occurs under the no-action alternative and existing use levels. Most of the actual soil that comes off in a precipitation event is within the actual stream channel. This effect is not substantial. Maintenance activities described above can help keep the tread out of the creek itself, thereby reducing this effect. Additional recreational use that results from the Arizona Trail designation (Alternative C and D) is not expected to have a measurable increase (PRD#42).

Current motorized use of the Schultz Creek trail is not contributing extensively to soil and water impacts on Schultz Creek segment because the motorized use is a small percentage of the total use. Removing motorized use under Alternatives C and D may slightly offset the increased total use on the trail.

There are infiltration galleries in the vicinity of Schultz Tank used by the Doney Park Water Company. Use of the Sunset Trailhead and existing trail in the Schultz Creek Tank area will not affect the infiltration galleries. Currently, (no action) ruts are developing at the Schultz Pass Trailhead due to use in wet weather. Another maintenance item is to improve the surfacing at this trailhead.

For Alternatives A and C, the designation of a loop trail from Bismarck Lake connecting to the Arizona Trail and looping back around to Little Springs and the subsequent obliteration of social trails within the Little Springs area will bring trails up to Forest Service standards.

## Recreation Experience

### Affected Environment

The type of experience a person has while recreating on National Forest trails varies based on the personal observations and expectations of each person. However a high quality recreation experience can generally be described as follows,

- The diversity of vegetation
- The number and quality of vistas/viewpoints
- The number and quality of geographic or natural features
- The sights and sounds of buildings and highways
- The naturalness of the landscape and evidence of manipulation by humans
- The number of encounters with others
- Many people appreciate an easy to find trail that prevents getting lost

Many of these items are described in the recreation setting<sup>19</sup> for the area. Currently the trail routes pass through a combination of Roded Natural, Semi-primitive Non-motorized and Semi-primitive Motorized settings.

Currently recreational trail use consists of a combination foot, horse, mountain bike, and motorized use of old two-track roads, social (user-created) trails, and also a limited amount of cross-country travel.

### Direct and Indirect Effects

Diversity of Vegetation – The action alternatives pass through a variety of vegetation types compared in the table below.

Alternatives	Ponderosa pine	Mixed conifer and limber pine	Aspen	Open Grassland
Alternative A	25 miles	3.5 miles	2 miles	2 miles
Alternative B	N/A	N/A	N/A	N/A
Alternative C	25 miles	3.5 miles	2 miles	2 miles
Alternative D	26.5 miles	1 mile	2.5 miles	2 miles

Vistas and Viewpoints – Views east to the top of the San Francisco Peaks can be achieved under all alternatives. Alternative A and C have a greater number of vista’s and viewpoints than Alternative D. This is especially the case as the routes travel north from the Snowbowl road crossing to Kelly tank. There are multiple places along the Alternatives A and C route that provide views of the San Francisco Mountain to the west. As Alternatives A and C are higher elevation and closer to the peaks than Alternative D, there is a greater sense of being “on the mountain” This type of experience is similar to other Arizona Trail segments routed near high elevation mountains throughout the state including Mount Lemon (9,157’), Miller Peak (9,466’), and Mazatzal Peak (7,888’). This high elevation or “sky island” experience best meets the

<sup>19</sup> The Forest Service uses the Recreation Opportunity Spectrum (ROS) categories as a tool to describe forest settings.

Arizona Trail Association’s objective of highlighting prominent features along the trail. Some of the prominent landmarks that can also be seen from Alternatives A and C include Kendrick Mountain, Sitgreaves Mountain and in the distance, Bill Williams mountain. Under Alternative D, there are few, if any similar vista opportunities. The views of the peaks from Alternative D are distant and do not convey the same sense of traveling near or to this prominent landmark, however more of the mountain is visible at one time. For the portions of the trail routes in the Dry Lake Hills and Fort Valley areas the opportunities for vistas are the same for all the alternatives in that there are few in these areas. Vistas can be found by hiking cross-country, on old two track roads or social trails under Alternative B.

Geographic and Natural Features - Opportunities are similar under all the alternatives as trail passes through stands of ponderosa pine, interspersed with open meadows, and cut by rocky drainages. Evidence of the landscape’s volcanic history is evident, with volcanic boulders and rocks of all sizes dotting the hillsides and drainages. Alternatives A and C convey a greater sense of being in the mountains than Alternative D, due to their higher elevation route and proximity to the steep upper slopes and avalanche paths dropping from the peaks. In addition, the interpretive loop trail, under Alternative C1, provides the greatest education opportunity of natural and geographic features, cultural and Wilderness values, and wildlife habitat due to its proximity to the San Francisco Mountain, Kachina Peaks Wilderness, and interpretive features in the area (e.g. dendroglyphs). Furthermore, the Humphrey’s trailhead provides a paved access road, ample parking, and trash receptacles. This capitalizes on existing facilities and minimizes implementation costs.

Sights and Sounds of Buildings and Highways –The sights and sounds of buildings and highways are similar by Alternative in the Dry Lake Hills and Fort Valley areas. All alternatives in the Fort Valley area are approximately 1-3 miles from Highway 180 and levels of background vehicle noise vary among the alternatives. All trail routes cross the Snowbowl Road and people will hear and see vehicles when they are close to the road. From Snowbowl Road north to Kelly Tank the trail routes are different. Alternatives A and C are farther away from Highway 180 than Alternative D. There is virtually no noise from Highway 180 for Alternatives A and C. However, Alternatives A and C pass closer to residential homes in the Hart Prairie and the voices or dogs barking may be heard intermittently. Alternative D passes closer to Highway 180 and a steady highway noise will be heard in the background along a portion of this route. Alternative D passes near private land as well and the occasional voice or dog barking may be heard. Similar effects as described above occur for the two track roads, social trails and cross country hiking that occurs under Alternative B.

The Naturalness of the Landscape and Evidence of Alterations by Humans – Evidence of human use of the landscape is evident along all of Alternative routes. The Alternatives are similar in the Dry Lake Hills and Fort Valley areas. In the Fort Valley areas all routes pass through areas with recent evidence of thinning and prescribed burning. For the portion of the routes from Snowbowl Road north to Kelly Tank, Alternatives A and C pass through areas with some old road tracks and some social trails. There is little evidence of past tree cutting along the Alternative A and C routes for this portion. Alternative D has the most evidence of human use with multiple open roads, dispersed camping, and evidence of firewood cutting. As a result Alternative D provides a more disjointed and less cohesive recreational trail experience, as trail users will frequently encounter the evidence of closed roads and cross open roads. While some grazing allotments are currently in a non-use status, cattle may be seen along any of the Alternative routes per current range permits. Cattle may be more frequently seen along the Alternative D route. Similar effects as described above occur under Alternative B where people travel on old two track roads, social trails or cross-country.

The Number and Frequency of Encounters with Others – The number and frequency of encounters is similar for all the alternatives, however the type and duration of those encounters does vary between Alternatives A and C and Alternative D. The frequency of encounters and type of encounters can have a significant impact on the quality of a recreational trail experience. Non-motorized users are often suffering negative impacts on their experience after encounters with motorized users. Mountain bikes can have negative impacts on equestrian users. Trail use levels in the Flagstaff area is expected to increase at a similar rate as the population of the area increases, approximately 4 to 5% a year. Designation of existing trails as well as new construction part of the Arizona Trail is unlikely to lead to significant increases in use. Extensive inquiries to trail system coordinators nation-wide who manage similar long-distance trail opportunities (Appalachian Trail, Continental Divide Trail, and Pacific Crest Trail), resulted in little evidence of increased trail use attributed to labeling a trail a long distance trail.

Current use of system trails and social trails in the Mount Elden and Dry Lake Hills areas would lead to a number of encounters under all the alternatives. These encounters would be primarily of short duration as Arizona Trail users pass mountain bikers, hikers and horseback riders. In the Dry Lake Hills and Mount Elden areas of the Flagstaff urban interface these encounters would be more frequent on weekends and on weekday evenings, when usage peaks. The number and frequency of encounters under Alternatives C and D in the Fort Valley area would be less than the Dry Lake Hills area and be primarily with other hikers, bikers and horseback riders. Both of these alternatives cross Snowbowl Road where trail users would encounter highway traffic (discussed later in this section).

While Alternative D shares a similar route to Alternatives A and C through the Elden/Dry Lake Hills and Fort Valley areas (and in turn similar numbers and frequency of encounters), it passes through areas fragmented with many roads and social trails west of the Hart Prairie area. The proposed route of Alternative D through the Hart Prairie area skirts private lands, follows many old two-track roads, and is crossed by a number of Forest System Roads that would remain open to motorized use. Unlike the other alternatives, the type of encounter along this route could largely be with motorized users, including motor vehicles where the trail crosses Forest System Roads as well as dispersed car campers and hunting camps during the hunting season.

Designated Forest Service Trail Versus Social Trail Experiences – There is a discernable difference between recreational experiences on designated, engineered and maintained Forest Service system trails and social, user-created trails. While trail planners strive to design and construct trails that seem to have “just happened” and that blend into their environment, this requires much thought and care. As such, a well-designed and constructed trail will guide the users through the environment subtly and in such a manner that resource impacts are minimized and the final product is a sustainable trail that best meets the needs of the intended user group(s). Social, user-created trails, however, are most often not designed or planned, but rather just occur from repeated use. As such, their route often follows drainages, contains steep grades and has little or no erosion control structures. These routes can be circuitous and tend to have many spurs and side trails. In addition, social trails are often located with little regard to cultural or biological considerations. The experience of a Forest Service system trail can be seen as not only a more positive and satisfactory experience for most users, but safer and less impactful as well.

## **Wilderness Values**

### **Affected Environment**

All of the alternatives pass outside of the wilderness reducing any potential impacts on wilderness values. Wilderness values may only be impacted by Options A1 and C1 of Alternatives A and C, and by the possible off-trail hiking. Options A1 and C1 provide for a Arizona Trail connection from the lower parking lot of the Arizona Snowbowl. This parking area is the primarily trailhead for the Humphrey's Trail, which leads into the wilderness. While the loop trail is outside of the wilderness its development and use may affect wilderness values. Off trail and cross-country hiking does not normally affect wilderness values, as long as the amount of this use is low. However, if the numbers of cross-country travelers becomes too great, there could be negative effects to the wilderness character and resource. Established and designated trail opportunities have a tendency to reduce off-trail and cross-country use, and the establishment of the Arizona Trail should be expected to limit this potential affect on wilderness values.

### **Direct Effects**

There are no direct effects from any alternative from any trail route.

### **Indirect Effects**

If a trail link were established to the Arizona Trail as described in option A1 and C1, there would be a very slight increase in the numbers of people driving to the lower parking lot at Snowbowl. This increase would be those people driving to the lot for the purpose of hiking that portion of the Arizona Trail. Currently, use of this parking area outside the ski season is largely for access to the Humphrey's Trail and the Kachina Peaks Wilderness. Use of this wilderness trail is very high, however much of the use is focused on the first few miles. The construction of an Arizona Trail connection and interpretive loop trail (option A1 and C1) would likely serve to funnel some of this use away from the Humphrey's Trail, and out of the Wilderness, on to the loop trail. While some use would be funneled away, use of both the loop trail and the Humphrey's Trail may see slight increases. These increases, however, are likely to be insignificant.

Off trail hiking is expected to be similar under all action alternatives. As was discussed earlier, off-trail use and the creation of social trails is often a result of a lack of appropriate and satisfactory trail opportunities (Dawson and Hendee, 2002). While all off-trail use cannot be eliminated or prevented, Alternative D presents the least opportunity for such a use having an indirect effect on wilderness values as its proposed route is the furthest from the wilderness boundary.

### **Fire Risk**

Although not raised as a significant issue, this topic is described here because of interest raised from public comment.

Forest Service electronic map coverages of fire starts and system trails (motorized and non-motorized) shows less than 3 % of fire starts within 300 feet of trails. The percentage of non-

motorized starts would be expected to be even lower. In addition, current fire restrictions will occur as needed forest wide.

There were 979 human-caused fires recorded from 1994 through 1998 on the Coconino National Forest. Of those, 26 were within 300 feet of a system trail. This equates to less than 3 percent of the total human caused fires over this time period. Of the 26 fires recorded, campfires caused 15, 1 from smoking, 1 from debris, 1 from children and the remaining 8 were of an unknown cause.

We do however see an increase in human-caused fires associated with roads. Fires from escaped campfires occur in both designated and dispersed campsites, adjacent to roads.

Forest Service regulation allows for fire restrictions to be imposed during times of increased fire danger. This can include campfires and smoking restrictions as well as Forest Closure. The Arizona Trail will be under the same restrictions as other National Forest Lands.

Designated dispersed camp-sites would be available to Arizona Trail users approximately ½ mile from all action alternatives along Freidlein Prairie Road (FR 522) adjacent to the Ft. Valley area. The portion of the Arizona Trail that borders the western side of the Kachina Peaks Wilderness is at a high elevation (8,900') with an abbreviated fire season due to cooler temperatures and more moisture.

Camping will be restricted within the Little Springs and Bismarck Lake areas due to mitigation for the Mexican spotted owl and restrictions for camping within ¼ mile from any water source further reducing potential for escaped campfires. In the area on the north side of White Horse Hills the fire danger is greatly reduced due to the past fire history in the area. This area was burned during a major wildfire in 1996 and would not be expected to burn again for 10 to 20 years.

## **Public Health and Safety**

Trails in general do not pose a public health and safety concern. Alternative C removes motorized use from the Schultz Creek Trail thereby reducing safety concerns that emanate from combined motorized and non-motorized use. Where the Arizona Trail crosses roads appropriate measures will be taken to ensure safe crossing. A concern was raised that the location of trail adjacent to private property could lead to an increase in vandalism, theft and other crimes. However, trail research indicates that very little, if any, vandalism or property damage is associated with trails located near private property. In fact, several studies indicated that trails near private property actually provide greater benefits (Morris and Tracy, 1998; Colorado State Parks, 1995; Murphy, 1992).

## **Environmental Justice**

The issue of environmental equity and justice in natural resource allocation and decision making is receiving increasing political and social attention. Following President Clinton's Executive Order 12898 (Federal Register, February 1994) all Federal land management agencies have been mandated to address environmental justice in nonwhite and/or low-income populations, with the goal of achieving environmental protection for all communities regardless of their racial and economic composition.

Alternatives A, B, C, and D do not result in disproportionate impacts to low-income populations, nor do they impact minority populations.

## Chapter 4 - Consultation and Coordination

The Forest Service consulted the following individuals, Federal, state and local agencies, tribes and non-Forest Service persons during the development of this environmental assessment:

### ID TEAM MEMBERS:

Brian Poturalski and Andrew Johnson –  
Recreation Planners

Cary Thompson – Interdisciplinary  
Team Leader and Wildlife Biologist

Debbie Kill – NEPA Specialist

John L Nelson – Recreation Staff

Heather Cooper - Archaeologist

### FEDERAL, STATE, AND LOCAL AGENCIES:

U.S. Fish and Wildlife Service

Arizona Game and Fish Department

Coconino County

City of Flagstaff

SHPO Arizona State Parks

### TRIBES:

Dine' Medicine Man's Association

Fort McDowell Yavapai Nation

Hopi Tribe

Hualapai Tribe

Havasupai Tribe

Navajo Nation

Pueblo of Acoma

Pueblo of Zuni

San Carlos Apache Tribe

San Juan Southern Paiute Tribe

Tonto Apache Tribe

Yavapai-Apache Nation

Yavapai-Prescott Tribe

White Mountain Apache Tribe

### OTHERS:

Grand Canyon Trust

Arizona Trail Association

The Nature Conservancy

Homeowners in Hart Prairie and  
Whitehorse Hills Area – mail list 145  
names

Forest Plan Mail List – 500+ names

## Chapter 5 - References and Literature Cited

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# APPENDIX A

## *CRITERIA FOR EVALUATION OF SPECIAL USE PERMIT APPLICATIONS*

Applications for special use permits for Outfitter and Guide operations or special events on National Forest lands, and trails, are analyzed through an established, multi-step process and approved or disapproved by the appropriate line officer (district rangers or forest supervisor).

There are, essentially, three major steps to the analysis or screening process. These include a primary screening of nine criteria established in 36 CFR 251.54(e)(1)(i-ix). A second level of screening reviews five criteria established in 36 CFR 251.54(e)(5)(i-v). If a permit passes through to this level various Forest Service natural resource specialists evaluate it for its direct or indirect environmental impacts. If appropriate a permit is evaluated for a categorical exclusion from the NEPA process as set out in FSH 1909.15, Chapter 30, 31.1b. If the application meets these categorical exclusion criteria and does not trigger any of the seven extraordinary circumstances as contained in FSH 1909.15, Chapter 30,31.1b., it can be considered for approval.

For outfitter and guide applications an additional analysis of the proposed activity is conducted to determine if the forest can sustain the additional level of use.

# APPENDIX B

## *Response to Substantive Comments*

The following people commented on the Arizona Trail – Peaks Segment Environmental Assessment. All comments were timely and substantive. The people listed that do not have appeal rights did not include a mailing address as required by the Forest Service appeal regulations, 36 CFR 215.2.

<b>Doc</b>	<b>Author/Signee</b>	<b>Official Organization</b>	<b>Appeal Rights</b>	<b>Response #</b>
1	John Kennedy	AZ Game and Fish Depart.	yes	25,4
2	Jan Hancock/ Eric Smith	AZ Trail Association	yes	26
3	Sam Campana	National Audobon Society	yes	26
4	Aumack, Ethan		yes	3,10,15,16,32
5	Aumack, Lisa		yes	5,8,13,14,15,23
6	Baierlein, Ralph		yes	26
7	Jacobs, Billie		yes	15
8	Bryant, Dick		yes	26
9	Buchanan, Jim	Backcountry Horseman	yes	26
10	Cherow, Les and Annette		yes	3,8,15,16
11	McCormick, Jay		yes	23,32
12	Gold, Abe		yes	26
13	Cynthia A. Lovely	Coconino County Parks & Rec	yes	26
14	Conant, Judy		yes	32
15	Cox, Laddie		no	26

Doc	Author/Signee	Official Organization	Appeal Rights	Response #
16	Cusack, Joan		yes	9
17	Cusack, Patrick		yes	19
18	Degraff, David and Mindy		yes	3,5,8,25,31
19	Kluwin Gisela		yes	8,31
20	Martin, Jim		yes	26
21	Emrick, Roy M		yes	26
22	Quintele/Cross/Welch/Bensen	Flagstaff Biking Organization	yes	26
23	Forbes, Laura		yes	1,32
24	Gay, Terri		yes	26
25	Flint, Mark	Sonoran Desert Mountain Bicyclists	yes	26
26	Schuelke, Neva		yes	26
27	Golnik, Carl		no	26
28	Michele James	Grand Canyon Trust	yes	1,2,3,15,31
29	Hancock, Jan		yes	26
30	Handy, Jeff		yes	26
31	Hansen, Cathy		no	26
32	Hanson, Scott		no	26
33	Harris, Kurt, Julie, Carter & Abel		yes	26
34	Henderson, Dawson		yes	26
35	Hoover, Lou		yes	26
36	Heath, Therrien		yes	26
37	Ralley, Phyllis		yes	26

Doc	Author/Signee	Official Organization	Appeal Rights	Response #
38	Kopecky, Bev		yes	6,7,9,13,17,19,20,21,22
39	Luecker, Amanda		yes	26
40	Luecker, P.E. , Mike		yes	26
41	Markiewicz, Matt		yes	3,4,5,6,7,8,19,23,24,2,32
42	Maxa, Christina		no	26
43	Meyer, Paul		no	26
44	Michaels, Andrea		yes	26
45	Missal, Larry E.		yes	26
46	Patterson, Kevin		no	26
47	Edwards, Anne or Richard		no	26
48	Rauci, Jason		yes	29
49	Richard F. and Jean H. Wilson		yes	27,31
50	R. Wilson/J. Wilson/R. Koons	Robert T. Wilson Foundation	yes	15,24
51	Robert, Mike and Verla		no	5,13,15
52	Rowe, Hank		yes	26
53	Ryan, Chris H.		yes	31
54	Schaal, Randy		yes	31
55	Shewalter, Dale		no	26
56	Parmer Merle E.		yes	26
57	Snead, Larry		yes	26
58	Stryker, Jack		yes	3,8,15,30
59	Sullivan, Carol		yes	26
60	Taylor, Kent A.		yes	26
61	Leigh J. Kuwanwisiwma	The Hopi Tribe	yes	26

Doc	Author/Signee	Official Organization	Appeal Rights	Response #
62	Edward Smith	The Nature Conservancy	yes	10,11,12,15
63	Tusa, Sandra		no	29
64	Walsh, Dick		yes	26
65	Weinstein, Louis and Laura O'Hara		yes	8,30
66	Vlaming, Jon R. and Barbara L.		yes	26
67	Westermeyer, Jessica		no	26
68	Yares, Michael		yes	26
69	Buckhout, Marc		no	26
70	Shein, Dan		yes	26
71	Francis, Robin and Steve		yes	26
72	Charlene Todd		no	26
73	Showalter, Bev		no	26
74	Adams, Bob and Gayle		no	26
75	Garner, Doris		no	26
76	Cardinal, Barbara		no	26
77	Tigerman, Marcy		no	26
78	Horowitz, Beth M.		yes	26
79	Martin, David		yes	26
80	Nelson, Kathryn		yes	26
81	Gerratt, Rochelle		yes	26
82	Clares, Maggie		no	26
83	Little, Scott		no	26
84	Guinane, Scott and Christine		no	26
85	Ameln, Rob		no	26
86	Nelson, Jerry		no	n/a

<b>Doc</b>	<b>Author/Signee</b>	<b>Official Organization</b>	<b>Appeal Rights</b>	<b>Response #</b>
87	Reilly, Letha		yes	26
88	Robinson, Renee		no	26
89	Smith, Ruth		no	26
90	Brink, Karen		no	26
91	Gerhardt, Glenn, Gregory & Annette		no	26
92	Cummings, David & Laura		no	26
93	Honebrink, Thomas		no	26
94	Lindenfeld, M/M Stan		yes	26
95	Scheer, Don		no	26
96	Goldman, Lisa		yes	26
97	Ramey, Dan		no	26
98	Hill, Helen		no	26
99	Heinrich, Paul		yes	26
100	Lovett, Diane		no	26
101	Kennedy, Todd		yes	26
102	Siegel, Robert & Elizabeth		yes	26
103	Broderick, Barbara		yes	26
104	Clugston, Greg		no	26
105	Ryan, Penny		no	26
106	Taylor, Mark		no	26
107	Horse, Robertson		no	26
108	Burk, Cheryl		no	26
109	Geis, Emery		no	26
110	Marsh, Doug		no	26
111	Mahowald, Mark		no	26

<b>Doc</b>	<b>Author/Signee</b>	<b>Official Organization</b>	<b>Appeal Rights</b>	<b>Response #</b>
112	Sanders, Judy		no	26
113	Cleveland, Edward		no	26
114	Sinding, Jody		no	26
115	Konecky, Michael		no	26
116	Howell, Donna & Howard		no	26
117	Slaten, Gary & Bonnie		no	26
118	Weeks, Thomas		no	26
119	Guillaume, Michael		no	26
120	Neff-Encinas, Julie		yes	26
121	Williams, Hal		yes	26
122	Davis, Murphy		yes	26
123	Baker, Ken		no	26
124	Brandfass, Randi		no	26
125	Madden, John		no	26
126	Wallace, Annie		yes	26
127	Ladas, Lia		no	26
128	Wright, Nancy Young		yes	26
129	Schaefer, Debbie		no	26
130	Riggenbach, J.		no	26
131	Mackowski, Frank		no	26
132	Wills, Angela J.		no	26
133	Flach, Andy		no	26
134	White, Marsha		no	26
135	Wood, Stephen		no	26
136	Marianne		no	26

<b>Doc</b>	<b>Author/Signee</b>	<b>Official Organization</b>	<b>Appeal Rights</b>	<b>Response #</b>
137	Clegg, Chuck & Jeanie		no	26
138	Friedman, Barry		no	26
139	Genser, Richard & Claire		no	26
140	Ross, Catherine		no	26
141	Minter, Rosemary		no	26
142	Kennedy, Todd		no	26
143	Buckhout, M.D., Bradley C		no	26
144	Patterson, Daniel R.	SW Center for Biological Diversity	yes	26
145	Minter, Rosemary		no	26
146	Montijo, Catherine		yes	26
147	Finstad, Casey		yes	26
148	Corning, Michelle		no	26
149	Drabkin, William		yes	26
150	Jordan, Glenn R.		no	26
151	Cherow, Les and Annette		yes	2,16

## **Arizona Trail – Peaks Segment Responses to Substantive Comments**

### **1. Response to comments that the preferred alternative fails to meet the Purpose and Need Statements:**

Letter-28

The value of Alternative C over Alternative D is that it is at a higher elevation, providing a greater sense of “being in the mountains.” While vistas of the San Francisco Peaks are readily available from the Alternative D alignment, Alternative C provides views not only of the Peaks – from much closer – but out over the greater landscape achieving the effect desired both in the purpose and need which tiers to the Arizona Trail Association’s Arizona Trail Management Guide. The objective is to route the trail near prominent land features and the contention is that Alternative D does that is a distortion of scale. The trail routing in Alternative C not only near, but routes the trail in an appropriate corridor on a prominent land feature while Alternative D skirts that feature providing fundamentally different experiential environment. The purpose and need states a desire to balance recreational demands with Native American tribal concerns. While it is true that the Hopi have the least level of concern with Alternative D, this does not balance with the recreational demand. Alternative C balances that demand with the Hopi’s concerns. A field trip with Hopi elders and tribal representatives to critical areas along the Alternative C corridor elevated no significant concerns from the tribe. Alternative C, therefore, best achieves this balance and in turn best meets this purpose and need.

### **2. Response to questions and concerns about the adequacy of the cumulative effects analysis as written in the AZ Trail – Peaks Segment EA:**

Letters- 28, 151

Section 1508.7 of 36CFR1500 defines “Cumulative Impact” as “Cumulative Impact” is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The first step in describing cumulative effects begins with a description of the direct and indirect effects of the action to see whether or not there is an effect that would **add** to effects from other actions. The direct and indirect effects are described in Chapter 3 of the EA. Then the ID team described past<sup>20</sup>, present<sup>21</sup> or reasonably foreseeable actions that could have similar effects in a similar time and place as the effects of the new trail. These actions are described under the cumulative effects heading for each topic area in Chapter 3 of the EA. The specialist then wrote a statement in the EA about the magnitude of the combined effects.

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<sup>20</sup> Past project are usually those that occurred within the last 10 years. Projects or actions that occur prior to that time are part of the existing condition description.

<sup>21</sup> Present and foreseeable future actions are those with a public proposal available. In addition the team considered current social roads and trails even though they are not actions undertaken by any agency or organization.

In addition, the section in chapter 3 of the EA called Habitat Fragmentation (page 37) discusses the current and expected effects of the new trail in relationship to the many existing roads and social trails in the area. GIS information noted in this section of the EA is located in the project file. Here a concern is raised that there is a lack of comprehensive roads and ecosystem analysis for the Peaks area. It is accurate that funding has not been available to conduct such analysis, hampering the Forest Service's ability to achieve that reasonable and important goal. The lack of a completed roads and ecosystem analysis for the Peaks is not reason enough to fail to complete this action, for the very same reasons. Funding is not available for such a study and social road and trail development is ongoing resulting in increased cumulative impacts to the area. Funding is available for this analysis which will study a slice of that use and its resulting fragmentation and address it. As to the argument that trail construction will lead to further fragmentation, there is currently use in the area, as commenter acknowledges, construction of a well-placed, to-standard trail and associated obliteration of social trails will reduce broadcast use and focus use in an alignment analyzed and studied with the concurrence of various resource specialists.

These sections of the EA adequately address cumulative effects.

### **3. Response to comments and concerns of significant effects to Mexican spotted owls:**

Letters- 4, 10, 18, 28, 41, 58

It is an accurate statement that the Arizona Trail did not exist in this area when the Forest Plan was drafted, however, an unknown amount of social trail use did. The proposed action would serve to manage that social trail use and address increasing public use. It is an accurate statement that social trails in the Fort Valley project area identified to be closed and obliterated in that decision have not been closed. This is due to funding difficulties, as the trails component of the Fort Valley decision was in essence an unfunded mandate. The completion of this work is expected by the fall of 2004 (FY2005). Implementation of any Arizona Trail decision for the Peaks area is unlikely to begin before the completion of the Fort Valley construction, and closure and obliteration work. Inventory of all social trails bisecting the proposed route of the Arizona Trail is a time consuming and labor-intensive process and it is accurate that we do not have accurate mileage estimates for these trails. Despite the lack of data, closure and obliteration of these poorly designed and often impactful trails is imperative to reduce resource impacts. At the same time failure to accommodate that existing usage with a well-designed and least impactful trail would allow those impacts to continue. One cannot close social trails and expect them to remain closed without providing an appropriate alternative trail.

Many of the project design features were developed to mitigate impacts to MSO. We have consulted with the US Fish and Wildlife Service and will comply with Terms and Conditions of that Biological Opinion to minimize take for owls within the affected PACs.

### **4. Response to comment that no analysis in the EA has been completed on the resource damage associated with Arizona Trail usage by pack animals, including large groups from commercial outfitters:**

Letters- 1, 41

The EA addresses commercial outfitters (Appendix A, pg. 47). Commercial outfitter guides would be handled on a case-by-case basis. As with all applications, they would have to apply for a special use permit and that submittal would be analyzed for FS specialist. We will not issue

permits for groups larger than twelve persons, during the MSO breeding season (March 1 through August 31) for use of the segment of Arizona Trail that is within the Schultz Creek, Weatherford and Little Springs PACs.

Letters- 5, 18, 41, 51

**5. Response to comment that proposed alternatives do not address enforcement measures when user violations occur:**

Letters- 5, 18, 41, 51

Signing at trailheads and appropriate trail locations will advise trail users of proper trail etiquette and prohibitions including camping locations. The trail steward program will help to monitor violations and educate trail users.

**6. Response to concerns that the proposed alternatives do not address the proximity of the trails to private lands and the potential increase in crime to private properties adjacent to the trail:**

Letters- 38, 41

Trail studies reflect that very little, if any, vandalism or property damage is associated with trails located next to private property. In fact, several studies show that trails near private property actual provide greater benefits. Pertinent studies include: (1) *Rail-Trails and Safe Communities*, Tammy Tracy and Hugh Morris, January 1998, (2) *The Effect of Greenways on Property Values and Public Safety*, Colorado State Parks, State Trails Program, 1995, and (3) *The Impact of the Brush Creek Trail on Property Values and Crime*, Michelle Miller Murphy, Sonoma State University, 1992.

**7. Response to comments that proposed alternatives do not address the creation of impromptu “social” trailheads:**

Letters-38, 41

Adequate trailheads and parking areas are provided for the Arizona Trail at the following locations: The Arizona Snowbowl parking lot, the existing Sunset, Sandy Seep and Buffalo Park trailheads and a new trailhead and parking at Kelly Tank. These trailhead locations are not expected to increase use over and above the current use on FR 151 and 418.

The EA addresses mitigating social trails with trail Design Features (pg. 6). Also, based on other locations on the Coconino National Forest where the Arizona Trail is constructed and crosses roads, there has been no evidence of impromptu trailheads. These areas include Walnut Canyon Road, Marshall Lake Road, Lake Mary Road, and FR 91.

**8. Response to comments and concerns that new trails and campsites will change the habitat in a currently pristine area of the San Francisco Peaks:**

Letters- 5, 10, 18, 19, 41, 58, 65

Pristine is a subjective term. Currently, the proposed trail route goes through areas that have social roads and trails. Developed private property is interspersed throughout the area.

**9. Response to comments concerning parking along FS 418:**

Letters- 16, 38

No designated parking is identified on FR 418. Based on other locations on the Coconino National Forest where the Arizona Trail is constructed and crosses roads, there has been no evidence of impromptu trailheads developing. These areas include Walnut Canyon Road, Marshall Lake Road, Lake Mary Road, and FR 91. See response #7 regarding the creation of impromptu “social” trailheads.

**10. Response to concerns about the lack of comprehensive, landscape-scale plan that addresses wildlife needs, watershed conditions, fire protection and fuels reduction objectives, as well as recreation and homeowners opportunities for the greater San Francisco Peaks area prior to implementing the Arizona Trail:**

Letters- 4, 62

The current Forest Plan provides goals, objectives, standards and guidelines based on the landscape of the Coconino Forest. This includes the identification of ‘management areas’ such as Wilderness, Mountain Meadows and Ponderosa Pine/Mixed Conifer. This project meets the intent of the Coconino Forest Plan as described on pages 12 and 13 of the EA and PRD#46. The Arizona Trail does not preclude future landscape scale assessment. The analysis of effects included an understanding of the surrounding landscape as described in cumulative effects and the habitat fragmentation sections of Chapter 3. There is enough information to proceed with a decision at this time.

**11. Response to concerns that “quality of recreational experience” may outweigh wildlife habitat concerns:**

Letter- 62

The trail route was designed to balance recreational uses with the protection of wildlife habitat. The EA addresses mitigation measures to wildlife habitat issues.

**12. Response to concerns that placement of the trail within a project area initiated by The Nature Conservancy and Northern Arizona University in close collaboration with the US Forest Service may compromise options to expand that work:**

Letter- 62

As with all multiple use management efforts, the trail corridor will be factored into current management objectives of particular areas. The trail will need to be considered during any future project development. Mitigation measures can be developed to allow for project implementation while minimizing impacts to trail users.

**13. Response to comments and concerns on that the lack of a realistic assessment, in the current plan, of the increased fire risk created by the thousands of open fires that will occur**

**annually as a result of the construction of the trail:**

Letters- 5, 38, 51

The EA addresses wildfire concerns (pg. 42-43).

**14. Currently, although most of the area through which Alternative C would traverse is closed to motorized vehicles, ATV and snowmobile users are an unresolved problem:**

Letter- 5

Alternative C would be designated as a non-motorized trail and constructed appropriately. Assuming that ATV's and snowmobiles will use the trail is speculation, and although a possibility, it is unlikely based on current trends of non-motorized trails in the Mount Elden / Dry Lake Hills Trail System.

**15. Response to questions and concerns about the type of NEPA document chosen for the Arizona Trail Peaks Segment:**

Letters- 5, 7, 10, 28, 51, 58, 62, 4, 50

Section 1502.3 of 40CFR1500 states that environmental impact statements are to be included in every recommendation or report, on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment.

The human environment is defined in section 1508.14 as follows; "Human Environment" shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment. (see definition of "effects" section 1505.8). This means that economic or social effects are not intended by themselves to require preparation of an environmental impact statement.

The Council of Environmental Quality's Most Frequently Asked Questions published in the Federal Register, Volume 46, Number 55, pages 18038-18038, 3/23/81, states that the environmental assessment is a concise public document which has three-defined functions. 1) It briefly provides sufficient evidence and analysis for determining whether to prepare in EIS, 2) it aids an agency's compliance with NEPA when no EIS is necessary, i.e., it helps to identify better alternatives and mitigation measure; and 3) it facilitates preparation of an EIS when one is necessary. Section 1508.9(a).

A Finding of No Significant Impact (FONSI) will be prepared for this project and distributed with the Decision Notice. As Chapter 3 of the EA describes, there are effects to the environment from implementing the Arizona Trail, but these effects are not significant. The FONSI is located in the Project Record File (PDR#65).

**16. Response to one comment that the Arizona Trail Association may be pursuing a National designation for the trail as a National Scenic Trail:**

Letters- 151, 4

Such a National designation by itself does not require an EIS. The question is whether or not National designation would cause significant effects on the environment. The EA was written

with the understanding that this would be a statewide trail and the amount of use increasing as a result of its designation Statewide is described in the Alternative Comparison Table PRD#38 and Trail-Use Summary PRD#53. These use estimates were used for effects analysis. This EA was developed to designate the Arizona Trail and amend the Coconino Forest Plan. These Statewide and Forest Plan designations support future National designations.

**17. Response to comments concerning use of Government funds to build trails versus forest cleanup:**

Letters- 23, 38

Congress for a variety of National Forest activities including, recreation management, trail maintenance and construction, fish and wildlife management, hazardous fuels mitigation, road maintenance, and many others allocates government funds. The Forest Service is expected to provide outputs in all these areas. We cannot allocate our entire Forest Budget to just one activity at the expense of others. As a comparison of how dollars are allocated to various functions on the Forest, in FY03 less than 1% of the Forest budget went to trails, almost 8% to road maintenance and construction, 17.5% to hazardous fuels mitigation, and almost 20% to fire “presuppression”. Road maintenance funds are spent annually to maintain FR 151 and 418. Projects to decrease wildfire hazard are occurring in other locations of the Peaks and Mormon Lake Ranger Districts.

**18. Response to the comment that there are inadequate forest roads (FR 151 & FR 418) servicing the area:**

Letter- 38

There are several other roads that offer access to the proposed trail location including FR 420, 516 (AZ Snowbowl Road), 164B, and 514.

**19. Response to concerns for the proximity of the trail to homes:**

Letters- 17, 19, 38, 41

Along with sensitive wildlife habitat, threatened and endangered species, utilization of existing roads and trails, Wilderness values, Arizona Trail purpose and objectives, and other criteria factors; Proximity to homes was considered with the trail layout and design. Every effort was taken to allow a sufficient distance between the proposed trail corridor and private property.

**20. Response to concerns that the proposed action will have a higher risk to children in the area from strangers:**

Letter -38

There is no documented evidence that trails pose a high risk to children that reside near them.

**21. Response to concerns of no provisions for trash left by hikers:**

Letters- 38

The existing trailhead at Buffalo Park provides trash receptacles, as well as the proposed trailhead at AZ Snowbowl. Other existing trailheads such as Sandy Seep and Sunset Crater have trail information informing trail users to pack out their trash. In addition, FS employees and

volunteers regularly maintain trailhead locations, including trash collection. Furthermore, FS trail crews while maintaining trail features, do pick up trash and litter along the trail corridors, but have noted this is not a common occurrence because it is not a significant problem. This mitigation measure would be used at all appropriate trailheads.

The Arizona Trail Association will provide volunteer trail stewards that adopt trail segments. As in other sections of the trail throughout the state, these volunteers will assist with maintaining the trail and educating users on proper trail etiquette and light on the land ethics.

**22. Response to concerns that no water provisions are identified and the Forest Service is depending on residents to assist:**

Letters- 38

The purpose and need of the trail does not include the provision of providing water for trail users. However, there are several tanks located along the length of the proposed trail that allow for water opportunities if necessary.

**23. Response to comments that the Forest Service should place the trail on the east side of the Peaks:**

Letters- 1, 41, 7

This was an alternative that was considered but not analyzed in detail. Placing the Arizona Trail on the east side of the mountain, and using existing trails, was not analyzed in detail because it would require traversing wilderness, the east side is less fragmented or more “pristine” than the west side, similar threatened and endangered wildlife concerns on both sides, and the east side contains more culturally sensitive areas.

**24. Response to comments and concerns that the Bismarck Loop will increase use and cause resource damage:**

Letters- 41, 50

This loop was designed in coordination with USFWS to reduce resource damage in sensitive areas. As stated above, one cannot close social trails and expect them to remain closed without providing an appropriate alternative. Already websites and books are available that advertise the Bismarck Lake Trail (i.e., [www.trails.com](http://www.trails.com) and *Hiking Northern Arizona* by **Bruce Grubbs**). Analysis shows this area will be better managed with a loop trail verses a dead end trail.

**25. Response to comment concerning public use in proximity to wetlands, springs and other important sources of water.**

Letters- 1, 18

Every effort will be made during trail layout to incorporate vegetative and topographic shielding of waters from the trail. The Bismarck Loop does pass by Bismarck Lake and Little Springs but uses existing trails and focuses trail use to a specified corridor.

**26. Response to comments in support of the Arizona Trail Preferred Alternative C/C1:**

Letters- 2, 3, 6, 8, 9, 12, 13, 15, 20, 21, 22, 23, 24, 25, 26, 28, 29, 30, 31, 32, 33, 34, 35, 36, 39, 40, 42, 43, 44, 45, 46, 52, 55, 56, 57, 59, 60, 61, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81,

82, 83, 84, 85, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150.

Thank you for your letter in support of the preferred alternative. This alternative was developed in response to comments received on the proposed action. Many of these comments concerned maintaining a high elevation experience, providing an additional trailhead, connecting to the Humphrey's Trailhead and providing a non-motorized trail was considered.

**27. Response to comment concerning impacts to the elk preserve and elk calving and deer fawning**

Letters- 50, 41

The Bismarck Lake area is not an elk preserve but is a motorized closure. This cooperative project with the US Forest Service, Arizona Game and Fish Department, The Rocky Mountain Elk Foundation, Coconino Sportsman and The Wilson Trust intentions' were to improve habitat quality for this elk summer range.

The project objectives were as follows:

1. Improve water availability in a high elevation meadow.
2. Improve forage conditions, which have deteriorated from excessive vehicular travel, particularly in meadows.
3. Increase habitat effectiveness of area by closing to all motorized vehicles. **Encourage walk-in use.**
4. Improve wildlife accessibility by removing wildlife hazards (i.e. old fence wire)

The proposed action will maintain the motorized closure in the vicinity of Domingo Tank north to Bismarck Lake.

The EA addresses impacts to elk calving and deer fawning (pg. 36).

**28. Response to concerns that alternative intersects the Fort Valley motorized trail and does so in as many as three locations.**

Letters- 6

Where the Arizona Trail crosses roads appropriate measures will be taken to ensure safe crossing. Also see response #14.

**29. Response to comment that other alternative routes should have been analyzed**

Letters- 48

The Final EA addresses this in the Background section and in Alternatives Considered But Not Analyzed In Detail. (pgs. 2 and 5).

**30. Response to comment that Hopi Tribe has expressed concern in the vicinity of Alternatives A and C:**

Letters- 10, 58, 65

The preferred alternative mitigates tribal concerns and the Arizona State Historic Preservation Office (SHPO) concurs with the Coconino National Forest that this project has no adverse effect to the San Francisco Peaks TCP nor to any other cultural resources.

**31. Response to comments that you support Alternative D**

Letters- 18,19,28,49,53,54

Thank you for your comments.

**32. Response to comment that you support Alternative B**

Letters- 4,11,14,23,41

Thank you for your comments.