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**Navajo County,
Arizona**

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Environmental Assessment

Second Knoll Shooting Range

Lakeside Ranger District, Apache-Sitgreaves National Forests

Township 10 North, Range 23 East, Section 18, Gila and Salt River Baseline and Meridian

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ACRONYMS AND ABBREVIATIONS

ADOT	Arizona Department of Transportation
AGFD	Arizona Game and Fish Department
ARS	Arizona Revised Statutes
ASNFs	Apache-Sitgreaves National Forests
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
Commission	Arizona Game and Fish Commission
dBA	A-weighted decibel
EA	Environmental Assessment
EIS	environmental impact statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESP	environmental stewardship plan
FLRMP	Forest Land and Resource Management Plan
Forest Plan	*Apache-Sitgreaves National Forests Plan*
Forest Service	U.S. Forest Service
GMU	game management unit
IBA	important bird area
IO	isolated occurrence
MA	Management Area
MIS	Management indicator species
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
PA	public address
PIESA	Preliminary Initial Environmental Site Assessments
Proposed Action	Proposed Second Knoll Shooting Range project
RD	Ranger District
ROS	Recreation Opportunity Spectrum
SHPO	State Historic Preservation Office
SOPA	Schedule of Proposed Actions
SWCA	SWCA Environmental Consultants
TMP	Travel Management Plan
USFWS	U.S. Fish and Wildlife Service
WQA	Wildlife Quiet Area

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CHAPTER 1: INTRODUCTION

Document Structure

The U.S. Forest Service (Forest Service) has prepared this Environmental Assessment (EA) in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This EA discloses the direct, indirect, and cumulative environmental impacts that would result from the Proposed Action and alternatives. The document is organized into five parts:

Introduction: This section includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.

Comparison of Alternatives, including the Proposed Action: This section provides a more detailed description of the agency's Proposed Action as well as alternative methods for achieving the stated purpose. These alternatives were developed based on significant issues raised by the public and other agencies. This discussion also includes possible mitigation measures. Finally, this section provides a summary table of the environmental consequences associated with each alternative.

Environmental Consequences: This section describes the environmental effects of implementing the Proposed Action and other alternatives. This analysis is organized by section per resource area. Within each section, the affected environment is described first, followed by the effects of the No Action Alternative that provides a baseline for evaluation and comparison of the other alternatives that follow.

Agencies and Persons Consulted: This section provides a list of preparers and agencies consulted during the development of the EA.

Appendices: The appendices provide more detailed information to support the analyses presented in the EA.

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

Background

The Second Knoll Shooting Range (Proposed Action) is a recreational shooting range proposed by the Arizona Game and Fish Department (AGFD). The proposed project is located on approximately 80 acres managed by the Apache-Sitgreaves National Forests (ASNFs) Lakeside Ranger District (RD) in Navajo County, Arizona, approximately 5 miles east of the town of Show Low, Arizona (Figure 1).

The project is a federal action under NEPA, Section 102(2) (1969) and the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500–1508). The ASNFs prepared this EA under these regulations to describe the analysis of environmental effects of the proposed project and alternatives, including the No Action alternative.

Recreational shooting has always been an outdoor activity in Arizona. As the population of the state continues to grow, the number of citizens engaging in recreational shooting at formal and informal

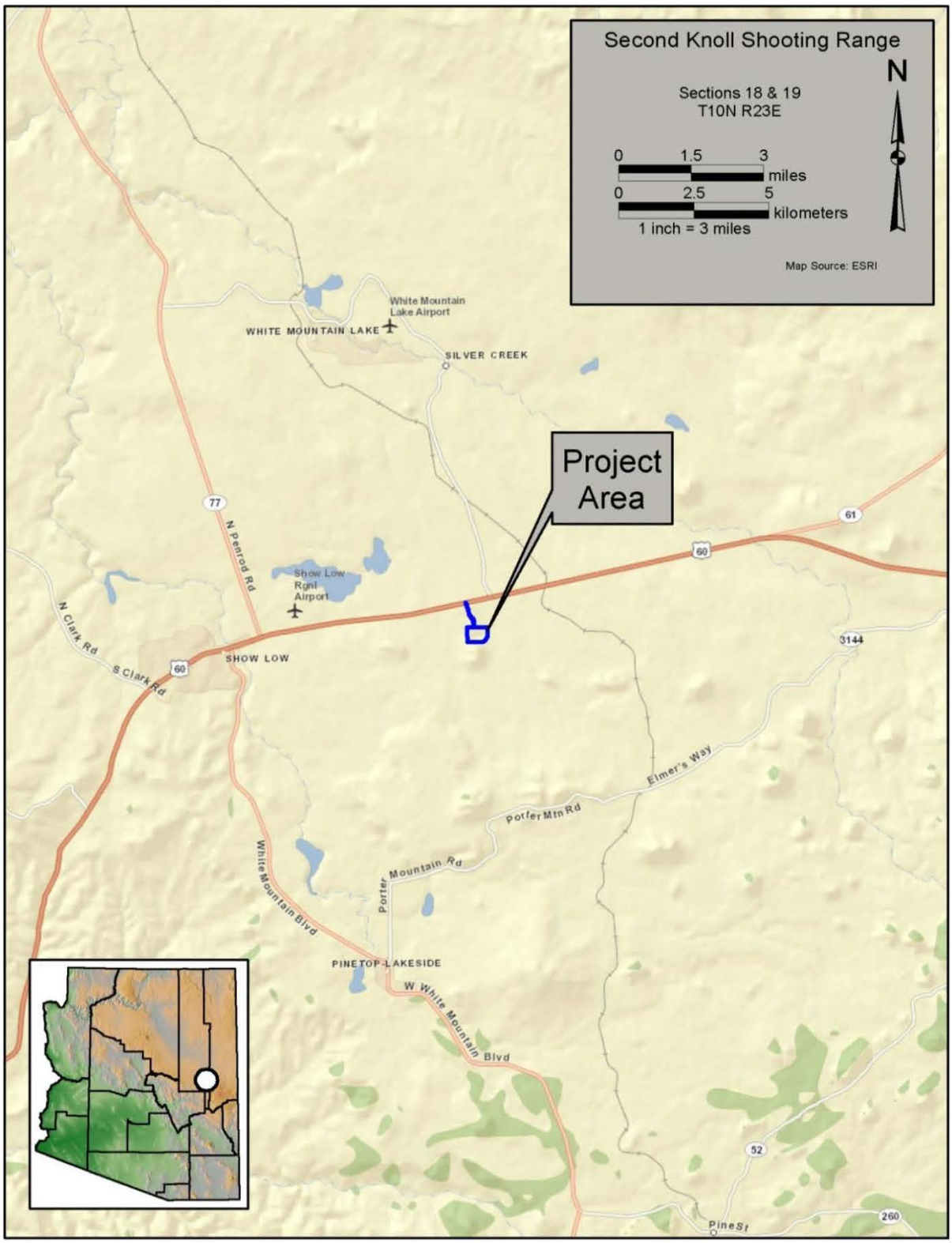

Figure 1. Project location.

shooting ranges or dispersed shooting areas has increased significantly. Outdoor enthusiasts with multiple interests are competing to use public lands adjacent to population centers, resulting in unresolved conflicts between public agencies, landowners, and recreational shooters. The population center of Show Low/Pinetop-Lakeside, Arizona is one of the largest locations where access to a public shooting range is unavailable. The nearest large-scale outdoor public shooting ranges are located over 150 miles away near the Phoenix metro area. Other smaller-scale public shooting ranges are located within 50 miles of the proposed shooting range but are either limited in the times open to the general public, require a membership fee, are indoors, or all of the above. The proposed Second Knoll Shooting Range would be able to accommodate group events, would be open to the public during all operating hours, and all shooting lanes would be outdoors. As a result, dispersed shooting and illegal activities such as littering and destruction of public and private resources continues to increase in the region. Based on public input to the AGFD Commission, and requests from local shooting range clubs and citizens' groups, AGFD determined there is a need for a local community shooting range to be developed in the Show Low/Pinetop-Lakeside area. A "Local Community Range" is defined as a multi-purpose range with shooting opportunities that may include rifle sight-in, pistol, archery, and shotgun venues. These ranges tend to serve the immediate neighboring population they are located in, and provide a controlled setting managed through partnerships with local user groups on approximately 80 acres of property.

The proposed shooting range is adjacent to the existing 17,297-acre Woolhouse Wildlife Quiet Area (WQA), as specified by the Forest Supervisor in Special Closure Order No. 01-402 signed December 6, 2003. The Woolhouse WQA excludes motorized vehicle use.

Purpose of and Need for Action

The development of a local community shooting range in the Show Low/Pinetop-Lakeside, Arizona area would serve the local population base throughout the year. The purpose of the project is to promote opportunities for safe, educational, and family-oriented public shooting at a range in the Show Low/Pinetop-Lakeside area while minimizing vandalism on public lands. This Proposed Action is needed to provide a safe, supervised, and controlled target shooting facility that would be open to the general public. With an ever-increasing human population and related increase in outdoor activities, Arizona has experienced a rise in unregulated dispersed shooting around urban areas. Regulated, safe, designated shooting sites are intended to decrease dispersed shooting, significantly diminish levels of area vandalism, dumping, and unsafe activities, and reduce the potential for conflict with other recreational activities. By developing and providing a planned and structured venue in eastern Arizona, casual shooters would be afforded the opportunity to practice safe firearm and archery equipment use within a reasonable distance from where they reside.

The purpose and need is consistent with the Forest Service's policies for target ranges and other outdoor recreation improvements (Forest Service Handbook 2709.14, Chapter 70). Forest Service Handbook 2709.70 allows for target ranges on National Forest System lands where they would be consistent with the standards and guidelines in the applicable land management plan and would enhance forest management by improving public safety, providing recreational opportunities, and consolidating dispersed target shooting.

This action responds to the goals and objectives outlined in the *Apache-Sitgreaves National Forests Plan* (Forest Plan), and helps move the project area towards desired conditions described in that plan (Forest Service 1987a, as amended).

Proposed Action

The AGFD proposes to construct an 80-acre local community shooting range on lands managed by the Lakeside Ranger District of the ASNFs. AGFD would partner through a lease agreement with the White Mountain Shooters Association for the long-term operation and maintenance of the proposed shooting range. The proposed shooting range would be operated year-round.

The Forest Service proposes to issue a special use permit to the AGFD for the construction and operation of a public, recreational shooting range. The special use permit would include the access road.

Decision Framework

The ASNFs Forest Supervisor is the responsible official who will review the Proposed Action and No Action alternative, as well as the associated environmental consequences to make a decision. The decision would contain activities that meet the purpose and need and provide consistency with Forest Plan standards and guidelines for all related resource areas. Specifically, the Forest Supervisor will decide whether to:

- approve the Proposed Action alternative as described or with modifications; or
- take any action at this time; or
- develop an environmental impact statement (EIS).

This EA discloses the environmental consequences of implementing the Proposed Action and alternative to facilitate public understanding and engagement and informed decision making. This analysis incorporates by reference (in accordance with 40 CFR 1502.21) the project record, including specialists' reports and other technical documentation used to support analyses, summarized herein.

Consistency with the Forest Plan

The Forest Plan (Forest Service 1987a) defines a set of goals, objectives, standards, and guidelines that provide direction for managing the forests and their resources. The Forest Plan (also referred to as the Forest Land and Resource Management Plan (FLRMP) for the ASNFs was adopted in 1987 (Forest Service 1987a). The plan assigns Management Areas (MAs) with particular goals, standards, and guidelines. The proposed shooting range would be located entirely within MA-2, Woodland designation. MA-2 has a management emphasis of "fuelwood production, wildlife habitat, watershed condition, and livestock grazing. Other resources are managed in harmony with the emphasized resources" (Forest Service 1987a). There is not currently a management emphasis for recreational shooting ranges for MA-2.

Recreation management was identified as an issue to be addressed in the FLRMP planning process. Specifically, the FLRMP states "the demand for developed recreation sites exceeds the availability of improvements" and cites "insufficient law enforcement and protection" regarding recreation management (Forest Service 1987a). The Proposed Action (developing a recreational shooting range) would correspond directly to the recommendations of the 1987 ASNFs FLRMP. The decision document for the Proposed Action (if selected), would not require a project-specific amendment to the FLRMP.

Public Involvement

The proposal was listed in the Schedule of Proposed Actions on October 1, 2010, and published quarterly thereafter. The proposal was provided to the public and other agencies for comment during the public scoping period of June 7–July 7, 2012. A mailing list was compiled of local agencies, businesses, individuals, adjacent property owners, and organizations interested in or determined to be potentially impacted by the Proposed Action. Emphasis was placed on contacting people affected or concerned about the Proposed Action because of ownership or land-use interests. Scoping documents including a discussion of the Proposed Action and maps of the proposed new facility were sent to more than 60 individuals, organizations, agencies, and tribes on the mailing list (see Chapter 4, Consultation and Coordination). As part of the public involvement process, the ASNFs Lakeside RD posted scoping documents online, mailed scoping letters to community members, and held an informational, open-house public meeting on June 27, 2012 in Show Low, Arizona. In addition, local shooting clubs disseminated scoping documents to their memberships.

A total of 456 comment submittals were received by the ASNFs by mail, email, telephone, and hand delivery. The submittals were reviewed, organized, and analyzed; the analysis identified 11 specific resource comments within the 456 submittals. Public comments included favorable response (over 75% of comments were in favor of the project) for the development of a new recreational shooting range, as well as citing concerns regarding public safety, socioeconomics, and natural resources. All public scoping documents are included in the project record.

Using the comments from Forest Service specialists, the public, and other agencies (see Issues section), the Interdisciplinary Team developed a list of issues that the EA will address.

Tribal Contact and Consultation

The ASNFs Schedule of Proposed Actions (SOPA) and the Proposed Action were sent to eight tribal governments on March 10, 2011: Fort McDowell Yavapai Nation, Hopi Tribe, Navajo Nation, Pueblo of Zuni, Ramah Navajo Chapter of Navajo Nation, San Carlos Apache Tribe, Tonto Apache Tribe, and White Mountain Apache Tribe. An additional letter was mailed to these eight tribal governments on April 15, 2013 for another opportunity to identify any special issues or concerns regarding the proposed project.

As discussed in more detail in the cultural resources section, the Forest Service consults with the State Historic Preservation Office (SHPO) and concerned Tribes. The Forest Service works under a programmatic agreement with the SHPO to conduct consultation. During each phase of the proposed project the SHPO and concerned Tribes will be consulted.

Issues

Using comments provided from the public, other agencies, and industry representatives during the public scoping period, issues are separated into key issues, primary resource concerns, and issues eliminated from detailed study. An issue is a point of discussion, debate, or dispute about the environmental effects of the proposed activities. Key issues are cause-effect relationships directly or indirectly caused by implementing the Proposed Action. Primary resource concerns are similar to issues, but may not be caused directly or indirectly by implementing the Proposed Action; primary resource concerns may exist whether or not the Proposed Action is implemented.

Key issues and primary resources concerns are considered for detailed analysis and make up the content for the Environmental Consequences sections of Chapter 3.

Key Issues

No key issues were identified during the scoping period.

Primary Resource Concerns

Eleven primary resource concerns were identified during the scoping period. Interdisciplinary Team members identified primary resource concerns for land use and wildlife. Comments from the public during scoping identified primary resource concerns for human health and safety, hazardous materials, noise, socioeconomics, recreation, water resources, air quality, fire risk/management, and cultural/heritage resources. Each of these resource concerns is analyzed in detail in Chapter 3 and is described here:

Human Health and Safety. Approval of the proposed shooting range may impact human health and safety by decreasing the amount of "wildcat" shooting that currently takes place in areas of the ASNFs in the local region, and by providing a structured shooting environment.

Hazardous Materials. The proposed shooting range would include the use of lead shot and bullets, which may contribute hazardous materials to the area.

Noise. The proposed shooting range would increase the current noise conditions in the immediate area of the proposed range. Increased noise levels may impact other resources such as human health and safety, recreation, social conditions, and potentially wildlife.

Land Use. The proposed shooting range would require changes to the existing special use permit held by ADOT and would change the land use from a material-source pit to a recreational target shooting range.

Socioeconomics. Approval of the proposed shooting range may impact the socioeconomics of the local region by attracting tourists and recreational shooters to the Show Low area.

Wildlife. Modification of the existing lands within the area proposed for the shooting range may impact wildlife and habitats.

Recreation. The proposed shooting range would provide a new safe and controlled recreation setting and experience on the ASNFs, and is anticipated to improve the safety for recreational use of the surrounding open ASNFs as a result of the anticipated decrease in "wildcat" target shooting. The proposed shooting range is anticipated to reduce the amount and frequency of "wildcat" target shooting, which often results in litter/trash being left behind in the ASNFs.

Water Resources. The proposed shooting range includes ground disturbance and heavy construction equipment and may temporarily impact surface water resources.

Air Quality. The proposed shooting range includes ground disturbance and heavy construction equipment and may temporarily impact local air quality.

Fire Risk/Management. The proposed shooting range is anticipated to reduce the amount and frequency of "wildcat" target shooting, which may change the risk of sparking a wildland fire caused by such shooting.

Cultural/Heritage Resources. The proposed shooting range includes ground disturbance and heavy construction equipment and may result in impacts to cultural and/or heritage resources.

Issues Eliminated from Detailed Study

Issues eliminated from detailed study are: a) outside the scope of the proposed activity; b) already decided by law, regulation, Forest Service plan, or other higher-level decisions; c) irrelevant to the stated decision to be made; or d) conjectural and not supported by scientific or factual evidence. The CEQ NEPA regulations explain this delineation in Section 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)."

Based upon the Interdisciplinary Team's identification of preliminary issues and the public comment period, resource concerns (issues) eliminated from detailed study include mineral resources, travel management, visual resources, timber resources, grazing, and wilderness resources. A list of the comments that the EA will not address and reasons regarding their categorization as non-significant may be found in the Scoping Comments Content Analysis document in the project record.

Regulatory Context

The following is a summary of selected statutes, regulations, and Executive Orders (EOs) pertaining to the preparation of EAs on federal land.

American Antiquities Act of 1906. This Act seeks to protect historic and prehistoric ruins, monuments, and objects of antiquity and scientific interest on lands owned or controlled by the federal government by imposing misdemeanor-level criminal penalties.

Archaeological Resources Protection Act of 1979, as amended. This Act provides for protection of archaeological resources on federal lands. The Act requires permits for the excavation or removal of federally administered archaeological resources and encourages cooperation between federal agencies and private individuals in identifying and protecting important resources. In addition, the Act invokes penalties for excavating, removing, damaging, or defacing any archeological resources older than 100 years on public or Indian lands.

Bald and Golden Eagle Protection Act of 1940. This Act provides for the protection of the bald eagle (the national emblem) and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession, and commerce of such birds.

Clean Air Act of 1963, as amended. This Act requires any federal entity engaged in an activity that may result in the discharge of air pollutants to comply with all applicable air pollution control laws and regulations (federal, state, or local). This Act directs the attainment and maintenance of the National Ambient Air Quality Standards for six different criteria pollutants: carbon dioxide, ozone, particulate matter, sulfur oxides, oxides of nitrogen, and lead.

Clean Water Act of 1977, as amended. Section 404 of the Clean Water Act identifies conditions under which a permit is required for construction projects that result in the discharge of fill or dredged material into waters of the U.S.

Endangered Species Act of 1973, as amended. Section 7 of the Endangered Species Act requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) to ensure that undertaking, funding, permitting, or authorizing an action is not likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat, as defined under the Act, exists only after USFWS officially designates it. Critical habitats are

1) areas within the geographic area, features essential to the conservation of the species and that may require special management consideration or protection; and 2) those specific areas outside the geographic area, occupied by a species at the time it is listed, essential to the conservation of the species.

EO 11988, Floodplain Management, May 24, 1977. EO 11988 requires federal agencies to avoid to the extent possible both long- and short-term adverse impacts associated with occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

EO 11990, Protection of Wetlands, May 24, 1977. EO 11990 requires federal agencies or federally funded projects to restrict uses of federal lands for the protection of wetlands through avoidance or minimization of adverse impacts. The EO was issued to "avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands whenever there is a practicable alternative."

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, February 11, 1994. This EO directs federal agencies to identify and address, as appropriate, disproportionately high and adverse human health and environmental effects of their programs, policies, and activities on minority populations and low-income populations.

EO 13007, Indian Sacred Sites, May 24, 1996. This EO requires that all Executive Branch agencies (including the U.S. Bureau of Land Management) having responsibility for the management of federal lands will, where practicable, permitted by law, and not clearly inconsistent with essential agency functions, provide access to and ceremonial use of Indian sacred sites by Indian religious practitioners and will avoid adversely affecting the integrity of such sacred sites. The EO also requires that federal agencies, when possible, maintain the confidentiality of sacred sites.

EO 13112, Invasive Species, February 3, 1999. This EO seeks to improve coordination between federal agencies in efforts to combat invasive plant and animal species. EO 13112 established the National Invasive Species Council as a high-level, interdepartmental federal advisory panel to provide leadership and planning in the prevention and control of invasive species nationwide.

EO 13186, Migratory Birds, January 10, 2001. This EO requires each federal agency taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations to develop and implement, within 2 years, a Memorandum of Understanding with the USFWS that shall promote the conservation of migratory bird populations

EO 13274, Environmental Stewardship and Transportation Infrastructure Project Reviews, September 18, 2002. The goal of this EO is to promote environmental stewardship in the nation's transportation system and to streamline the environmental review and development of transportation infrastructure projects. An interagency task force monitors the environmental reviews of certain high-priority projects.

EO 13443, Facilitation of Hunting Heritage and Wildlife Conservation. The goal of this order is to direct federal agencies that have programs and activities that have a measurable effect on public land management, outdoor recreation, and wildlife management, including the U.S. Department of the Interior and the U.S. Department of Agriculture, to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat.

Farmland Protection Policy Act of 1994. This Act is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. For the purpose of the Act, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland does not have to be currently used for cropland to be subject to the Act's requirements. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land.

Fish and Wildlife Coordination Act of 1934, as amended. This Act requires coordination with federal and state wildlife agencies (USFWS and AGFD) for the purpose of mitigating losses of wildlife resources caused by a project that impounds, diverts, or otherwise modifies a stream or other natural body of water.

Migratory Bird Treaty Act of 1918, as amended. This Act provides for the protection of migratory birds and prohibits their unlawful take or possession. The Act bans "taking" any native birds; "taking" can mean killing a wild bird or possessing parts of a wild bird, including feathers, nests, or eggs. Exceptions are allowed for hunting game birds and for research purposes, both of which require permits.

National Forest Management Act of 1976. This Act requires development of land and resource management plans and governs administration on National Forests.

National Environmental Policy Act of 1969, as amended. NEPA requires federal agencies to take into consideration the environmental consequences of proposed actions as well as input from state and local governments, Indian tribes, the public, and other federal agencies during their decision-making process. The CEQ was established under NEPA to ensure that all environmental, economic, and technical considerations are given appropriate consideration in this process.

National Historic Preservation Act of 1966, as amended. Major federal projects must comply with Section 106 of the National Historic Preservation Act, which mandates that potential impacts to significant historic properties be considered prior to approval of such projects. Significant historic properties are defined as sites, districts, buildings, structures, and objects eligible for the National Register of Historic Places (NRHP). Consideration of these resources is to be made in consultation with the relevant State Historic Preservation Office and other interested agencies and parties.

Native American Graves Protection and Repatriation Act of 1990. This Act requires protection and repatriation of Native American cultural items found on, or taken from, federal or tribal lands, and requires repatriation of cultural items controlled by federal agencies or museums receiving federal funds. Should previously unidentified cultural resources, especially human remains, be encountered during construction, work will stop immediately at that location and ASNFs' cultural resources staff will be notified to ensure proper treatment of these resources.

Noise Pollution and Abatement Act. This Act requires that all federal agencies establish mechanisms for setting emission standards for source of noise, including motor vehicles, aircraft, etc. The Act also enables local governments to address noise mitigation in land use planning efforts.

Noxious Weed Act of 1974, as amended. This Act requires that all federal agencies develop a management program to control undesirable plants on federal lands under the agency's jurisdiction; establish and adequately fund the program; implement cooperative agreements with State agencies to coordinate management of undesirable plants on federal lands; and establish integrated management systems to control undesirable plants targeted under cooperative agreements.

Safe Drinking Water Act of 1974, as amended. Section 1424 of this Act regulates underground injection into an aquifer which is the sole or principal drinking water source for an area.

Wild and Scenic Rivers Act of 1968. This Act requires consideration of wild and scenic rivers in planning water resources projects. Developing water resource projects is prohibited on any river designated for study as a potential component of the national wild and scenic river system.

CHAPTER 2: ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This chapter describes and compares the alternatives considered for the proposed Second Knoll Shooting Range project. It includes a description and map of each alternative considered. This section also 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. Some of the information used to compare the alternatives is based on the design of the alternative, and some of the information is based on the environmental, social, and economic effects of implementing each alternative. Each alternative considered is described, as well as other alternatives that were initially considered but that have been eliminated.

Alternatives

Alternatives Considered, but Eliminated from Detailed Analysis

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Alternatives that were considered, but dismissed are summarized here.

Prescott National Forest Location

A potential location for the AGFD to operate a proposed shooting range was explored on the Prescott National Forest. The proposal included 80 acres located approximately 1 mile west of Interstate 17 in Yavapai County, Arizona. Due to resource concerns, the AGFD determined to relocate the proposed shooting range to a site on the ASNFs that has already been previously disturbed.

Alternatives Considered in Detail

Alternative 1

No Action

Under the No Action alternative, current management plans would continue to guide management of the project area. The proposed shooting range would not be developed, a special use permit would not be issued, and existing land uses in the project area would continue. The existing uses include target shooting and materials sourcing by the public. The inactive materials source cinder pit would continue to be managed by the Arizona Department of Transportation (ADOT). The No Action alternative forms the baseline against which the potential impacts of the Proposed Action and any other action alternatives are compared. Thus, it includes current actions and activities in the project area. No activities would be implemented to accomplish the purpose and need of the project.

Alternative 2

The Proposed Action

The AGFD proposes to construct an 80-acre local community shooting range on lands managed by the Lakeside Ranger District of the ASNFs (see Figure 1). AGFD would partner through a lease agreement with the White Mountain Shooters Association for the long-term operation and maintenance of the proposed shooting range. The proposed shooting range would be operated year-round.

The 80-acre project area proposed for the shooting range is currently an inactive materials source cinder pit used by the ADOT for storage. ADOT would discontinue use of the area and cancel their special use permit, to allow for the authorization of the shooting range, if approved. The ASNFs would issue a special use permit to AGFD for operation of the shooting range on National Forest System lands. The term of the permit would be for a minimum of 20 years with a renewal option. The renewal option would specify that if AGFD complies with the permit terms and conditions and no upgrades or changes to the permit are proposed, the permit may be renewed after 20 years. The project includes the following components, described in the following sections:

1. Construction, operation, and maintenance of a shooting range
2. Site security
3. Use and maintenance of an existing access road

The shooting range construction plan would be prepared by a qualified engineer prior to construction and would implement the relevant industrial-site construction requirements, including but not limited to the National Shooting Sports Foundation's *Environmental Aspects of Construction and Management of Outdoor Shooting Ranges* (1997), U.S. Environmental Protection Agency's (EPA's) *Best Management Practices for Lead at Shooting Ranges* (2005), the National Rifle Association's *Range Source Book* (2012), Navajo County Public Works/Planning and Zoning Department's building and safety codes, and Forest Service construction best management practices.

Shooting Range Construction

Construction and maintenance of the proposed shooting range would include one general shooting long-range bay, two general purpose bays, and one close-range pistol bay (Figure 2). Related structures and facilities would include a perimeter safety fence, parking lot, administrative offices, Range Master's quarters, public access portable restrooms, potential mobile meeting rooms, and canopies at the shooter's booths of each bay for overhead cover.

The long-range general shooting bay would be located to the west of the facility entrance and would not be contiguous to the other bays. The long-range general shooting bay would be used for rifle and other long-range firearm target shooting. The general purpose bay may be used for hunter safety/youth training, trap and skeet, and/or archery. The close-range pistol bay would be used for pistol and other short-range firearm target shooting.

Since the proposed location is in an existing materials source cinder pit, the shooting bays and lanes would require minimal blading and excavation. However, to ensure ordnance does not exit the range, berms would be constructed at the ends and along the sides of each shooting lane, as mandated by the AGFD and other guidance for reviewing design and operation of target shooting ranges.

A parking lot with connected handicapped-accessible walkways would provide access to the administrative office. An administrative office would include a staffed range employee to sign visitors in and out, process the equitable user fees, and ensure every user has read and understands the Range Rules, watched the safety video, and is equipped with the required safety equipment before proceeding to a Range Master area. Two Range Master areas would be constructed, one located at the long-range shooting bay and the other between the general and close-range bays. The Range Master areas include a public address (PA) system for notifying and alerting target shooters and range visitors, and each Range Master area would include a first-aid kit.

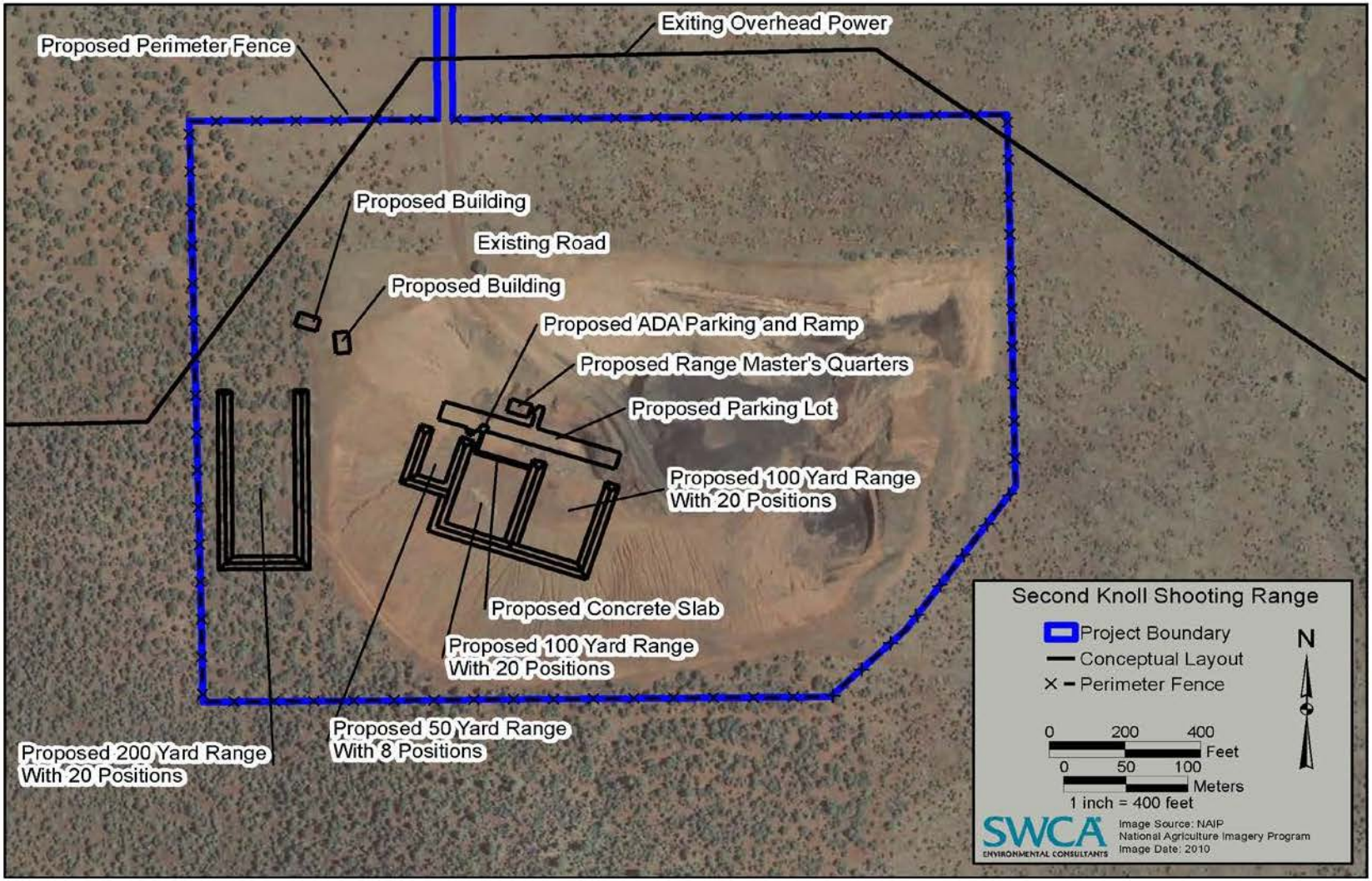

Figure 2. Conceptual layout.

The shooter's booths of each range bay would be paved and partitioned to provide separation from adjacent booths. In addition, each shooter's booth would include an overhead canopy to shield from direct overhead sunlight. The range and shooting lanes themselves would not be paved and would remain a compact, dirt surface.

Public-access portable restrooms would be located adjacent to the administrative offices.

Site Security

The AGFD would construct a perimeter/boundary fence to secure the proposed Second Knoll Shooting Range property. The existing perimeter fence would be removed and a new wildlife fence would be constructed in the existing area. The fence would be constructed to AGFD standards for wildlife fence guidelines. The perimeter/boundary fence would have minimal ground disturbance because the new fence would be constructed on an existing fence line. Some equipment such as post hole diggers, augers, and "T" post drivers would be used to construct the fence.

A gate and a cattle guard would be constructed at the entrance road to the proposed shooting range. The gate and cattle guard would be placed using backhoes, front-end loaders, and any additional heavy equipment needed to complete the installation. The gate across the access road at the perimeter/boundary fence at the proposed shooting range entrance would be closed and locked during non-business hours (6 p.m. to 8 a.m. weekdays; 8 p.m. to 7 a.m. weekends). The facility would also be equipped with surveillance video and a security/alarm system would be installed at the administrative office.

Shooting Range Operation

The proposed project would staff approximately one to two full-time employees. The hours of operation would be 7 days a week, from dawn to dusk, during the spring, summer, and fall seasons, and depending on accessibility during the winter.

Normal operation of the shooting range would include specific timed intervals for 1) setting and checking targets, and 2) shooting targets. The Range Master would announce over the PA system when each interval would begin and end, ensuring all users are off the shooting lanes and in the shooter's booths before signaling it is safe to shoot.

Range operation will include an environmental stewardship plan (ESP). An ESP is a written plan or "road map" that lays out the planning, implementing, monitoring, and documentation of progress of environmental management and improvements at the shooting range. By developing and implementing an approved ESP, AGFD would satisfy shooting range recommendations and guidance that are encouraged by the National Shooting Sports Foundation, National Association of Shooting Ranges, National Rifle Association, and similar organizations.

The ESP's environmental monitoring and documenting systematically gathers and evaluates the information necessary to determine whether there are legitimate environmental concerns at the range. Information and data such as vegetation treatment success, soil pH levels, wildlife monitoring, surface water runoff, soil erosion, and safety incident reporting are routinely recorded, and if necessary, additional environmental stewardship may be implemented. The ongoing efforts to record progress, implementation, and monitoring would serve as a valuable administrative record and historical documentation for the shooting range.

The ESP components includes a baseline condition assessment, construction plan, road maintenance plan, integrated best management practices, operating plan, monitoring plan, noxious weed monitoring and abatement plan, and hazardous materials remediation plan.

The AGFD has issued a *Hazardous Waste Management Plan for Department Owned/Operated Shooting Ranges* (AGFD 2006), which would be followed for this project. This plan includes a site-specific Lead Best Management Practices Plan and Shooting Range Staff Health and Safety Plan.

Built into the ESP are the operating and monitoring plans. The details of day-to-day operation of the shooting range are provided in this plan, including shooting range "opening" and "closing" for business procedures, capacity thresholds, and the details of an employee handbook. The monitoring plan provides the frequency, duration, and intensity of environmental monitoring efforts. Monitoring of environmental resources may include but are not limited to soils, erosion, vegetation, wildlife, noise, and air quality.

The noxious weed monitoring and abatement plan defines two types of disturbance conditions—permanent and temporary use. Temporary use areas are further subdivided into three levels (Overland Drive and Crush; Grading and Clearing; Cut with Soil Excavation) that correspond to the types of impacts that would occur during the construction of the facility. Permanent uses would be long-term, and the landscape would be permanently altered as a result of removing vegetation, leveling the site, modifying natural drainages, erecting fencing, and constructing facilities, towers, and other structures. Noxious weed abatement performed at the project area may include chemical, mechanized, or human treatment methods.

The proposed project would include defined and approved Shooting Range Rules. The Range Rules would be posted at the facility entrance in the administrative office, and would also be posted at the Range Master's quarters. Acknowledgement that shooting range users and visitors have read and understand the Range Rules is required before shooting at the proposed shooting range.

Areas of the material source-pit not proposed for use by the shooting range would be fenced and locked, per AGFD standards for vehicular access control details and specifications.

Roadway and Access

Forest Road 206 is an unpaved road currently used to access the existing ADOT materials source cinder pit; the road is approximately 0.5 mile long and 40 feet wide (totaling 2.5 acres). No improvements to the road are anticipated. The existing access road is built to Forest Service and ADOT standards and specifications and therefore no drainage installations and improvements would be anticipated.

The Proposed Action would not preclude other uses of the existing road, such as access to grazing allotments and other ranching activities. The AGFD would coordinate with the Forest Service for conducting maintenance as needed for the access roadway entrance.

The AGFD would be responsible for providing normal maintenance during the spring, summer, and fall, as well as snow removal and plowing of the access road during the winter months. Normal maintenance includes filling/repairing potholes and applying gravel as needed to the access road.

Design Criteria Common to All Action Alternatives

Design criteria are an integral part of the Proposed Action and serve to minimize impacts of activities on resource area conditions. Best management practices and legal requirements of the regulatory

context would be applied during construction, operation, and maintenance of the proposed project, if approved.

Implementation of the design criteria described in Table 2.1 below would occur if the proposed Second Knoll Shooting Range is approved.

Table 2.1. Summary of Design Criteria

Design Criteria	Resource the Design Criteria is Intended to Protect	Design Criteria Description
Construction Design Features	Public health and safety, soils and soil erosion, economic conditions	Applicable construction best management practices would be applied. Materials needed for construction of the roadway and other improvements such as range berms would be derived primarily from on-site material sources. Any other construction materials, which cannot be derived on-site, would be hauled from commercial sources. Additional amount of product to be transported, duration and timing of construction, and temporary equipment staging areas needed for construction would be identified before construction begins. Future coordination with ADOT to provide signage would also be conducted.
Environmental Stewardship Plan (ESP)	Human health and safety, vegetation, water resources, wildlife, hazardous materials, and fire/risk management	The ESP would apply the following: EPA's *Best Management Practices for Lead at Outdoor Shooting Ranges* certificate of recognition, National Shooting Sports Foundation's Environmental Stewardship Plan Development Program, Interstate Technology and Regulatory Council's *Environmental Management at Operating Outdoor Small Arms Firing Ranges* (2005), and AGFD's *Hazardous Waste Management Plan for Department Owned/Operated Shooting Ranges* (2006).
Operating Plan	Human health and safety, recreation, litter/trash, water resources, noise, hazardous materials, and fire risk/management	National Shooting Sports Foundation's *Environmental Aspects of Construction and Management of Outdoor Shooting Ranges* (1997) specifies operational control measures and monitoring schedule and requirements. A road maintenance plan would provide a management strategy for maintaining Forest Road 206 (such as wetting disturbed soils and covering trucks hauling materials) from U.S. Route 60 to the proposed range, and would be specified in the special use permit, if granted. Monitoring reports would be coordinated with ASNFs.

Design Criteria	Resource the Design Criteria is Intended to Protect	Design Criteria Description
Safety Plan	Human health and safety, hazardous materials, and fire/risk management	The Safety Plan would include AGFD range rules, safety officer responsibilities and protocol, and operational control measures for maintaining a safe shooting range. The Safety Plan would apply the EPA's *Best Management Practices for Lead at Outdoor Shooting Ranges* (2005). Consistent with Forest Service Handbook 2709-14, Chapter 70 requirements for applications, the Safety Plan includes information and protocols for maintaining a safe and environmentally sound facility, including, but not limited to: spill response and remediation, emergency evacuation and closure procedure plan, fire suppression/emergency response, storage and remediation of hazardous, combustible, explosive, and corrosive materials, and site security. The Safety Plan's emergency evacuation and closure plan outlines the Range Master's and range staff's procedure for safely evacuating and closing the shooting range in the event of an emergency. The shooting range would also apply fuel and fire management regulations and programs in the Safety Plan through fire suppression/emergency response procedures that are used in the Forest Plan (Forest Service 1987a). In the event of a fire, range staff will report to the Range Master for fire-fighting or evacuation instructions. The perimeter fence would consist of four wire strands on "T" posts no farther than 15 feet apart, with two stays set at 5-foot intervals between posts. Corner and tension posts would be constructed of 3-inch steel pipe set in the ground in a concrete footer 18 × 24 inches deep.
Operation Design Features	Human health and safety, land use, wildlife, grazing, recreation, water resources, air quality, noise, hazardous materials, and fire/risk management	Operation of the proposed shooting range would apply AGFD and National Rifle Association shooting range design features. All facilities would be in compliance with the Americans with Disabilities Act. The shooter's booth partitions would not exceed 4 to 5 feet in height to ensure every shooter is visible at all times from the Range Master's area. Because the access road is not paved, water and/or a non-toxic dust palliative would be applied to the roadway to prevent excessive fugitive dust during dry periods. NO SMOKING signs will be posted at the facility entrance, administrative office, and the Range Master's quarters. The spill response and remediation component of the Safety Plan includes an inventory of all liquids that would be stored on the premises, the associated Materials Safety Data Sheets for each, and requirements/materials used to contain the spill. In addition, all hazardous, combustible, explosive, and corrosive materials would be stored in approved containers with secondary containment and locked inside Bureau of Alcohol, Tobacco, Firearms, and Explosives–approved magazines.

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In addition to the design features provided in Table 2.1, the following ASNFs noxious weed best management practices would also be implemented:

- Survey for noxious weeds at a time when the growing season is well established, and prior to treatment implementation.
- If noxious/invasive weeds are identified during or post implementation, treat the weeds and monitor the site for a minimum of three growing seasons post weed-treatment success.
- Any fills, mulches, or revegetation seeding, used during or after project implementation, will be certified weed free.
- Ensure that all contract equipment moved onto the National Forest is free of soil, weeds, vegetative mater or other debris that could harbor seeds. Inspect each piece of equipment to ensure cleanliness, prior to entering the National Forest.
- Seeding will be considered if natural revegetation of ground cover species does not occur rapidly enough to protect an area from erosion.
- Minimize soil disturbance by limiting the extent of the area traveled by vehicles and by avoiding areas with wet soils.

Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative. Information in Table 2.2 is focused on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

Table 2.2. Summary of Impacts Associated with Primary Resource Concerns Identified during Public Involvement Comparison

Primary Resource Concern	Unit of Measure (Indicator)	Alternative 1 (No Action)	Alternative 2 (Proposed Action)
Human Health and Safety	Unregulated, dispersed recreational shooting on the Lakeside RD Relative risk of exposure to hazardous materials	No Impact However, the existing risk to human health and safety would continue under the No Action alternative, since unregulated, dispersed target shooting as an activity on the Lakeside RD is anticipated to continue.	The existing risk to human health and safety hazards from unregulated, dispersed recreational shooting on the ASNFs Lakeside RD would be expected to decrease from current levels, since it is anticipated that some target shooting may shift from the ASNFs Lakeside RD to the proposed public Second Knoll Shooting Range. Adherence to the ESP, Operating and Safety Plans is anticipated to maintain the relative risk of exposure to hazardous materials at their current levels.
Hazardous Materials	Potential for the introduction of hazardous materials	No Impact	Construction and operation of the proposed shooting range would not include the use of hazardous materials with the exception of chemical constituents contained in vehicle and equipment fuels (gasoline and diesel fuel), coolants (ethylene glycol), and lubricants (oils and greases). Implementation of effective lead management practices would further reduce the potential for lead contamination.
Noise	Presence or absence of sensitive receptors Potential changes to existing noise levels in the immediate vicinity of the proposed shooting range	No Impact	Direct noise impacts would be expected immediately adjacent to the proposed shooting range but no sensitive noise receivers are present at this location; these direct impacts would be limited to wildlife. The closest residential private properties are located farther away from where measurable noise differences were recorded; therefore, no direct or indirect effects would occur.
Land Use	Conformance with existing authorized land uses and Forest Plan directives	No Impact	ADOT would cancel their existing special use permit and transfer management of the materials source cinder pit to AGFD, per the terms outlined by the ASNFs in the AGFD special use permit. Land use conditions would change from an inactive materials source cinder pit to a developed shooting range. This change in conditions would not alter current land use management direction for the analysis area, since the 80 acres proposed for the shooting range is currently under a special use permit.
Socioeconomics	Activity of the local/regional economy Presence of Environmental Justice populations	No Impact	The changes in local/regional economic activity would be a beneficial impact to the local economies. There are no minority populations or low-income populations present.

Primary Resource Concern	Unit of Measure (Indicator)	Alternative 1 (No Action)	Alternative 2 (Proposed Action)
Wildlife	Presence or absence of wildlife (Threatened, Endangered, Proposed or Sensitive Species, Management Indicator Species, and Migratory Bird Treaty Act species) Potential for shooting range activities to impact wildlife	No Impact	Alternative 2 would have no known effects on any federally listed or proposed species (Appendix A), since none are likely to occur within the area of impact resulting from the project. Noise that would be generated is not anticipated to have impacts to any of the 28 species analyzed. Shooting range activities are not anticipated to impact wildlife, primarily because wildlife are not currently inhabiting, using, or foraging within the project area footprint (Appendix B). All shooting range activities (noise notwithstanding) would be limited to within the project area. Noise, as described in the Noise section, would increase within the project area footprint and along the boundary.
Recreation	Potential to change existing recreation experiences, settings, and opportunities of the Lakeside RD	No Impact	The existing recreation settings, experiences, and opportunities within the 80-acre project area proposed for the shooting range would be improved through the implementation of a public shooting range. The recreational target shooting currently taking place on Lakeside RD is anticipated to experience some shift from dispersed, unregulated, and unsupervised to a structured, supervised, and contained public shooting range. This anticipated shift would have beneficial, long-term impacts to the recreation setting of the Lakeside RD since many of the "negative" aspects of target shooting in the Lakeside RD would be expected to be reduced.
Water Resources	Potential to impact surface water quality of a 0.5-mile buffer surrounding the 80-acre project area	No Impact	Alternative 2 would not change the existing surface water conditions of a 0.5-mile buffer surrounding the 80-acre project area. All constructed features included in the proposed shooting range would not change or alter the surface water conditions of the 80-acre site, since there would not be drainages, wetlands, or other features considered as waters of the U.S. within the analysis area. Surface water runoff and sheet flow from rainwater accumulation within the proposed shooting range's shooting lanes would not be directed to flow off the 80-acre site. Implementation of the Proposed Action could potentially contaminate the ground, surface water, and groundwater via the deposition of lead resultant from shooting (see Hazardous Materials section); however implementation of best management practices, environmental stewardship planning, and annual monitoring are anticipated to minimize impacts to groundwater.
Air Quality	Potential to change existing air quality on the Lakeside RD	No Impact	Ground-disturbing activities during construction would have direct, site-specific impacts to air quality by increasing levels of particulate matter (fugitive dust) in the short term. Standard mitigation measures for construction activities such as wetting disturbed soils and covering trucks hauling materials would contribute to these impacts being only minor and short-term.

Primary Resource Concern	Unit of Measure (Indicator)	Alternative 1 (No Action)	Alternative 2 (Proposed Action)
Fire Risk/Management	Potential changes to the existing risk of fire and fuels at the proposed shooting range	No Impact	Alternative 2 would not have a direct effect on fire risk/management in the analysis area. Alternative 2 could have an indirect effect on fire risk/management on Lakeside RD lands outside the 80-acre project area proposed for the shooting range. By providing the public with an official shooting range, people would be less likely to frequent unsanctioned "wildcat" shooting areas on the ASNFs. Decreased visitation to these shooting areas would have a long-term beneficial impact to fire risk/management on the Lakeside RD.
Cultural/Heritage Resources	Presence or absence of cultural and/or heritage resources	No Impact	No Impact. An archaeological survey of the project area resulted in the rediscovery of a previously recorded site, discovery of three newly identified sites, and three isolated occurrences of cultural resources. The newly recorded sites as well as the previously recorded site are recommended ineligible for listing on the NRHP. If cultural materials or human remains are discovered during project implementation, all work in the 80-acre project area proposed for the shooting range would cease and the area would be secured; the ASNFs Archaeologist would be notified within 24 hours of the discovery.

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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. For purposes of this analysis, the term *project area* refers to the 80-acre site proposed for the shooting range and access road. The term *analysis area* refers to the resource's geographic bounds being analyzed. The baseline condition of the affected environment (or existing conditions) serves as the basis for analysis of effects and comparison of each alternative, as presented in Chapter 2. The current conditions and any known trends are described to provide readers with a basis for assessing the consequences of the alternatives; the resources and potential impacts discussed in the following sections are related issues identified during public and agency scoping.

Resource values and resources described in detail are: human health and safety, hazardous materials, noise, land use, socioeconomics, wildlife (including special-status species, management indicator species, and migratory birds), recreation, water resources, air quality, fire risk/management, and cultural/heritage resources.

Resource values and resources not analyzed in detail include vegetation (including riparian), wilderness, special designations, visual resources, soil resources, grazing, and travel management. These resources were either not brought up during public scoping as key issues, issues, or primary resource concerns or were not recommended for detailed analysis by Forest Service resources staff. Information regarding resources not analyzed in detail can be found in the project record.

The potential direct, indirect, and cumulative effects of the alternatives analyzed in detail are considered. Effects are quantified where possible, and qualitative discussions are included. Potential impacts are described in terms of type, context, duration, and intensity. Definitions are defined as follows.

- **Type** describes the classification of the impact as either beneficial or adverse, direct or indirect:
    - *Beneficial*: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
    - *Adverse*: A change that moves the resource away from a desired condition or detracts from its appearance or condition.
    - *Direct*: An effect that is caused by an action and occurs at the same time and place.
    - *Indirect*: An effect that is caused by an action but occurs later in time or is farther removed in distance, but is still reasonably foreseeable.
- **Context** describes the area or location in which the impact would occur. Are the effects site-specific, local, regional, or even broader?
- **Duration** describes the length of time an effect would occur, either short-term or long-term:
    - *Short-term* impacts generally last only during construction, and the resources resume their pre-construction conditions following construction.
    - *Long-term* impacts last beyond the construction period, and the resources may not recover to their pre-construction conditions for a longer period of time following construction.
- **Intensity** describes the degree, level, or strength of an impact. For this analysis, intensity has been categorized into negligible, minor, moderate, and major.

Impacts are considered minor if project-related impacts would occur, but resources would retain existing character and overall baseline conditions. Impacts are considered moderate if project-related impacts would occur, and resources would partially retain existing character. Some baseline conditions would remain unchanged. Finally, project-related impacts considered as major would create a high degree of change within the existing resource character and overall condition of resources.

The following section is organized by resource. Resource indicators are discussed in each section below. Within each section, the affected environment is briefly described, followed by the anticipated environmental consequences (impacts) of implementing each alternative.

Cumulative Effects

Cumulative effects are discussed under each alternative presented per resource. A cumulative effect on the environment results from incremental effects of the Proposed Action, when added to the effects of other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes the other actions and regardless of land ownership on which the other actions occur (40 CFR 1508.7). An individual action when considered alone may not have a significant effect, but when its effects are considered in sum with the effects of other past, present, or reasonably foreseeable future actions, the effects may be significant.

Cumulative effects in the analysis are assessed in terms of how the alternative would add to the past, present, and reasonably foreseeable future actions described below. Existing conditions by resource reflect the effects of past and present actions that have occurred.

Past and Present Activities

The environmental analysis required under NEPA is forward-looking in that it focuses on the potential impact of the Proposed Action the agency is considering. Thus, review of past actions is required to the extent that this review informs agency decision making regarding the Proposed Action (36 CFR 220.4(f)). The timeframe for specific actions was 10 years, and activities were generally limited to projects that occurred within or adjacent to the project area.

- **Past Road Construction**—U.S. Route 60 was constructed more than 10 years ago; however, it is considered in this analysis since U.S. Route 60 provides the only access to the proposed Second Knoll Shooting Range.
- **Existing ADOT Materials Source Cinder Pit**—ADOT has managed the existing materials source cinder pit under an existing special use permit. Due to ADOT's activities, the project area has been excavated and sourced for cinder material in support of regional road and highway construction.
- **Livestock Grazing—**The existing ASNFs FLRMP designates the Show Low Allotment, which is currently an active allotment. The materials source cinder pit is fenced off; therefore no livestock grazing activities occur within the project area.
- **Community Development**—The City of Show Low (and Pinetop-Lakeside) have experienced growth in the last 10 years, particularly in seasonal homeownership.
- **Grassland restoration activities in Woolhouse WQA**—In 2007, the ASNFs conducted grassland restoration on approximately 2,500 acres within the Woolhouse WQA. None of the 2007 activities occurred in areas adjacent to the project area.
- **Recreational Activities—**Due to the attractiveness of the region's cool-climate relative to the Phoenix metropolitan area and the proximity of Show Low and Pinetop-Lakeside, areas available (especially National Forest land) to pursue recreational activities are within the

analysis area. The recreational activities include big-game hunting, hiking, camping (both developed and dispersed), fishing, wildlife viewing, and horseback riding.

- **Wallow Fire**—The Wallow Fire burned approximately 490,000 acres of the ASNFs in 2011. The proposed shooting range location was not included within the perimeter of the Wallow Fire; the nearest burned area is approximately 30 miles east of the proposed shooting range.

Future Activities

Reasonably foreseeable future activities are generally limited to activities published in the quarterly Forest Service Schedule of Proposed Actions. Activities on adjacent lands and activities that are likely to occur are included.

- **ASNFs Revised LRMP EIS**—The ASNFs is currently undergoing revision of the LRMP. This process involves retaining key aspects of the current plan that continue to be appropriate for Forest management and revising additional parts to account for social and resource changes and the evolution of scientific information and methodology.
- **ASNFs Proposed Public Motorized Travel Management Plan EIS**—Currently the ASNFs is in the process of analyzing changes to travel management in conformance with the Travel Management Rule (36 CFR 212, 251(b), 261(a)), including prohibiting motor vehicle use off the designated National Forest road system. However a decision has not yet been made by the ASNFs, so it is too early to predict the changes that would occur from this decision.
- **Lakeside District Office Conveyance EA**—A new district office and location for the Lakeside Ranger District is being proposed, as well as the sale of Lakeside campground. This would result in a loss of 80 acres of National Forest System lands. Potential locations for the new 20-acre administrative site include a site near the junction of Penrod and Porter Mountain Roads, approximately 5 miles south of the Proposed Action project area.

Other activities not listed on the SOPA that may have effects to the Proposed Action include:

- **Future Wildfires**—For nearly a century, wildfires on all National Forests were actively suppressed. This led to a buildup of ground fuels and overstocked tree stands. Due to these stand conditions, fires are often actively suppressed to reduce the chance of a major stand replacement fire. In the event that a wildfire does occur, the response would be determined on an individual basis due to a variety of physical and social variables.
- **Future Recreational Activity and Community Development**—Due to the attractiveness of the region's cool climate relative to the Phoenix metropolitan area, and the proximity of available Show Low and Pinetop-Lakeside recreational areas (especially National Forest land), recreational activities are anticipated to continue increasing in the region. Human population and community development within the Lakeside RD is expected to continue to increase and will likely include home and business construction and infrastructure improvements such as highway developments, power distribution, and arterial roadways.

Human Health and Safety

Affected Environment

The issue from public scoping (see Chapter 1) regarding human health and safety were generated from shooting and shooting-safety comments. Commenters were concerned that the lack of a local, regulated shooting range may enable unsafe shooting conditions and conflicts with other shooters and users on the Lakeside RD. Therefore, the overview of human health and safety of the Lakeside RD is

focused on the unregulated, dispersed recreational shooting on the ASNFs Lakeside RD. Other human health and safety matters (such as gun safety) are beyond the scope of this EA.

The analysis area for human health and safety is the ASNFs Lakeside RD, which includes the 80-acre project area proposed for the shooting range. The analysis area includes the city of Show Low, where much of the local emergency service (police, fire, ambulance, and safety officers) would originate if needed.

Safety in the analysis area is managed by a combination the Navajo County Sherriff's Office, ADOT (U.S. Route 60 and existing materials source cinder pit), and Forest Service law enforcement, as well as State, County, and municipal law enforcement. There are few existing risks to human safety in the 80-acre project area. The project area has been previously disturbed by ADOT through its use of the area as a materials source cinder pit. No hazardous wastes, confined spaces, mine shafts, or industrial equipment is present and the project area is fenced. Illegal shooting and household dumping and littering in the project area have introduced some hazards to human safety. The speed limit of the existing access road (Forest Road 206) is 25 miles per hour.

Recreational shooting is allowed in the Lakeside RD. As specified in 36 CFR 261.10, areas of the Lakeside RD where recreational shooting is not authorized includes: in or within 150 yards of a building, residence, campsite, developed recreation site or occupied area; across or on a National Forest System road or a body of water; into or within any cave; or in any manner or place whereby any person or property is exposed to injury or damage as a result of such discharge. The most common areas to target shoot are existing materials source cinder pits and the areas of the Lakeside RD nearest to the surrounding communities, including Show Low. As indicated in the Purpose and Need (see Chapter 1), the Show Low region (which includes the Lakeside RD) is without a public shooting range that is able to accommodate group events, would be open to the public during all operating hours, and would be located outdoors. Recreational shooting on the Lakeside RD occurs year-round but is most common during the summer and big-game hunting seasons.

Human health and safety during target shooting is incumbent upon the shooter's strict adherence to gun safety. Though it is legal for the public to target shoot on the Lakeside RD, it is difficult to enforce and regulate target shooting on all public lands. The unregulated nature of target shooting on the Lakeside RD can enable conflicts, both intentional and unintentional. As expressed during public scoping, many shooters prefer a designated and regulated shooting range that offers less risk to human health and safety than unregulated, dispersed recreational shooting on the ASNFs Lakeside RD. Arizona Revised Statutes (ARS) 17-309 (a)(4) prohibit discharging firearms from 0.25 mile of any occupied structure unless permission is granted from the landowner. In addition, the existing law found at ARS 17-301 (b) prohibits discharging firearms upon, from, or across a road.

Current levels of lead accumulation within the analysis area are unknown, but would be determined by the AGFD if the ASNFs grants a special use permit. It is assumed that lead deposition occurs in the analysis area because of past and present random shooting and target shooting activities.

Environmental Consequences

Factors for Alternative Comparison (Indicators): Human Health and Safety

- Assess the change to unregulated, dispersed recreational shooting on the ASNFs Lakeside RD (qualitative).
- Assess the relative risk of exposure to hazardous materials (as analyzed separately in the Hazardous Materials section) (qualitative).

Alternative 1 – No Action Direct and Indirect Effects

Under the No Action alternative, the ASNFs would not approve the special use permit, and the 80-acre project area proposed for the shooting range would not be developed. ADOT would continue to manage the project area as an inactive materials source cinder pit.

The existing risk to human health and safety hazards from unregulated, dispersed recreational shooting on the ASNFs Lakeside RD would be expected to continue at current levels since no shooting range would be developed. The risk to human health and safety would continue under the No Action alternative, since unregulated, dispersed target shooting as an activity is anticipated to continue to increase in popularity in the analysis area, yet no public shooting range would be developed.

Cumulative Effects

The analysis area for cumulative effects to human health and safety is the Lakeside RD. The existing environmental conditions of the 80-acre project area proposed for the shooting range reflect the natural and anthropogenic changes brought on by long-term human occupancy and use of the project area (the existing materials source cinder pit).

The additive effect of the cumulative projects listed in the Chapter 3 introduction, when analyzed with the No Action alternative, would be minor. The ASNFs Revised LRMP EIS is not anticipated to open or close areas of the ASNFs to recreational/target shooting beyond the existing conditions. The Proposed Public Motorized Travel Management Plan (TMP) would cease or limit off-road vehicle use, and may change the total open road density of the Lakeside RD, but the exact level of change is not known at this time. Ceasing or limiting off-road vehicle use of the ASNFs (including the Lakeside RD) would limit or restrict most dispersed recreational shooting to areas along roads open for public use, increasing the risk to human health and safety.

Future wildfires (particularly catastrophic wildfires that severely burn thousands of acres) may have an additive cumulative effect to human health and safety of the Lakeside RD, if the wildfire results in Forest closures that include popular target shooting areas. Closures may limit availability for dispersed target shooting, resulting in unsafe concentrations of shooting activities and increasing risks to human health and safety.

Alternative 2 – Proposed Action Direct and Indirect Effects

Approval of the proposed shooting range is anticipated to have beneficial and long-lasting impacts to human health and safety on the Lakeside RD by decreasing the amount of “wildcat” shooting that currently takes place in areas of the ASNFs in the local region. Enabling the creation of a safe and structured shooting environment to conduct shooting safety training is anticipated to have beneficial and long-lasting impacts to human health and safety on the ASNFs.

The existing risk to human health and safety hazards from unregulated, dispersed recreational shooting on the ASNFs Lakeside RD would be expected to decrease from current levels, since it is anticipated that some target shooting may shift from the ASNFs Lakeside RD to the proposed Second Knoll public shooting range. Target shooting would continue to take place on the Lakeside RD. However, some shooters would cease target shooting on the Lakeside RD, since a regulated shooting range is preferred by many shooters. No target shooting data are available to quantify the anticipated change in unregulated target shooting on the ASNFs. However, as public comments indicate, the concept of a regulated shooting range in the Show Low region would attract shooters that may desire the controlled shooting lanes, permanent target locations, Range Master supervision, and other factors that public shooting ranges offer.

Expended ordnance (used bullets) from the shooting range would introduce hazardous materials (lead) at the 80-acre project area. The AGFD has an approved *Hazardous Waste Management Plan for Department Owned/Operated Shooting Ranges* (2006), which would be adhered to for this project. The plan includes a site-specific Lead Best Management Practices Plan and a Shooting Range Staff Health and Safety Plan (see Project Record). In addition, the EPA's *Best Management Practices for Lead at Shooting Ranges* provides best management practices for the management, remediation, and maintenance of potential lead accumulations at shooting ranges. These plans include protocols and directives for managing human health and safety of employees and customers of the proposed shooting range (including gun safety, lead safety, emergency procedures, etc.). Adherence to these plans is anticipated to maintain the relative risk of exposure to hazardous materials at their current levels.

Cumulative Effects

The additive effect of the cumulative projects listed in the Chapter 3 introduction, when analyzed with the Proposed Action, would be minor.

The overall cumulative effect for recreational activity on the Lakeside RD, particularly target shooting, would be a beneficial, long-term effect since the approval of the special use permit would enable the creation of a safe and structured shooting environment for target shooting, shooting instruction, and shooting safety training, that is anticipated to have beneficial and long-lasting impacts to human health and safety on the ASNFs.

Hazardous Materials

Affected Environment

The area of analysis for hazardous materials is the 80-acre project area proposed for the shooting range. As previously stated, the project area is an existing inactive materials source cinder pit managed by ADOT. Numerous Preliminary Initial Environmental Site Assessments (PIESAs) have been conducted at the project area in support of previous environmental clearances required for the use, construction, and operation of the materials source cinder pit (per NEPA, ADOT environmental clearance standards, and Forest Service special use permit requirements). No hazardous materials (i.e., hazardous waste, solvents, lubricants, fuels, etc.) have been identified at the project area.

Environmental Consequences

Factors for Alternative Comparison (Indicators): Hazardous Materials

- Evaluate the potential for the introduction of hazardous materials at the proposed site (quantitative and qualitative).

Alternative 1 – No Action Direct and Indirect Effects

The No Action alternative would not introduce hazardous materials to the proposed shooting range site.

Cumulative Effects

The area of analysis for hazardous materials cumulative effects is the project area. There would be no potential for the projects listed on the Lakeside RD SOPA report or the future activities identified for this project to introduce hazardous materials to the 80-acre project area proposed for the shooting range.

Alternative 2 – Proposed Action Direct and Indirect Effects

Construction and operation of the proposed shooting range would not include the use of hazardous materials, with the exception of chemical constituents contained in vehicle and equipment fuels (gasoline and diesel fuel), coolants (ethylene glycol), and lubricants (oils and greases). AGFD and its contractors would comply with all applicable hazard communication and hazardous materials laws and regulations regarding these chemicals and would implement the procedures outlined in the ESP, discussed below. In addition, AGFD would comply with all applicable federal and state regulations regarding notices to federal and local emergency response authorities and development of applicable emergency response plans, if required. Thus no direct or indirect impacts from hazardous materials are anticipated.

Range operation would include an ESP. An ESP is a written plan or "road map" that lays out the planning, implementing, monitoring, and documentation of progress of environmental management and improvements at the shooting range. By developing and implementing an approved ESP, AGFD would satisfy shooting range recommendations and guidance that are encouraged by the National Shooting Sports Foundation, National Association of Shooting Ranges, National Rifle Association, and similar organizations.

Lead

Lead can introduce environmental concern if topographical and surrounding area conditions (e.g., proximity to wetlands) and hydrologic setting enable leaching or streaming of lead shot, pellets, or bullets. As described in the Water Resources section, the analysis area contains no wetlands or surface water features. The proposed shooting range shotfall[1] area would be flat to prevent rainfall water accumulation from forming down-gradient sheet flow.

There would be four potential movement pathways where lead that may have been deposited on the proposed shooting range may introduce a risk to human health:

- as airborne particulate matter;
- as waterborne particles in suspension in storm runoff;
- in solution in stormwater runoff; and
- in solution in groundwater.

Implementation of effective lead management practices, as described in Chapter 2, would further reduce the potential for lead contamination.

The Resource Conservation and Recovery Act provide the framework for the EPA's solid and hazardous waste management program, including lead. The AGFD has issued a *Hazardous Waste Management Plan for Department Owned/Operated Shooting Ranges* (AGFD 2006), which would be followed for this project (Appendix C). The EPA's *Best Management Practices for Lead at Outdoor Ranges* (2005) would be applied to the proposed shooting range if a special use permit is approved. The current level of lead contamination at the project area is not known; however, it is unlikely to contain high levels of hazardous materials (including lead) since the previous uses of the materials source cinder pit did not use, store, or manufacture hazardous materials. If the special use permit is approved, AGFD would conduct appropriate lead surveys according to the lead management recommendations and protocols established by the ESP (as approved by the ASNFs).

[1] Shotfall zone: the area of the target range in which the ordnance (bullet) comes to a stop, normally embedded into an earthen berm.

Cumulative Effects

None of the actions listed in the SOPA or future activities identified for this analysis would introduce hazardous materials into the project area. The proposed shooting range would introduce hazardous materials to the project area, as described in the direct and indirect effects above. The proposed project's chances of contributing to cumulative hazardous materials effects is unlikely since no other projects would intersect with the proposed shooting range and since AGFD would manage the lead expected to accumulate during the operation of the proposed shooting range in accordance with federal, state, and local law. The AGFD would be required to fulfill the requirements of Forest Service Handbook 2709.14, Chapter 70, ESP monitoring requirements, as specified by the special use permit.

Noise

Affected Environment

The analysis area for noise is described as a 3-mile buffer surrounding the 80-acre project area proposed for the shooting range. AGFD conducted a noise study in 2012 (Acoustical Consulting Services 2012). The 3-mile buffer was chosen during the study to include nearby sensitive receptors.

Different people have different perceptions of what sound they like and what sound they don't like. Noise differs from pleasant sound only if it often disturbs us. The determination of what sounds are considered to be noise is a personal judgment of annoyance based on the intensity, duration, time of day, and number of times the sound event takes place. Sound measurements are based on sound pressure levels expressed in A-weighted decibel (dBA) units. A higher decibel level of sound generally correlates with people's judgment of the annoyance of the sound.

When Congress passed the Noise Control Act of 1972, the EPA was tasked with publishing descriptive data on the effect of noise which might be expected from various levels and exposure situations and to publish information. State standards are governed by the May 17, 2002, Arizona State Legislature Senate Bill 1008 amending Title 17, ARS, Chapter 6, relating to outdoor shooting ranges. It requires the sound from a shooting range not exceed an equivalent noise level of 64 dBA when measured within 20 feet from the nearest occupied structure.

The AGFD conducted a noise study in order to determine the existing ambient noise conditions at five locations including: the site boundary; 0.75 mile north of the site (adjacent to the access road's intersection with U.S. Route 60); 1.2 miles east of the site (on Forest Service land); the private property nearest to the site (approximately 1.5 miles to the west); and approximately 2.7 miles to the south of the site (Acoustical Consulting Services 2012). The closest private property to the site is an undeveloped parcel that is not zoned for residential use, on the northern side of U.S. Route 60 approximately 1 mile from the project area. The main outside sources of sound at these locations include passing traffic, aircraft flying overhead, and gusts of wind. The physical setting of the materials source cinder pit helps to contain noises that emanate from within the pit. The noise study recorded ambient noise conditions at three different times of the day, as identified in Table 3.1 below:

Table 3.1. Existing Ambient Noise Conditions

	Site Boundary	0.75 mile north of site	1.2 miles east of site	Nearest private property (1.5 miles west of site)	2.7 miles south of site
7:00 a.m.	32–36 dBA	N/A	39–49 dBA	34–41 dBA	38–42 dBA
12:00 a.m.	40–45 dBA	44–56 dBA	30–45 dBA	37–42 dBA	33–40 dBA
5:00 p.m.	41–44 dBA	57–64 dBA	31–49 dBA	41–44 dBA	40–44 dBA

Source: Acoustic Consulting Services (2012)

Environmental Consequences

Factors for Alternative Comparison (Indicators): Noise

- Determine the presence or absence of sensitive noise receptors within 1,000 feet of proposed project (quantitative).
- Evaluate the potential changes to the existing noise levels in the immediate vicinity of the proposed shooting range (quantitative).

Alternative 1 – No Action Direct and Indirect Effects

The No Action alternative would not have any direct or indirect effects on existing ambient noise conditions.

Cumulative Effects

Under the No Action alternative, since there are no direct or indirect effects to noise, there would be no cumulative effects to noise.

Alternative 2 – Proposed Action

The noise study conducted by the AGFD tested the potential noise impacts of the proposed shooting range. The shooting range would be open from dawn until dusk, therefore no noise impacts would occur at nighttime. Tests were conducted at the same locations, weather conditions, and times of day that the ambient conditions were recorded using a variety of guns that would be expected to be used at the shooting range. The variety of guns tested were pistols, rifles, and shotguns as well as an "all shoot" scenario where all tested guns are shot at the same time.

The study identified the closest private property parcel to be 1.5 miles to the west of the project area. No other potential sensitive noise receivers were included in the noise study and no sensitive noise receivers are located within 1,000 feet of the proposed project.

The noise study indicates that noise impacts would occur, as expected, at the perimeter/boundary fence of the proposed shooting range between 61 dBA and 80 dBA. At the second closest test location—the access road's intersection with U.S. Route 60—noise from shooting was barely audible over ambient conditions with decibel readings between 48 and 58 dBA. The noise impact at the perimeter/boundary fence would represent a 27% to 37% increase over ambient conditions. The reduction of noise impacts as distance from the shooting range increased continued at the remaining farthest three test locations, and the majority of the testing events at these locations were not measurable. The test at the closest private property to the proposed shooting range (1.5 miles to the west of the project location) indicates that shooting would be either barely audible or not audible over ambient conditions. The closest occupied residence is approximately 2.7 miles from the shooting range and no measurable change in noise was recorded at this distance.

Based on the noise study results, direct noise impacts would be expected immediately adjacent to the proposed shooting range but no sensitive noise receivers are present at this location. The closest residential private properties are located farther away from where measurable noise differences were recorded, therefore, no direct or indirect effects would occur.

Cumulative Effects

The additive effect of the cumulative projects listed in the Chapter 3 introduction, when analyzed with the Proposed Action, would be negligible since the Revised LRMP and Public Motorized TMP would not alter noise conditions within the analysis area.

If the Proposed Action were implemented, the cumulative effects of noise to recreational and wildlife activity in the surrounding areas (e.g., Woolhouse WQA) would be minor, but would represent a change from the current noise conditions. Therefore, under the Proposed Action, the cumulative effects to noise would be minor since some future recreational activity (e.g., wildlife viewing and experiencing solitude) in nearby areas would experience changes to the existing noise levels.

Land Use

Affected Environment

The area of analysis for land use is the Lakeside RD, which includes the project area. The project area is located entirely on lands owned by the Forest Service. As stated in Chapter 2, ADOT holds the current special use permit and operates the project area as an inactive material source cinder pit. Past land use of the materials source cinder pit includes gravel/cinder extraction, expansion, and storage. The materials source cinder pit was originally operated by the Federal Highways Administration during the construction of U.S. Route 60 in 1932 (ADOT 1984). The original materials source cinder pit was approved for expansion in 1979, and ADOT assumed management of the Second Knoll materials source cinder pit and associated access road as number 1061 (ADOT 1984). Forest Road 206 was designated during the ASNFs route inventories conducted in support of the LRMP amendments. Approximately 52% of the project area (excluding the access road) has been previously affected by the construction and use of the existing materials source cinder pit. Thus, the land use within the project area has remained largely the same since the 1930s.

There are a variety of land uses on the Lakeside RD; each with the priority of maintaining and improving the health, diversity, and productivity of forest ecosystems for the enjoyment of current and future generations. Specific land uses in the analysis area include grazing, dispersed recreation, communication sites, and utility and transportation corridors. Land uses within and adjacent to the 80-acre project area proposed for the shooting range are limited to grazing and dispersed recreation. The approximately 17,297-acre Woolhouse WQA is located adjacent to the project area, authorized by the ASNFs Forest Supervisor in Special Closure Order No. 01-402.

The 80-acre project area proposed for the shooting range is designated by the ASNFs LRMP as Management Area 2, Woodland (MA-2). MA-2, Woodland consists of pinyon and juniper vegetation. MA-2, Woodland comprises approximately 178,000 acres of the ASNFs. Traditional uses of MA-2 include hunting, fuelwood gathering, pinyon nut gathering, Christmas tree and juniper post cutting, big-game winter range, and grazing. These traditional uses do not currently take place within the 80-acre project area proposed for the shooting range, but do occur in other areas of MA-2. Management emphasis is on fuelwood production, wildlife habitat, watershed condition, and livestock grazing. Other resources are managed in harmony with the emphasized resources (Forest Service1987a).

No other land use designations or authorizations are included in the project area.

Environmental Consequences

Factors for Alternative Comparison (Indicators): Land Use

- Evaluate the potential for changes to current land use, and conformance with the ASNFs LRMP (1987a) (qualitative).

Alternative 1 – No Action Direct and Indirect Effects

ADOT would continue to manage the project area as an inactive materials source cinder pit. Changes to the current land use would not occur.

Cumulative Effects

The No Action alternative would not contribute to land use cumulative effects since there would be no changes to current land use (including motorized vehicle restrictions).

Alternative 2 – Proposed Action Direct and Indirect Effects

If the Proposed Action is approved, ADOT would cancel their existing special use permit and transfer management of the materials source cinder pit to AGFD, per the terms outlined by the ASNFs in the AGFD special use permit. Land use conditions would change from an inactive materials source cinder pit to a developed shooting range. This change in conditions would not alter current land use management direction for the analysis area, since the 80 acres proposed for the shooting range are currently under a special use permit. Though the change in land use conditions that would occur under the Proposed Action are not specifically addressed in the ASNFs LRMP, other goals and objectives in the LRMP (including outdoor recreation, land management planning, and human resources [Forest Service 1987a]) in addition to working drafts of the ASNFs Revised LRMP EIS indicate that a special use permit for a shooting range would be consistent with the goals and objectives of the LRMP. Working drafts of the ASNFs Revised LRMP EIS indicate that the ASNFs is establishing objectives for "Community-Forest Interaction." Specifically, the management approach that the ASNFs has established in order to maintain Special Uses Desired Conditions states: "Special use authorizations are considered for uses that complement other opportunities and are based on public need or cannot be met on private or other federal lands" (Forest Service 2009).

Cumulative Effects

The additive effect of the cumulative projects listed in the Chapter 3 introduction, when analyzed with the Proposed Action, would be anticipated to have minor cumulative effects to land use. The ASNFs Revised LRMP and Public Motorized TMP would have cumulative effects to land use, since these ongoing planning activities would likely designate new land use management guidance for the ASNFs, including the Lakeside RD. The Revised LRMP and Public Motorized TMP would not be anticipated to designate new land uses or authorizations for the 80-acre project area proposed for the shooting range.

Socioeconomics

Affected Environment

The area of analysis is Navajo County, which includes the Show Low and Pinetop/Lakeside areas and portions of the Lakeside RD.

Tourism and recreation are the foundation of the economy of Show Low. Due to its size and location, the community serves as a regional trade and services center for southern Navajo County and portions of southern Apache County. Show Low serves as an entry point for visitors to many of the White

Mountain and Lakeside RD recreation areas. Many recreational activities, such as big-game hunting, are economically important to the city of Show Low and Pinetop-Lakeside. These recreational activities and the subsequent tourism often result in multiday visits, and tourism is often at its busiest during the hunting seasons.

Navajo County business offices and regional headquarters, including Navapache Regional Medical Center, a regional trauma hospital, are maintained in Show Low. Show Low and Pinetop-Lakeside's employment centers around tourism services, education, medical services, and light manufacturing.

Businesses located within Show Low include machine shops, wood-pellet production, construction, transportation services, and numerous nationally known retailers. The City of Show Low operates the regional airport which provides daily commuter service to Phoenix Sky Harbor Airport (City of Show Low 2012).

Environmental Justice

The EPA's Office of Environmental Justice (EPA 2013) defines environmental justice as

> [t]he fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group[s] should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Meaningful involvement means that 1) community residents in the potential impact area have an appropriate opportunity to participate in decisions about a proposed activity that would affect their environment and/or health; 2) the public's contribution can influence the regulatory agency's decision; 3) the concerns of all participants involved would be considered in the decision-making process; and 4) the decision-makers seek out and facilitate the involvement of those in the potential impact area (EPA 2013). Environmental justice is achieved when everyone, regardless of race, culture, or income, enjoys the same degree of protection from environmental and health hazards and has equal access to the decision-making process, in order to have a healthy environment in which to live, learn, and work (EPA 2013).

EO 12898 (February 11, 1994) and its accompanying memorandum have the primary purpose of ensuring that "each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

There are no minority and/or low-income populations within the project area. The analysis area (Navajo County) population is 53% white; minority populations make up 47%, and the Hispanic/Latino population is 11% of the total population (the sum of percentages given are not intended to equal 100%, as some of the race categories are not mutually exclusive (e.g., *minority* or *Hispanic/Latino populations*). This is well below the minority population breakdown at state levels, where the minority populations and Hispanic/Latino populations are 73% and 30%, respectively (Table 3.2). According to the U.S. Census Bureau, just over 26% of all families within the analysis area have an income below the poverty level. By comparison, families with incomes below the poverty level make up 16% of the families in Arizona (U.S. Census Bureau 2013).

There are no tribal lands in the immediate area of the proposed shooting range. The Fort Apache Reservation is within the analysis area, approximately 15 miles south of the 80-acre project area.

Table 3.2. Local, Regional, and Statewide Minority Populations

	Arizona		Navajo County	
	Number	% State	Number	% County
Total population	6,553,255	N/A	107,398	N/A
White	5,600,500	85%	55,900	53%
American Indian and Alaska Native	350,000	5%	45,600	43%
Non-White	2,900,000	44%	61,000	57%
Hispanic/Latino	2,000,000	30%	12,000	11%

Note: The sum of populations and percentages given are not intended to equal 100%, as some of the race categories are not mutually exclusive (e.g., *minority* or *Hispanic/Latino populations*)

Source: 2013 U.S. Census Bureau data.

Environmental Consequences

Approval of the proposed shooting range is anticipated to have beneficial and long-lasting impacts to the socioeconomics of the local region by attracting tourists and recreational shooters to the Show Low and Pinetop/Lakeside area.

Factors for Alternative Comparison (Indicators): Socioeconomics and Environmental Justice

- Evaluate the potential changes in local/regional economic activity.
  - Changes in economic activity from construction of the range (qualitative).
- Evaluate the potential for disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.

Alternative 1 – No Action Direct and Indirect Effects

There would be no increase in local/regional economic activity because no potential tourism revenue or visitorship would be generated from shooting range activities.

There are no minority populations and low-income populations that would be impacted; therefore the No Action alternative would have no disproportionate adverse environmental justice effects.

Cumulative Effects

The No Action alternative would not contribute to socioeconomic cumulative effects since proposed activities would not occur and tourism revenue or visitorship to Navajo County would not be anticipated to change. There are no minority populations and low-income populations; therefore the No Action alternative would have no disproportionate adverse environmental justice cumulative effects.

Alternative 2 – Proposed Action Direct and Indirect Effects

AGFD would administer design, construction, and operation of the proposed shooting range. Construction spending and employment to construct the range would be generated locally. Local construction contracts would be pursued per AGFD contracting policy, which include nondiscrimination requirements. All revenue generated from the operation of the shooting range would be administered by the AGFD Shooting Range Branch. Applicable Navajo County taxes and

fees would apply, in addition to the terms of the special use permit administered by the Lakeside RD. Local economic activity would increase due to the presence of the shooting range as an additional tourist draw.

The changes in local/regional economic activity would be a beneficial impact to the local economies. The shooting range is anticipated to draw tourists and recreational shooters. Public scoping comments indicate support of the proposed shooting range from the Phoenix and Tucson metropolitan areas. Per the terms of the special use permit, the proposed shooting range may generate additional tourism from other states.

There are no minority populations and low-income populations that would be impacted; therefore the Proposed Action would have no disproportionate adverse environmental justice effects.

Cumulative Effects

The additive effect of the cumulative projects listed in the Chapter 3 introduction, when analyzed with the Proposed Action, would be anticipated to have beneficial cumulative effects to socioeconomics. Increased future recreational activity and community development would benefit the proposed shooting range, thus benefiting the local/regional economic activity and potentially increasing annual range visitorship (including special events) and tourist spending. Future development and growth is affected by a variety of factors unrelated to the proposed shooting range, including economic conditions and the availability of private land. Consequently, it is not possible to predict when, how, where, or to what extent development may occur. The Revised LRMP and Public Motorized TMP would not have cumulative effects to socioeconomics. There are no minority populations and low-income populations; therefore the Proposed Action would have no disproportionate adverse environmental justice cumulative effects.

Wildlife

Affected Environment

The analysis area for wildlife is the Lakeside RD, which includes the 80-acre project area proposed for the shooting range. The project area is located in the transition zone between Plains and Great Basin Grassland and Pinyon-Juniper Woodland at elevations ranging between approximately 6,495 and 6,620 feet, with vegetation consisting of a mix of the two vegetation types. However, a large portion of the project area is disturbed as a result of past activities and includes existing materials source cinder pits, roads, and tailings piles. The only portion of the project area that contains woodland vegetation is in the southwest corner. The rest of the project area is either devoid of vegetation or contains grassland species or species associated with disturbed areas.

Endangered, Threatened, Proposed, and Sensitive Species

A list of endangered, threatened, proposed and sensitive species was compiled by the ASNFs with concurrence by the USFWS Phoenix Endangered Species Office on June 20, 2008. On April 30, 2012, the USFWS reinitiated formal consultation under Section 7 of the Endangered Species Act as part of the ASNFs LRMP revision and issued a Biological Opinion (USFWS 2012). In addition, the Navajo County species list dated April 23, 2012 provided by the USFWS was also reviewed (Appendix A).

The ASNFs received the Region 3 Forest Service sensitive species list, dated September 2007, from the Regional Forester. The USFWS-approved species list for the ASNFs was reviewed for endangered, threatened, proposed, and sensitive species and their critical habitat (if applicable). The most recent survey information, knowledge of species and habitats, review of websites, and site-specific locations, as well as the overall range of species were used in determining if any listed,

proposed, or sensitive species, or critical/suitable habitats would be affected by the Proposed Action. The USFWS-approved species list for Navajo County was reviewed for endangered, threatened, proposed, and sensitive species and their critical habitat (if applicable) that may occur in the proposed Second Knoll Shooting Range project area (SWCA Environmental Consultants [SWCA] 2013a).

Aquatic species are not considered in this analysis since the project area contains no water sources, water bodies, or stock tanks, and no streams, rivers, or dry washes are located downstream of the project area.

Tables 3.3 and 3.4 below describes the 28 endangered, threatened, proposed and sensitive species that may occur on the Lakeside RD. Table 3.4 indicates whether designated critical habitat may occur on the Lakeside RD. Further endangered, threatened, proposed, and sensitive species detail is available in the Biological Assessment and Biological Evaluation documents, which can be found in the project record.

Table 3.3. Analysis of Federally Listed Threatened and Endangered Species

Species	USFWS Status and Year*	Critical Habitat Present	Key Habitat Elements	Status within Action Area of Project	Species Analyzed in Detail?
Chiricahua leopard frog (*Lithobates chiricahuensis*)	T/SEN 2002	No	Typically occurs in oak and mixed oak and pine woodlands. Almost always associated with permanent water, usually with emergent and submergent aquatic vegetation. Prefers rocky streams with deep rockbound pools. Inhabits montane springs, streams, and tanks. Historically found in valley wetlands and cienegas. In Arizona, 50% of the populations documented are associated with natural lotic systems; 39% with stock tanks, and 11% with natural or artificial lakes.	There is no suitable habitat for this species within the project area. Additionally, there is no potential for significant or measurable downstream impacts generated by this project that would affect occupied or suitable habitat for this species. This species was last recorded on the Lakeside RD in 1974 in Rainbow Lake. In addition, all suitable habitat in the adjacent areas to this project, including tanks, was surveyed for the Timber Mesa/Vernon Wildland Urban Interface Fuels Reduction and Forest Restoration Project in 2011 and results were negative.	No
Little Colorado spinedace (*Lepidomeda vittata*)	T/SEN 1987	No	Found in water 0.5–4.3 feet deep, but most abundant in depths of about 1.9 feet. Spinedace are most common in slow-to-moderate water currents that flow over fine gravel bottoms. They avoid deep, heavily shaded pools and shallow, open areas, preferring unshaded pools with rocks or undercut banks for cover. Capable of tolerating relatively harsh environments that undergo dramatic fluctuations in pH, dissolved gases, and water temperatures.	There is no suitable habitat in the project area. Additionally, there is no potential for significant or measurable downstream impacts generated by this project that would affect occupied or suitable habitat for this species.	No

Species	USFWS Status and Year*	Critical Habitat Present	Key Habitat Elements	Status within Action Area of Project	Species Analyzed in Detail?
Loach minnow (*Tiaroga cobitis*)	E/SEN 2012	No	Primarily a benthic species, inhabiting moderate to large streams at intermediate elevations. This species is typically associated with shallow, turbulent riffles with cobble and gravel substrates, feeding on a variety of aquatic insects. Spawning occurs in the same riffle habitat, where eggs are deposited on the underside of small, flattened rocks. Periodic flooding that cleans riffles of sediments is important to their survival. Major floods do not appear to displace loach minnows, but may aid the species by flushing away non-native fish with which the loach minnow appears incompatible.	There is no suitable habitat present in the project area. Additionally, there is no potential for significant or measurable downstream impacts generated by this project that would affect occupied or suitable habitat for this species.	No
Roundtail Chub *(Gila robusta)*	C/SEN 2009	N/A	Found in cool to warm water, mid-elevation streams and rivers with pools adjacent to swifter riffles and runs. In Arizona, this fish occurs at elevations between 1,210 and 7,220 feet in two tributaries of the Little Colorado River, several tributaries of the Bill Williams River basin, the Salt River and four of its tributaries, the Verde River and five of its tributaries, Aravaipa Creek, and Eagle Creek.	The project area does not contain suitable riparian habitat for this species. Additionally, there is no potential for significant or measurable downstream impacts generated by this project.	No

Species	USFWS Status and Year*	Critical Habitat Present	Key Habitat Elements	Status within Action Area of Project	Species Analyzed in Detail?
Mexican gray wolf (*Canis lupus baileyi*)	E/SEN 1967	No	As long as the habitat is adequate to support sufficient prey populations, such as elk and deer, and human-induced mortality is controlled, the wolf can survive in nearly any vegetation type. Historically occurred in montane woodlands in the southwestern United States and central and northern Mexico, and throughout southeastern Arizona in Upper Sonoran woodlands and grasslands. The Arizona reintroduction area consists of rugged topography, with steep canyons and high ridges bisected by the Mogollon Rim. Typically occur between 3,000 and 12,000 feet in petran montane forests, Great Basin forests characterized by pinyon-juniper stands, Madrean evergreen woodlands, and grasslands between 3,600 and 7,500 feet.	Historically, the Mexican gray wolf was known only from the southeastern corner of the Apache National Forest in Greenlee and Apache Counties, bordering the Gila National Forest in New Mexico. This species had not been seen in the wild in Arizona since 1970, until recent reintroductions occurred in Apache County. The project area is located within the nonessential experimental population 10(j) area and approximately 60 miles from the primary Recovery Zone and primary release sites for the Mexican gray wolf. Although wolves could likely migrate over that distance, since the project area is located close to human habitation and does not contain vegetation to support large prey populations, it is expected that this species does not occur there. The latest radio telemetry tracking information from the USFWS indicates that the closest reintroduced wolf pack to the project area is the Paradise Pack, which is currently located on the Fort Apache Indian Reservation, 20 or more miles to the south.	Yes. Approximately 36 acres of undisturbed lands around the materials source cinder pit may support Mexican gray wolf populations.
New Mexico meadow jumping mouse (*Zapus hudsonius luteus*)	C/SEN 2007	N/A	Endemic to New Mexico, Arizona, and a small area of southern Colorado, this species nests in dry soils but uses moist, streamside, dense riparian/wetland vegetation up to an elevation of about 8,000 feet, only using two riparian community types: persistent emergent herbaceous wetlands and riparian areas along perennial streams that are composed of willows and alders. In New Mexico, they have been found in the San Juan, Sangre de Cristo, Jemez, and Sacramento Mountains, the Rio Grande Valley, and the lower Rio Chama Valley. In Arizona, populations occupy the White Mountains in southern Apache County and in northern Greenlee County.	The project area does not contain suitable wetland, meadow, or riparian habitat for this species.	No

Species	USFWS Status and Year*	Critical Habitat Present	Key Habitat Elements	Status within Action Area of Project	Species Analyzed in Detail?
Mexican spotted owl (*Strix occidentalis lucida*)	T/SEN 1993	No	Typically occurs in mixed conifer and pine-oak, containing mature trees. These owls nest and roost primarily in closed-canopy forests or rocky canyons. Forests used for roosting and nesting often contain mature or old growth stands with complex structure.	No suitable nesting habitat is present within the action area. The proximity of human development, high recreation use, previous disturbance, and lack of primary constituent elements likely precludes the owl from using the project area. No habitat modifications or detectable indirect impacts will occur from the Proposed Action. No Mexican spotted owl critical habitat, restricted habitat, or Protected Activity Centers (PACs) are located nearby. The closest PAC to the project area is approximately 10 miles to the east.	No
Southwestern willow flycatcher (*Empidonax traillii extimus*)	E/SEN 1995	No	Typically found in riparian habitats along perennial drainages where dense growth of willows, tamarisk, and other shrubs and medium-sized trees are present with a scattered overstory of cottonwoods. The species nests in thickets of trees and shrubs approximately 12–24 feet tall, with a high percentage of canopy cover and a large volume of foliage.	This species has not been found in mid-elevation riparian habitats from 3,400 to 7,960 feet. The action area is at the mid-elevation level. The species is not known to occur in or near the action area and no suitable or occupied habitat occurs near the action area. Critical habitat is not present within the action area.	No
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	C/SEN 2001	N/A	Uncommon to fairly common breeder in riparian habitats below the Mogollon Rim in the Colorado and Gila River drainages. Requires a minimum of 25 acres of broadleaf forest at least 328 feet wide.	The project area does not contain riparian deciduous hardwood trees and this species has not been documented on the Lakeside RD.	No

*USFWS status key: T= Threatened; E= Endangered; C= Candidate

Table 3.4 Analysis of Sensitive Species

Species	Status*	Key Habitat Elements	Status within Action Area of Project	Species Analyzed in Detail?
Mammals				
Allen's lappet-browed bat (*Idionycteris phyllotis*)	SEN	This insectivorous bat ranges across extreme southern Nevada, southern Utah, most of Arizona, and in southwestern New Mexico at elevations above 3,000 feet. Roost sites include mine shafts, boulder piles, lava beds, and under the bark of large ponderosa pine snags. Vegetation communities where this bat is associated include ponderosa pine, pinyon-juniper, pine-oak woodlands, and riparian areas.	Although this species could forage within the project area, suitable roost sites, including snags and conifers, would not be impacted by this project. However, noise associated with this project could have temporary impacts if the species is present.	Yes. Approximately 36 acres of pinyon-juniper woodland vegetation communities around the materials source cinder pit may support Allen's lappet-browed bat populations.
Dwarf shrew (*Sorex nanus*)	SEN	This shrew is known from only four localities in Arizona in the White Mountains and on the San Francisco Peaks. Typical habitat includes talus areas and rocky slopes of higher mountains and in some cases in subalpine meadows near spruce-fir forests. It has been occasionally found in lower and more arid environments such as shortgrass prairie, shrub-steppe, and stubble fields. This shrew has also been captured in ponderosa pine stands, dry brushy hillsides, and pinyon juniper woodlands. These various habitat types suggest that this shrew is a true habitat generalist; however, most reports occur from rocky habitats in alpine tundra and subalpine coniferous forests.	The project area does contain pinyon-juniper woodlands where this species is sometimes found. Although there are no records of occurrence for this species within the vicinity of the project area, the ASNFs has not been surveyed for this species; thus, presence is unknown. Since suitable habitat does exist, this species could be present. However, any potential impacts to this species are expected to be minor as most of the project area is disturbed by previous activity.	Yes. Approximately 36 acres of pinyon-juniper woodland vegetation communities around the materials source cinder pit may support dwarf shrew populations.
Merriam's shrew (*Sorex merriami leucogenys*)	SEN	Merriam's shrews are known for their preference of dry habitats and have been documented in sagebrush steppe, grasslands, brushland, and woodlands at elevations ranging between 656 and 9,514 feet. Merriam's shrews inhabit cool, grassy habitats near coniferous forests.	The project area contains grassland habitats surrounded by coniferous forest. It is unknown whether this species may occur there. However, any potential impacts to this species are expected to be minor as most of the project area is disturbed by previous activity.	Yes. Approximately 36 acres of grassland habitats surrounded by coniferous forest around the materials source cinder pit may support Merriam's shrew populations.

Species	Status*	Key Habitat Elements	Status within Action Area of Project	Species Analyzed in Detail?
Pale Townsend's big-eared bat (*Corynorhinus townsendii pallescens*)	SEN	This bat is widespread in Arizona at elevations of 550–7,520 feet. Summer day roosts are found in caves and mines from desertscrub up to woodlands and coniferous forests. Night roosts may often be in abandoned buildings. In winter, they hibernate in cold caves, lava tubes, and mines mostly in uplands and mountains from the vicinity of the Grand Canyon to the southeastern part of the state.	The project area does not contain suitable roosting sites for this species and due to the existing disturbed condition of the project area, this species is unlikely to use the area for foraging.	No.
Silky (Springerville) pocket mouse (*Perognathus flavus goodpasteri*)	SEN	Typically occurs in the ecotone between pinyon-juniper or juniper woodlands and grasslands at elevations ranging from 5,240 to 7,020 feet. In Arizona, only known from the grasslands at the eastern end of the Mogollon Plateau near Springerville, Snowflake, south of Holbrook, and on the south side of the plateau along Nash Creek, south of Fort Apache.	This species is known from northwest Lakeside RD (northwest of the project area). Marginal grassland habitat adjacent to juniper woodlands is present in the project area. However, any potential impacts to this species are expected to be minor as most of the project area is disturbed by previous activity.	Yes. Approximately 36 acres of marginal grassland and juniper woodlands around the materials source cinder pit may support pocket mouse populations.
Spotted bat (*Euderma maculatum*)	SEN	Dry, rough desertscrub, less common in ponderosa pine forest. Found from low desert in southwestern Arizona to high desert and riparian habitats in northwestern Arizona and Utah and conifer forests in northern Arizona. Might prefer to roost singly in crevices and cracks in cliff faces and cliffs. Water sources are characteristic of localities in which it occurs. Specimen localities in Arizona range between 110 and 8,670 feet.	The project area does not contain suitable roosting sites for this species, and this species would be unlikely to use the project area for foraging since other habitat components, water sources and cliffs, are not present in the project area vicinity.	No.
Birds				
American peregrine falcon (*Falco peregrinus anatum*)	SEN Delisted	This raptor ranges nearly worldwide and is usually found wherever sufficient prey is available, often near spectacular cliffs.	Suitable nesting cliffs may occur south of the action area, but not within the action area. There are no known nesting peregrines on the Lakeside RD. No habitat modifications or detectable indirect impacts would occur from the Proposed Action.	No.

Species	Status*	Key Habitat Elements	Status within Action Area of Project	Species Analyzed in Detail?
Bald eagle (*Haliaeetus leucocephalus*)	SEN Delisted	Occurs in Arizona as either breeding populations or winter migrants. Arizona bald eagles occur at elevations between 4,600 and 7,390 feet. Nests occur in tall trees, cliff faces, ledges, and pinnacles near open water for foraging. Perches for shelter, roosting, foraging, and guarding are important habitat components.	The project area does not contain permanent water suitable for prey species or trees suitable for nesting; however, the project does provide potential wintering habitat. The AZHGIS results for this project indicate a wintering bald eagle record within 3 miles of the project area (Appendix B). Although no trees that could be used by this species would be impacted by the project, noise associated with the project could temporarily disturb the species if present in the area.	Yes. Approximately 36 acres of juniper woodlands around the materials source cinder pit may support bald eagle populations.
Gray vireo (*Vireo vicinior*)	SEN	In Arizona, normally found in open areas containing juniper and slopes. Sometimes use upland areas of Sonoran Desertscrub for wintering. Nests in the higher elevations of Arizona in oak, juniper, and hackberry species.	Although the project area does not contain slopes, junipers and open areas are present; thus, this species could use the project area. However, any potential impacts to this species are expected to be minor as most of the project area is disturbed by previous mining activity.	Yes. Approximately 36 acres of juniper woodlands around the materials source cinder pit may support bald eagle populations.
Northern goshawk (*Accipiter gentilis*)	SEN	Forest habitat generalist that uses a variety of forest types, forest ages, structural conditions, and successional stages. It primarily occupies ponderosa pine, mixed-species, and spruce-fir habitats in the southwest and prefers mature conifer stands with dense canopies for nesting.	Suitable habitat for this species is not present within the project area. Although the closest Post Fledging Area to the project area is approximately 3 miles to the south, noise impacts are unlikely to affect the species.	No.
Western burrowing owl (*Athene cunicularia hypugaea*)	SEN	This species is very widespread in North America. Found in open, well-drained grasslands, steppes, deserts, plains, and agricultural lands, often associated with burrowing mammals.	The project area does contain open grassy areas; thus, this species could use the project area. However, any potential impacts to this species are expected to be minor as most of the project area is disturbed by previous mining activity.	Yes. Approximately 36 acres of open grassy areas around the materials source cinder pit may support Western burrowing owl populations.

Species	Status*	Key Habitat Elements	Status within Action Area of Project	Species Analyzed in Detail?
Zone-tailed hawk (*Buteo albonotatus*)	SEN	Zone-tailed hawks are migratory. They nest near streams in either riparian trees or on cliffs from high-elevation forests down to low-elevation riparian areas. They will forage over many adjacent open habitats including grasslands, deserts, along cliff faces and rocky ridges, and over higher elevation coniferous forests. Main tree species associated with the zone-tailed hawk include Arizona sycamore and Freemont cottonwood. At higher elevations, these birds commonly nest in ponderosa pine forests and Madrean pine-oak woodlands and more rarely into mixed-conifer forests. Elevational ranges for this bird in Arizona fall between 1,780 to 7,800 feet.	Suitable riparian habitat for this species is not present within the project area. Additionally, this species has not been documented nesting on the Lakeside RD.	No.
Reptiles				
Northern Mexican gartersnake (*Thamnophis eques megalops*)	SEN	Permanent water with lush vegetation. Lakes, large streams and rivers, and rich springs and headwaters. It is semi-aquatic and seldom seen more than 50 feet from permanent water.	The project area does not contain suitable riparian habitat for this species. Additionally, there is no potential for significant or measurable downstream impacts generated by this project.	No.
Amphibians				
Arizona toad (*Bufo microscaphus microscaphus*)	SEN	Typically occurs in rocky streams and canyons within pine-oak woodlands in east to west-central Arizona.	The project area does not contain suitable riparian habitat for this species. Additionally, there is no potential for significant or measurable downstream impacts generated by this project.	No.
Northern leopard frog (*Lithobates pipiens*)	SEN	Typically occurs in areas of permanent water, usually containing rooted aquatic vegetation in northern and central Arizona.	The project area does not contain suitable riparian habitat for this species, which has been extirpated from the White Mountains area. Additionally, there is no potential for significant or measurable downstream impacts generated by this project.	No.

Species	Status*	Key Habitat Elements	Status within Action Area of Project	Species Analyzed in Detail?
Insects				
Arizona snaketail (*Ophiogomphus arizonicus)*	SEN	Species are found in fairly swift rocky mountain streams in pine woodland with silt for larval habitat.	The project area does not contain suitable riparian habitat for this species. Additionally, there is no potential for significant or measurable downstream impacts generated by this project.	No.
Ferris' copper (*Lycaena ferrisi*)	SEN	Open meadows and cienegas in the White Mountains containing the larval stage food plant for this species, *Rumex hymeospalus.*	The project area does not contain meadows or *Rumex hymeospalus*.	No.
Nitocris fritillary (or mountain silverspot) (*Speyeria nokomis nitocris*)	SEN	Riparian areas and moist woodland openings containing the larval food plant, *Viola nephropphylla*.	The project area does not contain suitable riparian habitat or moist woodland openings for this species.	No.
Nokomis fritillary (*Speyeria nokomis Nokomis*)	SEN	Found in streamside meadows and open seepage areas with an abundance of violets in generally desert landscapes.	The project area does not contain suitable riparian habitat or streamside meadows for this species.	No.
Plants				
Arizona sneezeweed *(Helenium arizonicum)*	SEN	Species is a biennial or perennial herb found only in central Arizona from 7,000 to 8,000 feet in elevation. It typically occurs in wet depressions above the Mogollon Rim.	The project area does not contain suitable wet depressions above 7,000 feet.	No.
Bebb's willow *(Salix bebbiana)*	SEN	Typically found in wet meadows and near seeps.	The project area does not contain wet meadows or seeps.	No.
Blumer's dock *(Rumex orthoneurus)*	SEN	Wetland habitats, particularly springs, above 6,500 feet in elevation.	The project area does not contain wetland habitats suitable for this species.	No.

* Sensitive species status key: SEN = Sensitive Species

Table 3.5 below provides a summary of the effects determinations for each of the federally listed and proposed species analyzed in detail for this project.

Table 3.5. Determination of Effects/Impacts for Endangered, Threatened, Proposed, and Sensitive Species

Species	Determination of Effect/Impact
Mexican gray wolf	Not likely to jeopardize
Allen's lappet-browed bat	May impact individuals but is not likely to result in a trend toward federal listing or loss of population viability
Dwarf shrew	May impact individuals but is not likely to result in a trend toward federal listing or loss of population viability
Merriam's shrew	May impact individuals but is not likely to result in a trend toward federal listing or loss of population viability
Silky (springerville) pocket mouse	May impact individuals but is not likely to result in a trend toward federal listing or loss of population viability
Bald eagle	May impact individuals but is not likely to result in a trend toward federal listing or loss of population viability
Grey vireo	May impact individuals but is not likely to result in a trend toward federal listing or loss of population viability
Western burrowing owl	May impact individuals but is not likely to result in a trend toward federal listing or loss of population viability

Source: SWCA (2013a)

Under Section 7 of the Endangered Species Act, federal agencies must consult with the USFWS when any action the agency carries out, funds, or authorizes (such as through a permit) *may affect* a listed endangered or threatened species. This process usually begins as informal consultation. The ASNFs, in the early stages of planning the proposed shooting range, approached the USFWS and requested informal consultation. Discussions between the two agencies included what types of listed species may occur in the Proposed Action area, and what effect the Proposed Action may have on those species.

Since the proposed shooting range may affect a listed species, the ASNFs prepared a biological assessment to assist in its determination of the project's effect on a species. The ASNFs, after conducting the biological assessment and discussions with the USFWS, determined that the Proposed Action is not likely to affect any listed species in the project area.

Section 7 consultation is not required for No Effect determinations and the Lakeside RD is not required to gain concurrence from the USFWS on the No Effect determination.

Management Indicator Species

Management indicator species (MIS) are addressed to implement National Forest Management Act regulations. MIS species are selected because their population changes are believed to indicate the effects of management activities (36 CFR 219.19[a][1]). The MIS approach is designed to function as a means to provide insight into effects of forest management on plant and animal communities. Species are selected to represent several categories, such as commonly hunted or fished species, non-game species, and threatened and endangered species. The *Assessment of Management Indicator Species, A-SNFs from 2005 to 2011* (AGFD 2012a) provides management recommendations for MIS species in the analysis area.

The Forest plan (Forest Service 1987a) identifies MIS to monitor health of the forests ecosystems. The Forest plan provides direction on managing quality habitat for MIS by management area. As specified in the ASNFs LRMP, the project area occurs within MA-2, Woodland. MIS species for the MA-2, Woodland include juniper titmouse (*Baeolophus griseus*), antelope (*Antilocarpa americana*), elk (*Cervus elaphus*), and mule deer (*Odocoileus hemionus*). These species' associated habitat is indicated as 'early succession.' Aquatic MIS are not included in this analysis since there are no wetlands, riparian areas, or water bodies.

Table 3.6 below shows the MIS with habitat in the project area for MA-2, Woodland and MA-4, Grasslands. Terrestrial MIS located in the MA-2, Woodland and MA-4, Grasslands were assessed since project activities would occur only in these management areas. Undisturbed portions of the 80-acre project area include approximately 10 acres of MA-2, Woodland and approximately 26 acres of MA-4, Grasslands. Note that some MIS species are indicators for multiple MAs.

Table 3.6. MIS with Forest-wide Habitat and Population Trends

MIS Species by Management Area	Habitat Component Indicated	Forest-wide Habitat Trend	Forest-wide Population Trend	Forest-wide acres	Acres in Project Area
MA-1, Forested Land (0 acres in project area)					
Hairy woodpecker	Snags (all types)	Upward	Stable	712,366	0
Red-naped sapsucker	Snags (aspen)	Stable	Stable	800,000	0
Northern goshawk	Late Succession (ponderosa pine)	Stable to declining	Declining	1,682,492	0
Merriam's turkey	Late Succession	Stable	Stable	936,663	0
Pygmy nuthatch	Late Succession (ponderosa pine)	Declining	Stable	569,890	0
Mexican spotted owl	Late Succession	Declining	Declining	649,069	0
Elk	Early Succession	Upward	Stable to declining	1,690,439	0
Mule deer	Early Succession	Upward	Stable to increasing	1,769,299	0
Abert's squirrel	Early Succession (ponderosa pine)	Stable to declining	Stable	746,902	0
Red squirrel	Late Succession (spruce/mixed conifer)	Declining	Stable	203,347	0
MA-2, Woodland (10 acres in project area)					
Elk	Early Succession	Upward	Stable to declining	178,000	10
Mule deer	Early Succession	Upward	Stable to increasing	178,000	10
Antelope	Early Succession	Upward	Stable	178,000	10
Plains titmouse	Snags	Upward	Stable	178,000	10
MA-3, Riparian (0 acres high elevation riparian in project area)					
Yellow breasted chat	Low Elevation Riparian	Upward	Stable	6,870	0
Lucy's warbler	Low Elevation Riparian	Upward	Upward	6,870	0

MIS Species by Management Area	Habitat Component Indicated	Forest-wide Habitat Trend	Forest-wide Population Trend	Forest-wide acres	Acres in Project Area
Lincoln's sparrow	High Elevation Riparian	Static	Stable	6,870	0

1

MIS Species by Management Area	Habitat Component Indicated	Forest-wide Habitat Trend	Forest-wide Population Trend	Forest-wide acres	Acres in Project Area
MA-4, Grassland (26 acres in project area)					
Elk	Early Succession	Upward	Stable to declining	243,126	26
Antelope	Early Succession	Upward	Stable	243,126	26
MA-11, Water (0 acres in project area)					
Cinnamon Teal	Wetlands	Upward	Stable	3,962	0

Source: SWCA (2013b)

Further MIS documentation is available in the project record.

Migratory Birds

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 of the effects of Forest Service actions on species of concern and important bird areas (IBAs) as listed and identified by Arizona Partners in Flight (Latta et al. 1999), and the effects to important overwintering areas.

Considered for these analyses were 1) birds identified as priority species in the Arizona Partners in Flight Bird Conservation Plan (Latta et al. 1999) and 2) birds in Bird Conservation Regions 34 and 16 of USFWS's 2008 *Birds of Conservation Concern* (USFWS 2008). The Arizona IBA Program was established in 2001 and is co-administered by Audubon Arizona and the Tucson Audubon Society. Though IBAs are present within the analysis area, no IBAs are present within the 80-acre site proposed for the shooting range. The nearest IBA (Upper Little Colorado River Watershed IBA) is approximately 35 miles east of the site proposed for the shooting range. Migratory bird species that may occur in the project area include gray flycatcher (*Empidonax wrightii*), pinyon jay (*Gymnorhinus cyanocephalus),* gray vireo (*Vireo vicinior*), black-throated gray warbler (*Setophaga nigrescens*), Brewer's sparrow (*Spizella breweri),* Swainson's hawk (*Buteo swainsoni*), ferruginous hawk (*Buteo regalis*), golden eagle (*Aquila chrysaetos*), chestnut collared longspur (*Calcarius ornatus*), and prairie falcon (*Falco mexicanus*).

Environmental Consequences

Factors for Alternative Comparison (Indicators): Wildlife

- Determine the presence or absence of wildlife (threatened and endangered species, MIS, and migratory birds) within and adjacent to the project area (quantitative).
- Evaluate the potential for shooting range activities (noise, as analyzed separately in the Noise section) to impact wildlife, including to endangered, threatened, proposed or sensitive species, MIS, and migratory birds (qualitative).

Alternative 1 – No Action Direct and Indirect Effects

Endangered, Threatened, Proposed, and Sensitive Species

The No Action alternative would not result in impacts to any federally listed or proposed species since the 80-acre project area proposed for the shooting range would not be developed. The presence of wildlife would be anticipated to continue at existing population levels in the analysis area.

Similarly, no shooting range activities that may impact wildlife (construction or gun noise) would occur.

Management Indicator Species

There would be no impact to forest-wide habitat and population trends under the No Action alternative. The undisturbed areas of the 80-acre project area would continue as an early succession habitat.

Migratory Birds

The No Action alternative would have no direct or indirect impacts to migratory birds since the 80-acre project area proposed for the shooting range would not be developed.

Cumulative Effects

Under the No Action alternative, since there are no direct or indirect effects to wildlife, there would be no cumulative effects to wildlife.

Alternative 2 – Proposed Action Direct and Indirect Effects

Endangered, Threatened, Proposed, and Sensitive Species

Based on the findings in the affected environment and the analysis included in Tables 3.2, 3.3, and 3.4, implementation of the proposed project would have no known effects on any federally listed or proposed species, since none are likely to occur within the area of impact resulting from the project. The anticipated noise (see the Noise section below) that would be generated if the Proposed Action were implemented would not impact species that do not occur in the analysis area. However, there is potential for noise disturbance for species that may occur within or adjacent to the project area. The Proposed Action is anticipated to have minor, indirect impacts to eight of the 31 species listed in Tables 3.3 and 3.4. The existing cinder pit is unlikely inhabited, used, or foraged by the other 23 species; however, eight species (Mexican gray wolf, Allen's lappet-browed bat, dwarf shrew, Merriam's shrew, silky pocket mouse, bald eagle, gray vireo, and Western burrowing owl) may be indirectly impacted from the noise disturbances resultant from construction (heavy equipment) and operation (gun fire).

Shooting range activities would have minor impacts to wildlife, primarily because wildlife are not currently inhabiting, using, or foraging within the project area footprint, indirect noise impacts notwithstanding. All shooting range activities (noise notwithstanding) would be limited to within the project area. Noise would increase within the project area footprint and along the boundary. However, in areas such as the intersection of the proposed shooting range access road and U.S. Route 60, the anticipated noise levels would not increase beyond the current ambient noise conditions.

Any direct and indirect effects generated by the proposed project would be considered discountable to the special-status species analyzed in Tables 3.2 and 3.3.

Management Indicator Species

The potential effects of the Proposed Action were reviewed for consistency with the *Assessment of Management Indicator Species Apache-Sitgreaves National Forests from 2005/2006* – 2011 (AGFD 2012a). Aquatic MIS species were not included since there are no riparian areas within the analysis area.

Terrestrial MIS located in MA-2, Woodland and MA-4, Grassland were assessed since project activities would occur only in these management areas. MIS within MA-3, Riparian, and MA-11, Water do not contain habitat within the project area (see Table 3.6) and are therefore excluded from further analysis since no activities are proposed in those habitats and the forest-wide habitat and population trends for those species would not be impacted under Alternative 2. Further, design criteria and best management practices are proposed under Alternative 2, which would minimize any indirect effects to these areas.

Most of the project area is previously disturbed by past material sourcing activity. As proposed, a small area (<10 acres) of woodland would be converted to a shooting bay and another approximately 26 acres of grassland would be converted into other facilities related to the shooting range. As such, approximately 36 acres of early succession habitat would be permanently lost.

The disturbance of 36 acres (10 acres of MA-2, Woodland and 26 acres of MA-4, Grasslands) would represent a negligible change to the existing conditions. The change in existing conditions and effect of this disturbance to terrestrial MIS would be negligible since approximately 178,000 acres of MA-2, Woodland comprises the ASNFs, and the disturbance of 10 acres out of 178,000 acres would equate to a less than 0.01% total reduction. Similarly, the effect to MA-4, Grasslands would be negligible since approximately 243,126 acres of MA-4, Grasslands comprises the ASNFs, and the disturbance of 26 acres out of 243,126 acres would also equate to a less than 0.01% total reduction. The primary impact to terrestrial MIS from this disturbance would be resultant of the noise generated from heavy equipment during construction, and from the noise generated from gunfire during operation of the shooting range. However, according to the *Assessment of Management Indicator Species, A-SNFs from 2005 to 2011* (AGFD 2012a), the Forest habitat trend for Early Succession habitats is 'upward.' Further, the Forest population trend for the antelope, elk, and mule deer is 'stable.' Considering the severity of the previous disturbance at the site, and the Forest habitat and population trends of 'upward' and 'stable,' it is expected that this project would have minimal to no impact on MIS.

For all MIS, any change in the quantity or quality of habitat would not be large enough to alter forest-wide habitat or population trends. Implementation of the Proposed Action would be consistent with Forest plan goals and objectives for MIS and their associated habitat types.

Elk, Mule Deer, and Antelope

The Proposed Action would result in the permanent loss of 26 acres of MA-4, Grasslands and 10 acres of MA-2, Woodland. As the 36 acres of Early Succession habitats are adjacent to existing disturbance (the existing ADOT cinder pit) and are located less than 1 mile from U.S. Route 60, the loss of these 36 acres are not anticipated to result in changes to the Forest-wide elk, mule deer, and antelope habitat trends. Further, due to less than 0.01% of the available Forest-wide habitat occurring within the project area, there would be no impact to elk, mule deer, or antelope forest-wide habitat and population trends under this alternative.

Plains Titmouse

The Proposed Action would result in the permanent loss of 10 acres of MA-2, Woodland. As the 10-acres of Early Succession habitat is adjacent to existing disturbance (the existing ADOT cinder pit) and is located less than 1 mile from U.S. Route 60, the loss of these 10 acres is not anticipated to result in changes to the Forest-wide Plains titmouse habitat trends. Further, due to less than 0.01% of the available Forest-wide habitat occurring within the project area, there would be no impact to Plains titmouse Forest-wide habitat and population trends under this alternative.

Migratory Birds

Table 3.7 displays the species that may occur in or near the project area and a summary of anticipated effects. Migratory bird species that were considered in threatened and endangered species and MIS analysis are not repeated here. Species that do not have habitat within the project area are not listed in the table below. Since the project area is located in a transition zone between Plains and Great Basin Grassland and Pinyon-Juniper Woodland, this list includes those species that fall within Pinyon-Juniper Woodlands and High Elevation Grassland vegetation types.

Table 3.7. Migratory Bird Effects Analysis

Vegetation Type	Species	Habitat	Habitat Impacts	Disturbance Effects
Pinyon-Juniper	Gray flycatcher	Large stands with an open understory and some ground cover to support insect populations for foraging.	Project activities would remove approximately 10 acres of vegetation; therefore, habitat modifications would occur; however, the project area is mostly disturbed from previous mining activities; thus, impacts would be insignificant.	Short-term disturbance possible during project activities. Long-term effects through habitat alteration and noise. No adverse effects expected.
	Pinyon jay	Open pinyon-juniper woodlands with an adequate supply of seeds.	Project activities would remove approximately 10 acres of vegetation; therefore, habitat modifications would occur; however, the project area is mostly disturbed from previous mining activities; thus, impacts would be insignificant.	Short-term disturbance possible during project activities. Long-term effects through habitat alteration and noise. No adverse effects expected.
	Gray vireo	Open, mature juniper woodlands where there is an understory of broadleaf shrubs.	Project activities would remove approximately 10 acres of vegetation; therefore, habitat modifications would occur; however, the project area is mostly disturbed from previous mining activities; thus, impacts would be insignificant.	Short-term disturbance possible during project activities. Long-term effects through habitat alteration and noise. No adverse effects expected.
	Black-throated gray warbler	Tall stands with a higher density of mature pinyon pine.	Project activities would remove approximately 10 acres of vegetation; therefore, habitat modifications would occur; however, the project area is mostly disturbed from previous mining activities; thus, impacts would be insignificant.	Short-term disturbance possible during project activities. Long-term effects through habitat alteration and noise. No adverse effects expected.
	Brewer's sparrow	Large openings of pinyon-juniper woodlands.	Project activities would remove approximately 10 acres of vegetation; therefore, habitat modifications would occur; however, the project area is mostly disturbed from previous mining activities; thus, impacts would be insignificant.	Short-term disturbance possible during project activities. Long-term effects through habitat alteration and noise. No adverse effects expected.

Vegetation Type	Species	Habitat	Habitat Impacts	Disturbance Effects
High Elevation Grasslands	Swainson's hawk	Open stands of grass-dominated vegetation, sparse shrublands, and small, open woodlands.	Project activities would remove approximately 10 acres of vegetation; therefore, habitat modifications would occur; however, the project area is mostly disturbed from previous mining activities; thus, impacts would be insignificant.	Short-term disturbance possible during project activities. Long-term effects through habitat alteration and noise. No adverse effects expected.
	Ferruginous hawk	Flat, rolling terrain in grassland communities. Cliffs, rocky outcrops, and small groves of trees in grassland are sought for nesting.	Project activities would remove approximately 10 acres of vegetation; therefore, habitat modifications would occur; however, the project area is mostly disturbed from previous mining activities; thus, impacts would be insignificant.	Short-term disturbance possible during project activities. Long-term effects through habitat alteration and noise. No adverse effects expected.
	Golden eagle	Open and semi-open country primarily in mountainous canyon land.	Project activities would remove approximately 10 acres of vegetation; therefore, habitat modifications would occur; however, the project area is mostly disturbed from previous mining activities; thus, impacts would be insignificant.	Short-term disturbance possible during project activities. Long-term effects through habitat alteration and noise. No adverse effects expected.
	Chestnut-collared longspur	Prairie specialists that prefer grasslands with primary grasses and forbs and vegetation less than 1.6 feet in height.	Project activities would remove approximately 10 acres of vegetation; therefore, habitat modifications would occur; however, the project area is mostly disturbed from previous mining activities; thus, impacts would be insignificant.	Short-term disturbance possible during project activities. Long-term effects through habitat alteration and noise. No adverse effects expected.
	Prairie falcon	Open situations. Nests in well-sheltered ledge on rocky cliff or steep earth embankment.	Project activities would remove approximately 10 acres of vegetation; therefore, habitat modifications would occur; however, the project area is mostly disturbed from previous mining activities; thus, impacts would be insignificant.	Short-term disturbance possible during project activities. Long-term effects through habitat alteration and noise. No adverse effects expected.

1 Source: SWCA (2013c)

2 There are no identified or potential IBAs that would be affected by the project. The nearest IBA is the
3 Upper Little Colorado River Watershed IBA, more than 25 miles to the east-southeast of the proposed
4 Second Knoll Shooting Range project area.

5 Negligible effects would occur to range-wide populations of migratory bird species dependent on
6 pinyon-juniper or high elevation grassland habitats, since there would be a change in the existing
7 habitat suitability for migratory birds. This change would be resultant from the disturbance of
8 approximately 36 acres of juniper woodlands and grasslands that would occur within the 80-acre
9 project area. The 44 acres comprising the remainder of the 80-acre project area is previously
10 disturbed. The effect would be negligible since approximately 178,000 acres of MA-2, Woodland
11 comprises the ASNFs, and the disturbance of 36 acres out of 178,000 would equate to a less than
12 0.02% reduction. No intentional take (as defined by the Endangered Species Act) would result from

actions proposed in this project. Unintentional take of individual migratory birds may occur indirectly (e.g., vehicle–bird strikes, illegal shooting), but would not result in changes to the range-wide populations of these species.

No adverse effects would occur to range-wide populations of migratory bird species dependent on pinyon-juniper and high elevation grassland habitats. There would be no change in the habitat suitability for migratory birds if the Proposed Action were implemented.

Cumulative Effects

There are no known past, current, or proposed actions on state, tribal, or private lands that would generate effects that, in combination with the Proposed Action, would constitute an accumulation of effects on endangered, threatened, proposed, and sensitive species. In fact, the impacts from the past materials source cinder pit disturbance of the area have had greater impacts to wildlife than the impacts expected to result from implementation of this proposed project.

Recreation

Affected Environment

The analysis area for recreation is the Lakeside RD, which includes the 80-acre project area proposed for the shooting range. Numerous designated recreation sites are present in the analysis area. Table 3.8 below provides the inventory of designated recreation sites within the analysis area. The nearest designated recreation site (Panorama Trailhead) is located approximately 4 miles south of the proposed shooting range site. All other Lakeside RD designated recreation sites are located 5 miles or more from the 80-acre project area.

The primary recreation experiences in the analysis area are big-game hunting, hiking, camping (both developed and dispersed), fishing, wildlife viewing, and horseback riding. The demand for recreation sites exceeds the availability of improvements, particularly around lakes and along streams (Forest Service 1987a). The access road (Forest Road 206) that would be used to access the proposed shooting range from U.S. Route 60 does not provide access to any designated recreation sites, and no designated recreation sites are present within the project area.

Table 3.8. Designated Recreation Sites of the Lakeside RD (Analysis Area)

Name	Distance and Direction from Project Area
Land of Pioneers Trailhead	13 miles east
Brown Creek Campground	10 miles southeast
Lake Mountain Trailhead	12 miles southeast
Los Burros #2 Trailhead	12 miles southeast
Los Burros Campground	13 miles southeast
Los Burros #1 Trailhead	13 miles southeast
Panorama Trailhead	4 miles south
Country Club Trailhead	8 miles south
Blue Ridge #1 Trailhead	8 miles south
Blue Ridge #2 Trailhead	9 miles south

Name	Distance and Direction from Project Area
Springs Trailhead	9 miles south
Scott Reservoir Boat Launch	6 miles southwest
Scott Reservoir Campground	6 miles southwest
Timber Mesa Trailhead	5 miles southwest
Ice Cave Trailhead	6 miles southwest
Billy Creek Trailhead	10 miles south
Woodland Lake Park Picnic Site	11 miles south
Woodland Lake Park Boating	11 miles south
Woodland Lake Park Trailhead	11 miles south
Big Springs Interpretive Site	10 miles southwest
Big Springs Trailhead	10 miles southwest
Lakeside Campground	9 miles southwest
Rainbow Lake Boat Ramp	9 miles south
Camp Tatiyee	7 miles southwest
Mogollon Rim Trailhead	7 miles southwest
Camp Grace	7 miles southwest
Show Low Lake Campground	6 miles southwest
Show Low Lake Boat Ramp	6 miles southwest
Buena Vista Trailhead	9 miles west
Los Caballos Trailhead	9 miles west
Ghost of the Coyote Trailhead	13 miles west
Juniper Ridge #1 Trailhead	17 miles west
Lewis Canyon Group Campground	18 miles west
Juniper Ridge #1 Trailhead	18 miles west
Pintail Lake Observation Site	6 miles northwest

Source: Forest Service (2013)

The Lakeside RD manages for recreation activity according to the Recreation Opportunity Spectrum (ROS). ROS is used to describe the recreation setting character conditions required to produce recreation opportunities and facilitate the attainment of both recreation experiences and beneficial outcomes. The ROS offers a framework for understanding the relationships and interactions the public may experience within a particular area of the forest. ROS and the subsequent recreational opportunities are characterized in terms of physical characteristics (degrees of remoteness, naturalness, and human-made facilities); social characteristics (amount of size of visitation, likelihood of contact with other users, and evidence of use); and administrative characteristics (level and type of management). See Appendix D for the ROS framework. The 80-acre project area lies within ‘roaded natural’ and ‘semi-primitive non-motorized’ ROS settings. However, as previously stated, the 80-acre project area proposed for the shooting range has been used for the same purpose (materials source cinder pit) for over 75 years.

Some target shooters practice "Leave No Trace" ethics when shooting. Other target shooters may leave behind targets, household litter/trash, and brass bullet and shell casings. These "negative" aspects of target shooting degrade the recreational setting.

The project area is located in game management unit (GMU) 3B. The primary hunting pursuits in GMU 3B include big-game hunting (antelope, elk, mule deer, black bear, and mountain lion) and small-game hunting (Merriam's turkey, tree squirrel, and waterfowl) (AGFD 2012b).

Environmental Consequences

Factors for Alternative Comparison (Indicators): Recreation

- Evaluate the potential for the proposed project to change existing recreation experiences, settings, and opportunities according to the recreation goals and objectives of the ASNFs Forest Plan (1987a) (qualitative).

Alternative 1 – No Action Direct and Indirect Effects

Under the No-Action Alternative, recreation experiences, settings, and opportunities would remain in their current condition. There would be no direct or indirect effects on recreation.

Cumulative Effects

Under the No Action alternative, since there are no direct or indirect effects to recreation, there would be no cumulative effects to recreation.

Alternative 2 – Proposed Action Direct and Indirect Effects

Under the Proposed Action, existing recreation settings, experiences, and opportunities would continue on the Lakeside RD. None of the designated recreation sites listed in Table 3.8 would be impacted. The existing recreation settings, experiences, and opportunities within the 80-acre project area proposed for the shooting range would be improved through the implementation of a public shooting range. The recreational target shooting currently taking place in Lakeside RD is anticipated to experience some shift from dispersed, unregulated, and unsupervised to a structured, supervised, and contained public shooting range. This anticipated shift would have beneficial, long-term impacts to the recreation setting of the Lakeside RD since many of the "negative" aspects of target shooting in the Lakeside RD would be expected to cease.

The Proposed Action would not be in conflict with the existing ROS settings of the 80-acre area proposed for the shooting range.

The Proposed Action would not impact the hunting opportunities available in GMU 3B since the project area is confined to the existing access road and materials source cinder pit. Hunting laws such as ARS 17-309 (a)(4) prohibit discharging firearms from 0.25 mile of any occupied structure unless permission is granted from the landowner. In addition, the existing law found at ARS 17-301 (b) prohibits discharging firearms upon, from, or across a road. Therefore, once operational, hunting would not be permitted within or within 0.25 mile of the 80-acre project area proposed for the shooting range.

If the Proposed Action were implemented, the recreation management goals and objectives of the ASNFs Forest Plan would continue to be met, and would be consistent with the recreation management strategies and objectives identified in working drafts for the ASNFs' Revised LRMP.

Cumulative Effects

The additive effect of the cumulative projects listed in the Chapter 3 introduction, when analyzed with the Proposed Action, would be minor. When considering the additive impact of other present and future actions, cumulative effects to recreation would result in beneficial, long-term improvements to the recreation setting, experiences, and opportunities of the Lakeside RD.

The Revised LRMP and Public Motorized TMP would have cumulative effects to recreation since both the LRMP and TMP are anticipated to result in new designations, some of which may limit recreational experiences and opportunities (e.g., road status changes or allowable uses changes). However, the LRMP and TMP would be implemented in ways that would likely continue to enable and maintain existing recreation uses that are found to be non-destructive or not resource-damaging. Therefore, though the cumulative impacts to recreation would be long-term, it is anticipated that the LRMP and TMP would also result in overall beneficial impacts to the Lakeside RD recreation setting, experiences, and opportunities.

Water Resources

Affected Environment

The analysis area for water resources is a 0.5-mile buffer around the 80-acre project area proposed for the shooting range. The analysis area lies within the Little Colorado River Basin (watershed). In general, the existing materials source cinder pit notwithstanding, topography in the analysis area slopes gently toward the north, although it is preceded by steeper relief to the south at Second Knoll, a small hill covered with pinion-juniper scrub vegetation. A few stock ponds and small ephemeral drainages appear on the U.S. Geological Survey quadrangle and aerial photography in the general vicinity of the project area (within 0.5 mile), but there is distinctly no hydrologic connection to these features.

No drainages, wetlands, or other features considered as waters of the U.S. are identified within the project area. Linear erosional features, generally not considered waters of the U.S., follow the slope of the open materials source cinder pit but do not combine or produce larger drainage features. There are no existing surface water features in the pit, and no wetland vegetation or stands of deciduous, broad-leaf riparian trees are present. No swale features or sheet flow are identified from available data or during the field visit. The access road (Forest Road 206) contains no significant drainage features.

Ground water in the analysis area is located approximately 400 to 610 feet deep (Arizona Department of Water Resources 2012).

Environmental Consequences

Factors for Alternative Comparison (Indicators): Water Resources

- Evaluate the potential for the proposed project to impact surface water quality (as analyzed separately in the Hazardous Materials section) (qualitative).

Alternative 1 – No Action Direct and Indirect Effects

Under the No Action alternative, water resources would remain in their current condition. There would be no direct or indirect effects on water resources.

Cumulative Effects

Under the No Action alternative, since there are no direct or indirect effects to water resources, there would be no cumulative effects to water resources.

Alternative 2 – Proposed Action Direct and Indirect Effects

The Proposed Action would not change the existing surface water conditions of the 80-acre project area. All constructed features included in the proposed shooting range (as detailed in Chapter 2) would not change or alter the surface water conditions of the 80-acre site since there would not be drainages, wetlands, or other features considered as waters of the U.S. within the analysis area. Existing surface disturbance of the materials source cinder pit and access road reflect the water resources changes brought on by long-term human occupancy and use of the project area.

Surface water runoff and sheet flow from rainwater accumulation within the proposed shooting range's shooting lanes would not be directed to flow off the 80-acre site. Implementation of the Proposed Action could potentially contaminate the ground, surface water, and groundwater via the deposition of lead resultant from shooting (see Hazardous Materials section). The natural drainage ways and sheet flow within the project area would be subject to infrequent periodic flooding from major precipitation events.

Implementation of the ESP by AGFD, in combination with the application of EPA's *Best Management Practices for Lead at Outdoor Shooting Ranges* (2005), would mitigate the presence and accumulation of lead in the ground, surface water, and groundwater of the analysis area, as well as identify the likelihood of lead migration into the groundwater. These monitoring and implementation activities would be conducted on an annual basis, as required by Forest Service Handbook 2709.14, Chapter 70.

Cumulative Effects

The additive effect of the cumulative projects listed in the Chapter 3 introduction, when analyzed with the Proposed Action, would result in minor cumulative effects since none of the other projects listed are anticipated to result in water resource impacts to the analysis area.

Air Quality

Affected Environment

The analysis area for air quality is the 80-acre project area proposed for the shooting range, including the 0.75-mile-long dirt access road (Forest Road 206) from U.S. Route 60 to the materials source cinder pit. According to the Arizona Department of Environmental Quality, the analysis area is currently in a full attainment area for all air quality criteria pollutants including particulate matter (fugitive dust) and ozone, as identified by the EPA. Existing sources of air pollution include tailpipe emissions from traffic on U.S. Route 60 and fugitive dust from traffic traveling to and from the ADOT materials source cinder pit on Forest Road 206.

Environmental Consequences

Factors for Alternative Comparison (Indicators): Air Quality

- Evaluate the potential for the proposed project to result in changes to existing air quality (fugitive dust) of the ASNFs Lakeside RD (qualitative).

Alternative 1 – No Action Direct and Indirect Effects

Under the No Action alternative, all existing activities would continue to occur at the materials-source pit and access road. The analysis area is currently in a full attainment area for criteria pollutants and would be expected to maintain this status; therefore there would be no impacts to air quality under the No Action alternative.

Cumulative Effects

Under the No Action alternative, since there are no direct or indirect effects to air quality, there would be no cumulative effects to air quality.

Alternative 2 – Proposed Action Direct and Indirect Effects

Under the Proposed Action, activities that would contribute to air pollution include traffic on the dirt access road, vehicle emissions, and ground-disturbing activities during construction of the proposed shooting range. Traffic on the dirt road and vehicle emissions are not anticipated to change from the existing traffic emission levels. Ground-disturbing activities during construction would have direct, site-specific impacts to air quality by increasing levels of particulate matter (fugitive dust) in the short term. Standard mitigation measures for construction activities such as wetting disturbed soils and covering trucks hauling materials would contribute to these impacts being only minor and short-term.

Cumulative Effects

The Proposed Action would contribute to air quality cumulative effects since there would be an anticipated increase in the frequency of vehicular use on the existing access road (Forest Road 206), which would increase the likelihood of fugitive dust, as well as increase the emissions from vehicles in the analysis area. However, these changes to the existing air quality conditions of the 80-acre project area, when considered with the Revised LRMP and Public Motorized TMP, would be minor (fugitive dust) and negligible (emissions) and are not anticipated to result in changes to the overall existing air quality within the 80-acre project area proposed for the shooting range.

Fire Risk/Management

Affected Environment

The analysis area for fire/risk management is the Lakeside RD, which includes the proposed shooting range and the 0.75-mile-long dirt access road from U.S. Route 60 to the proposed shooting range. Fire risk/management for the analysis area is the responsibility of the ASNFs. Currently, the proposed shooting range and access road are used by ADOT under a special use permit to access, maintain, and operate a materials storage yard in the inactive materials source cinder pit. Because the materials source cinder pit has been excavated, no vegetation or natural fuels exist on-site. ADOT haul trucks and heavy equipment that access or operate at the materials storage area are equipped with spark arrestors to prevent accidental ignition to adjacent lands. According to the ASNFs fire database, no fires have been recorded to have occurred at the proposed shooting range or the access road. The fire database indicates that the closest fire to the proposed shooting range that was greater than 10 acres was outside the analysis area. The 278-acre fire was located immediately north of U.S. Route 60 and the access road intersection, occurred in 1974, and was caused by a lightning strike. Target shooting and the actual firing of guns are a known ignition source of wildland fires, either through ordnance-caused sparks or from the gunpowder ignited during the shot.

Environmental Consequences

Factors for Alternative Comparison (Indicators): Fire Risk/Management

- Evaluate the change to risk of fire and fuels at the project site (relative fire risk) (qualitative).

Alternative 1 – No Action Direct and Indirect Effects

The No Action alternative would not have direct effects on fire risk/management. The ASNFs would continue to be responsible for fire risk/management of the analysis area and surrounding forest lands. ADOT activities would associated with the storage yard would continue to occur.

Cumulative Effects

There would be no cumulative effects to fire risk/management. Existing fire risk/management in the analysis area would continue.

Alternative 2 – Proposed Action Direct and Indirect Effects

Because the proposed shooting range would occur within an already disturbed, inactive materials source cinder pit, activities that would occur on the shooting range would change the risk of ignition or the fuel load at the immediate project site, since the firing of nearly any gun can ignite fuel and start a fire. However, as required by Forest Service Handbook 2709.14, Chapter 70, the proposed shooting range would operate with a safety plan. Included in the safety plan would be notification procedures, shooting range evacuation procedures, natural disasters or acts of terrorism without warning procedures, fire prevention procedures, post-incident reporting procedures, and a list of all local emergency and fire departments. Employees of the proposed shooting range would be required to understand and act upon the procedures that are intended to minimize the risk of fire. All proposed shooting range facilities would have fire prevention tools such as fire extinguishers and water on site. Therefore the proposed shooting range would not have a direct effect to fire risk/management in the analysis area.

Although difficult to quantify, the proposed shooting range could have an indirect effect on fire risk/management on Lakeside RD lands outside the 80-acre project area proposed for the shooting range. By providing the public with an official shooting range, people would be less likely to frequent unsanctioned “wildcat” shooting areas on the ASNFs. Decreased visitation to these shooting areas that are not equipped with fire prevention tools would have a long-term, beneficial impact to fire risk/management on the Lakeside RD.

Cumulative Effects

The area of analysis for fire risk/management cumulative effects is the Lakeside RD. In terms of cumulative impacts, any increase in outdoor activity, in addition to the creation of permanent surface developments, would subsequently increase the risk for human-caused fires within the area and create the potential for cumulative impacts to fuels/fire. However, as recreational activity increases with population in the analysis area, the risk of human-caused forest fires would increase, as well; however, this would not depart from current conditions.

The Wallow Fire burned over 490,000 acres of the ASNFs, but did not burn within the Lakeside RD.

Cultural/Heritage Resources

Affected Environment

The analysis area for cultural/heritage resources is a 1-mile buffer around the project area. The project area includes an access road and existing materials source cinder pit that is currently inactive, and is not being actively sourced by ADOT.

Per the USDA Region 3 Forest Service Cultural Resources Handbook, cultural resources are considered sites if they minimally contain: "a) one or more features; b) one formal tool if associated with other cultural resource materials or more than one formal tool; c) an occurrence of cultural material (such as pottery sherds, chipped stone, or historic items) that contains one of the following: 1) three of more types of artifacts or materials; 2) two types of artifacts or materials in a density of at least ten items per 100 square meters; 3) a single type of artifact or material in a density of at least 25 items per 100 square meters" (Forest Service 1987b:10.5-3). Finds that do not meet these criteria but that are more than 50 years old may be designated isolated occurrences (IOs).

The analysis area has been the subject of numerous cultural resources surveys for the past 30 years (ADOT 1983, 1984, 1996). SWCA surveyed approximately 39 acres of the 80-acre project area, including 2.7 acres of road and 36.3 acres of undisturbed lands around the materials source cinder pit. The bounds of the survey were requested by the ASNFs archaeologist to provide coverage of areas that have not been recently surveyed. The survey was conducted in support of this EA and special use permit, and to comply with Section 106 of the National Historic Preservation Act. Approximately 52% of the project area has been previously affected by the construction of the existing materials source cinder pit (SWCA 2012d). The archaeological survey of the project area and search of the existing ASNFs database resulted in the discovery of one previously recorded Historic period site, three newly recorded Historic period sites, and three IOs. One IO represents a single-episode can dump and two are prehistoric (see Isolated Occurrences, below). None of the cultural resources identified during the survey are recommended eligible for inclusion in the NRHP.

An archaeological survey of the project area resulted in the rediscovery of a previously recorded site, discovery of three newly identified sites, and three isolated occurrences of cultural resources. Newly recorded sites as well as the previously recorded site are recommended ineligible for listing on the NRHP. The sites all represent late historical trash deposits and do not appear to hold information significant to our understanding of the local history.

All of the newly recorded sites are late Historic period Euro-American artifact scatters.
The previously recorded site was originally recorded as a prehistoric and historical artifact scatter; however, only historical artifacts were noted during the most recent survey (SWCA 2013d). For all four sites, the source of the refuse cannot be associated with any particular persons or events (NRHP Criterion A or B). There is no artifactual or documentary evidence to suggest that the sites are associated with the construction or use of any historic roadway or other transportation feature, unlike artifacts located along a historic wagon road for example, which can provide information about those who used the wagon road. The presence of nearby roads may have simply been a determining factor in the final location of the dump sites. Therefore, the sites are unlikely to provide information significant to our understanding of history (Criterion D). It was recommended and approved by the ASNFs that no further cultural/heritage surveys would be conducted at any of the sites.

Future wildfires (particularly catastrophic wildfires that severely burn thousands of acres) may have an adverse additive cumulative effect to both known and unknown cultural/heritage resources of the Lakeside RD.

Cultural History

Historic Native American and Euro-American Period (A.D. 1540–Present)

The lands now comprising the ASNFs were occupied by various Apache tribes during the Historic period. Although archaeologists disagree on exactly when Athapaskan-speaking people arrived and by what route (Bailey and Bailey 1986; Perry 1991:145–152; Towner 1999:4–9; Wilcox 1981), few place the Apache in Arizona before the Historic period (Gunnerson 1956; Schroeder 1952). However, the Apache themselves believe that they have always been in what is now Arizona.

By the end of the seventeenth century, Apachean people inhabiting the Southwest made their presence known through raiding expeditions into Sonora and as far south as Mexico City (Goodwin 1942:63–67; Spicer 1962:32–36). The Spanish colonial government attempted to implement a policy of extermination to curtail the raiding (Worcester 1979:59–61). Because this policy had no effect on Apache raiding patterns, Viceroy Bernardo de Gálvez implemented a policy of pacification through dependency with the Apache and other raiding tribes in 1786: in return for rations and liquor, the Apache agreed not to raid (Spicer 1962:37–39). In 1848, the Treaty of Guadalupe Hidalgo brought the area north of the Gila River under the jurisdiction of the United States (Weber 1982:47–51).

With the ratification of the Gadsden Purchase in 1854, all of present-day Arizona came under the control of the United States and the area was opened to Euro-American settlers and miners. The new Territory of Arizona Legislature adopted a policy of extermination in response to Apache hostilities; however, the territorial government did not have the manpower to implement it (Spicer 1962:346–350). President Ulysses S. Grant established a Peace Policy in 1871 that focused on the removal of all "Apaches" within Arizona and New Mexico to reservations, in order to establish peaceful relations and acculturate the tribes (Spicer 1962:39–40). Following intense hostilities between Apache (and Yavapai) and Euro-American settlers in the 1860s, Lieutenant Colonel George Crook was appointed as commander of the U.S. Army's Department of Arizona (Thrapp 1967:95–102). Crook set out to subdue all hostile Apache by placing them on reservations. However, Crook soon realized that supply and communication problems were inhibiting his goal, which led him to find a route along the Mogollon Rim between Camp Verde and Camp Apache (later Fort Apache) (Jacobs 1980). This transportation and supply route became known as Crook's Road and was used into the early 1900s. In the fall of 1871, reservations were established at Fort Apache for the Cibecue and White Mountain Apache living in the White Mountain area—Camp Grant for the San Carlos Apache and those White Mountain Apache living south of the White Mountains, and Camp Verde for the Yavapai and Tonto Apache (Corbusier 1969:60–61; Schroeder 1959). Pacification of hostile Apache bands by the early 1870s left the region relatively secure for Euro-American settlement. In 1878, Mormons established logging camps at Pinedale and Taylor. Shortly thereafter, farming communities were established at Clay Springs and Pinedale.

The Atlantic and Pacific Railroad reached Holbrook in 1880, and resulted in an economic boom for the region (Lightfoot 1978). After the arrival of the railroad, sheep and cattle grazing became widespread throughout the Mogollon Plateau. Lightfoot (1978) notes that populations near the settlements of Pinedale, Heber, and Taylor continued to grow until 1900, along with increased tensions between the cowboy and Mormon factions.

After Fort Apache's closure in the 1920s, there was a brief economic recession until commercial logging began in the Pinedale area. Logging camps and railroads were established around Pinedale and as far west as Cottonwood Wash (Lightfoot 1978). Commercial logging thrived until the Great Depression, and by the time the Depression was over, logging trucks had replaced railroads as the primary means of transporting timber. Most logging railroads in the ASNFs were not used after 1939, and were dismantled in 1944 (Lightfoot 1978).

Environmental Consequences

Factors for Alternative Comparison (Indicators): Cultural/Heritage Resources

- If present, determine if NRHP-eligible heritage resources would be impacted (directly or indirectly; quantitative).

Alternative 1 – No Action Direct and Indirect Effects

ADOT would continue to manage the project area as an inactive materials source cinder pit. No impacts to cultural/heritage resources would occur.

Cumulative Effects

There would be no cumulative effects to cultural/heritage resources. Existing cultural/heritage resource conditions in the analysis area would continue.

Alternative 2 – Proposed Action Direct and Indirect Effects

Four criteria are applied in the evaluation of cultural properties for inclusion in the NRHP (36 CFR 60.4). Normally, a property must be at least 50 years old and meet at least one of these four criteria to be considered eligible for listing. The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

a. that are associated with events that have made a significant contribution to the broad patterns of our history, or
b. that are associated with the lives of persons significant in our past, or
c. that embody the distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, or
d. that have yielded, or may be likely to yield, information in prehistory or history. [36 CFR 60.4]

The SWCA survey and associated report (SWCA 2013d) recommends a finding of no effect on historic properties affected for the proposed shooting range and access road within the surveyed areas. No further archaeological work is recommended for areas that are currently extensively disturbed. The sites encountered during the survey and via the ASNFs database search (one previously recorded Historic period site, three newly recorded Historic period sites, and three IOs) were evaluated by the ASNFs Heritage Program Manager/Forest Tribal Liaison as to their eligibility for inclusion in the NRHP (SWCA 2012d).

If cultural materials or human remains are discovered in the approximately 80-acre project area during project implementation, all work in that area would cease, the area would be secured, and the Forest Archaeologist would be notified within 24 hours of the discovery. Work would not resume in the area of discovery until the Forest Archaeologist informs the District Ranger that the permittee may resume work. If the Native American Graves Protection and Repatriation Act applies to the discovery, the ASNFs would notify and consult the appropriate Tribes to determine cultural affiliation; disposition and custody of the human remains and associated funerary objects would be in accordance with the requirements contained in 43 CFR 10.6.

Cumulative Effects

The analysis area for cumulative effects to cultural/heritage resources is the Lakeside RD. The existing environmental conditions of the 80-acre project area proposed for the shooting range reflect the natural and anthropogenic changes brought on by long-term human occupancy and use of the project area (the existing materials source cinder pit).

Cumulatively, past and present activities that contribute to impacts to cultural/heritage resources include grazing (Show Low Allotment), use and maintenance of project area roads, Woolhouse WQA vegetation treatments (thinning, fuelbreaks, pile burning, etc.), and recreational activity. Each of these actions has the potential to remove, displace, or damage artifacts, features, and/or deposits of cultural material. Given the non-renewable nature of heritage resources—particularly archaeological and historical sites—any portion of the sites that has been damaged or removed diminishes their cultural and scientific value permanently.

The additive effect of the cumulative projects listed in the Chapter 3 introduction, when analyzed with the No Action alternative, would be minor. The ASNFs Revised LRMP EIS is not anticipated to change existing cultural/heritage resources on the Lakeside RD beyond the existing conditions. The Proposed Public Motorized TMP would cease or limit off-road vehicle use, and may change the total open road density of the Lakeside RD, but the exact level of change is unknown at this time. Ceasing or limiting off-road vehicle use of the ASNFs (including the Lakeside RD) would limit or restrict most surface disturbance to areas along roads open for public use, decreasing the risk of disturbance to existing cultural/heritage resources.

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CHAPTER 4: CONSULTATION AND COORDINATION

Scoping Process

The Proposed Action was listed in the ASNFs' Schedule of Proposed Actions (October 10, 2010, and published quarterly thereafter). AGFD, the project proponent, was involved early and has been involved throughout the NEPA process. The Proposed Action was posted to the Forest Service NEPA website and mailed under a cover letter dated June 7, 2012, to tribal, state, and federal governments, non-governmental organizations, and individuals, detailing the Proposed Action. A variety of individuals, environmental organizations, professional organizations, multiple-use organizations, non-governmental organizations, and government agencies were represented on the mailing list.

Consultation with Others

The ASNFs contacted the following federal, state, and local agencies as well as tribes. Non-governmental organizations and citizens were also contacted during the development of this EA.

Federal Agencies

Apache-Sitgreaves National Forests

U.S. Fish and Wildlife Service

State/County/Local Government

Arizona Department of Transportation

Arizona Department of Environmental Quality

Arizona Game and Fish Department

Arizona State Historic Preservation Office

Navajo County

City of Show Low

Town of Pinetop/Lakeside

Tribes

Fort McDowell Yavapai Nation

Hopi Tribe

Navajo Nation

Pueblo of Zuni

Ramah Navajo Chapter of Navajo Nation

San Carlos Apache Tribe

Tonto Apache Tribe

White Mountain Apache Tribe

Yavapai-Apache Tribe

Yavapai-Prescott Indian Tribe

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APPENDIX A

ENDANGERED, THREATENED, PROPOSED, AND SENSITIVE SPECIES, NAVAJO COUNTY, ARIZONA

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2

Navajo County

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Apache (Arizona) trout	*Oncorhynchus gilae apache*	Threatened	Yellowish to yellow-olive cutthroat-like trout with large dark spots on body. Dorsal, anal, and caudal fins edged with white. No red lateral band.	Apache, Coconino, Gila, Graham, Greenlee, Navajo	> 5,000 ft	Streams and rivers generally above 6,000 ft. elevation with adequate stream flow and shading; temperatures below 77 degrees F; and substrate composed of boulders, rocks, gravel and some sand and silt.	Presently restricted to drainages in the White Mountains. Hybridization with introduced trout has complicated efforts to maintain the genetic purity of some populations. Special regulations (4d Rule) allow Arizona to manage the species as a sport fish (40 FR 29863).
Black-footed ferret	*Mustela nigripes*	Endangered	Weasel-like, yellow buff coloration with black on feet, tail tip, and eye mask. It has a blunt light colored nose and is 15-18 inches long and tail length is 5-6 inches.	Apache, Coconino, Navajo, Yavapai	< 10,500	Grassland plains generally found in association with prairie dogs.	Unsurveyed prairie dog towns may be occupied by ferrets or may be appropriate for future reintroduction efforts. The Service developed guidelines for surveying prairie dog towns which are available upon request. No wild populations of this species are currently known to exist in Arizona. Reintroduced population exists in Aubrey Valley (Coconino County), Arizona.
California condor	*Gymnogyps californianus*	Endangered	Very large vulture (47 in., wingspan to 9 1/2 ft, weight to 22 lbs); adult plumage blackish, immature more brownish; adult wing linings white, immature mottled; head and upper parts of neck bare; yellow-orange in adults, grayish in mature.	Apache, Coconino, Mohave, Navajo, Yavapai	Varies	High desert canyons and plateaus.	Recovery program has reintroduced condors to Northern Arizona, with the first release (6 birds) in December 1996. The release site is located at the Vermillion Cliffs (Coconino County), with an experimental/nonessential area designated for most of Northern Arizona and Southern Utah. The area in Arizona is within a polygon formed by Hwy 191, Interstate 40, and Hwy 93, and extends north of the Arizona-Utah and Nevada borders. Breeding is documented in Arizona.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Chiricahua leopard frog	*Lithobates chiricahuensis*	Threatened	Cream colored tubercles (spots) on a dark background on the rear of the thigh, dorsolateral folds that are interrupted and deflected medially, and a call given out of water distinguish this spotted frog from other leopard frogs.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, Navajo, Pima, Santa Cruz, Yavapai	3,281-8,890 ft	Restricted to springs, livestock tanks, and streams in upper portion of watersheds that are free from nonnative predators or where marginal habitat for nonnative predators exists.	Critical habitat is designated for 10,346 acres in Apache, Cochise, Gila, Graham, Greenlee, Pima, Santa Cruz, and Yavapai counties in Arizona; and Catron, Hidalgo, Grant, Sierra, and Socorro counties in New Mexico (77 FR 16324).
Little Colorado spinedace	*Lepidomeda vittata*	Threatened	Small (<4 inches long) silvery minnow.	Apache, Coconino, Navajo	4,000-8,000 ft	Moderate to small streams; found in pools and riffles with water flowing over fine gravel and silt substrate.	Critical habitat includes 18 miles of East Clear Creek, 8 miles of Chevelon Creek, and 5 miles of Nutrioso Creek (52 FR 35034).
Loach minnow	*Tiaroga cobitis*	Endangered	Small (<3 inches) slender, elongated fish, olive colored with dirty white spots at the base of the dorsal and caudal fins. Breeding males vivid red on mouth and base of fins.	Apache, Cochise, Gila, Graham, Greenlee, Navajo, Pinal, Yavapai	< 8,000 ft	Benthic species of small to large perennial streams with swift shallow water over cobble and gravel. Recurrent flooding and natural hydrograph important.	Presently found in Aravaipa Creek, Deer Creek, Turkey Creek, Blue River, Campbell Blue Creek, Little Blue Creek, San Francisco River, Eagle Creek, North Fork of the East Fork Black River, Boneyard Creek, and White River and East Fork White River in Arizona, and Dry Blue Creek, Pace Creek, Frieborn Creek, the San Francisco River, Tularosa River, Negrito Creek, Whitewater Creek, the East, Middle, and West Forks of the Gila River, mainstem upper Gila River. Bear Creek and Mangas Creek in New Mexico. Populations have been recently reintroduced in Hot Springs and Redfield canyons in Cochise and Graham counties; Fossil Creek in Gila County; and Bonita Creek in Graham County Arizona. Critical habitat has been designated in Apache, Cochise, Gila, Graham, Greenlee, Pinal, and Yavapai counties, Arizona, as well as in Catron, Grant, and Hidalgo counties in New Mexico (77 FR 10810).

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Mexican gray wolf	*Canis lupus baileyi*	Endangered	Large dog-like carnivore. Head and feet are large in proportion to rest of body. Coat color varies with mix of brown, rust, black, gray, and white. Distinct white lip line around mouth. Adults weigh between 60-90 pounds.	Apache, Gila, Greenlee, Navajo	4,000-12,000 ft	Chaparral, woodland, and forested areas. May cross desert areas.	In January 1998, Mexican gray wolves were reintroduced as an experimental nonessential section 10(j) population under a program to re-establish the subspecies to a portion of its historical range (63 FR 1752). Wolves are released within the experimental boundary into a designated area known as the "Blue Range Wolf Recovery Area" (BRWRA) located in the Apache National Forest in Apache and Greenlee counties. Mexican gray wolves found outside of the experimental nonessential boundary are considered endangered. In 2002, the White Mountain Apache tribe (WMAT) became one of the lead agencies for the reintroduction and allowed wolves on their lands. This effectively expanded the experimental nonessential population into Apache, Gila, and Navajo counties on WMAT lands.
Mexican spotted owl	*Strix occidentalis lucida*	Threatened	Medium sized with dark eyes and no ear tufts. Brownish and heavily spotted with white or beige.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai	4,100-9,000 ft	Nests in canyons and dense forests with multi-layered foliage structure.	Generally nest in older forests of mixed conifer or ponderosa pine/gambel oak type, in canyons, and use variety of habitats for foraging. Sites with cool microclimates appear to be of importance or are preferred. Critical habitat was finalized on August 31, 2004 (69 FR 53182) in Arizona in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Navajo, Pima, Pinal, Santa Cruz, and Yavapai counties.
Navajo sedge	*Carex specuicola*	Threatened	Perennial forb with triangular stems, elongated rhizomes. Flower: white June and July.	Apache, Coconino, Navajo	5,700-6,000 ft	Silty soils at shady seeps and springs.	Designated critical habitat is on the Navajo Nation near Inscription House Ruins. Found at seep springs on vertical cliffs of pink-red Navajo sandstone (50 FR 19370).
Peebles Navajo cactus	*Pediocactus peeblesianus var. peeblesianus*	Endangered	Very small globose 1 inch tall and about 0.75 inch in diameter. The 4 (3-5) radial spines are arranged in a twisted cross and central spines are absent. Flowers yellow-green 1 inch diameter spring.	Navajo	5,400-5,600 ft	Gravely soils of the Shinarump conglomerate of the Chinle Formation.	Extremely limited geographic range. Difficult to grow in cultivation.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Southwestern willow flycatcher	*Empidonax traillii extimus*	Endangered	Small passerine (about 6 inches) grayish-green back and wings, whitish throat, light olive-gray breast and pale yellowish belly. Two wingbars visible. Eye-ring faint or absent.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 8,500 ft	Cottonwood/willow and tamarisk vegetation communities along rivers and streams.	Riparian-obligate bird that occupies migratory/breeding habitat from late April-Sept. Critical habitat was finalized on October 19, 2005 in Apache, Cochise, Gila, Graham, Greenlee, Maricopa, Mohave, Pima, Pinal, and Yavapai counties (70 FR 60886). Revised critical habitat was proposed August 15, 2011 (76 FR 50542) and includes river segments in counties currently designated plus those in La Paz, Santa Cruz, and Yuma counties. The 2005 critical habitat designation remains in effect until the current proposal is finalized. Training seminar/permits required for those conducting call playback surveys.
Northern Mexican Gartersnake	*Thamnophis eques megalops*	Candidate	Background color ranges from olive, olive-brown, to olive-gray. Body has three yellow or light colored stripes running down the length of the body, darker towards tail. Species distinguished from other native gartersnakes by the lateral stripes reaching the 3rd and 4th scale rows. Paired black spots extend along dorsolateral fields.	Apache, Cochise, Coconino, Gila, Graham, Navajo, Pima, Pinal, Santa Cruz, Yavapai	130-8,500 ft	Cienegas, stock tanks, large-river riparian woodlands and forests, streamside gallery forests.	Core population areas in the U.S. include mid/upper Verde River drainage, mid/lower Tonto Creek, and the San Rafael Valley and surrounding area. Status on tribal lands unknown. Distributed south into Mexico along the Sierra Madre Occidental and Mexican Plateau. Strongly associated with the presence of a native prey base including leopard frogs and native fish.
Roundtail chub	*Gila robusta*	Candidate	Member of the minnow family Cyprinidae and characterized by streamlined body shape. Color usually olive gray with silvery sides and a white belly. Breeding males develop red or orange coloration on the lower half of the cheeks and on the bases of paired fins. Individuals may reach 49.0 cm (19.3 in) but usually average 25-30 cm (9.8 - 11.8 in).	Apache, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pinal, Yavapai	1,000-7,500 ft.	Cool to warm waters of rivers and streams, often occupy the deepest pools and eddies of large streams.	Historical range of roundtail chub included both the upper and lower Colorado River basins. A 2009 status review determined that the lower Colorado River basin roundtail chub population segment (Arizona and New Mexico) qualifies as a distinct vertebrate population segment (DPS). Populations in the Little Colorado, Bill Williams, and Gila River basins are considered candidate species.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Yellow-billed cuckoo	*Coccyzus americanus*	Candidate	Medium-sized bird with a slender, long-tailed profile, slightly down-curved bill that is blue-black with yellow on the lower half. Plumage is grayish-brown above and white below, with rufous primary flight feathers.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 6,500 ft	Large blocks of riparian woodlands (cottonwood, willow, or tamarisk galleries).	Neotropical migrant that winters primarily in South America and breeds primarily in the U.S. (but also in southern Canada and northern Mexico). As a migrant it is rarely detected; can occur outside of riparian areas. Cuckoos are found nesting statewide, mostly below 5,000 feet in central, western, and southeastern Arizona. Concern for cuckoos are primarily focused upon alterations to its nesting and foraging habitat. Nesting cuckoos are associated with relatively dense, wooded, streamside riparian habitat, with varying combinations of Fremont cottonwood, willow, velvet ash, Arizona walnut, mesquite, and tamarisk. Some cuckoos have also been detected nesting in velvet mesquite, netleaf hackberry, Arizona sycamore, Arizona alder, and some exotic neighborhood shade trees.
American peregrine falcon	*Falco peregínus anatum*	Delisted	A crow-sized falcon with slate blue-gray on the back and wings, and white on the underside; a black head with vertical "bandit's mask" pattern over the eyes; long pointed wings; and a long wailing call made during breeding. Very adept flyers and hunters, reaching diving speeds of 200 mph.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	3,500-9,000 ft	Areas with rocky, steep cliffs, primarily near water, where prey (primarily shorebirds, songbirds, and waterfowl) concentrations are high. Nests are found on ledges of cliffs, and sometimes on man-made structures such as office towers and bridge abutments.	Species recovered with over 1,650 breeding birds in the US and Canada.

1

APPENDIX B

AGFD HERITAGE DATA MANAGEMENT SYSTEM ONLINE REVIEW TOOL RESULTS

1
2

Arizona's On-line Environmental Review Tool
Search ID: 20100830013078
Project Name: Second Knoll Shooting Range
Date: 8/30/2010 2:12:10 PM

Project Location

Project Name: Second Knoll Shooting Range
Submitted By: Jeremy Doschka
On behalf of: FS
Project Search ID: 20100830013078
Date: 8/30/2010 2:12:01 PM
Project Category: Recreation Areas,Resorts, lodges, shooting ranges, hunt clubs and other club facilities,Construction of new facilities
Project Coordinates (UTM Zone 12-NAD 83): 597600.445, 3791133.731 meter
Project Length: 3326.780 meter
County: NAVAJO
USGS 7.5 Minute Quadrangle ID: 987
Quadrangle Name: SILVER SPRINGS
Project locality is not anticipated to change

The Department appreciates the opportunity to provide in-depth comments and project review when additional information or environmental documentation becomes available.

Special Status Species Occurrences/Critical Habitat/Tribal Lands within 3 miles of Project Vicinity:

Name	Common Name	FWS	USFS	BLM	State
Haliaeetus leucocephalus (wintering pop.)	Bald Eagle - Winter Population	SC, BGA	S	S	WSC

Location Accuracy Disclaimer

Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Receipt is solely responsible for the project location and thus the correctness of the Project Review Receipt content.

 APPLICATION INITIALS: _____

1
2

Arizona's On-line Environmental Review Tool
Search ID: 20100830013078
Project Name: Second Knoll Shooting Range
Date: 8/30/2010 2:12:10 PM

Please review the entire receipt for project type recommendations and/or species or location information and retain a copy for future reference. If any of the information you provided did not accurately reflect this project, or if project plans change, another review should be conducted, as this determination may not be valid.

Arizona's On-line Environmental Review Tool:

1. This On-line Environmental Review Tool inquiry has generated recommendations regarding the potential impacts of your project on Special Status Species (SSS) and other wildlife of Arizona. SSS include all U.S. Fish and Wildlife Service federally listed, U.S. Bureau of Land Management sensitive, U.S. Forest Service sensitive, and Arizona Game and Fish Department (Department) recognized species of concern.
2. These recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation). These recommendations are preliminary in scope, designed to provide early considerations for all species of wildlife, pertinent to the project type you entered.
3. This receipt, generated by the automated On-line Environmental Review Tool does not constitute an official project review by Department biologists and planners. Further coordination may be necessary as appropriate under the National Environmental Policy Act (NEPA) and/or the Endangered Species Act (ESA).

The U.S. Fish and Wildlife Service (USFWS) has regulatory authority over all federally listed species under the ESA. Contact USFWS Ecological Services Offices: http://arizonaes.fws.gov/.

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Phone 928-226-0614
Fax 928-226-1099

Disclaimer:

1. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area.
2. The Department's Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there.
3. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. HDMS data contains information about species occurrences that have actually been reported to the Department.

Arizona Game and Fish Department Mission

To conserve, enhance, and restore Arizona's diverse wildlife resources and habitats through aggressive protection and

 APPLICATION INITIALS: _____

Arizona's On-line Environmental Review Tool
Search ID: 20100830013078
Project Name: Second Knoll Shooting Range
Date: 8/30/2010 2:12:10 PM

management programs, and to provide wildlife resources and safe watercraft and off-highway vehicle recreation for the enjoyment, appreciation, and use by present and future generations.

Project Category: Recreation Areas,Resorts, lodges, shooting ranges, hunt clubs and other club facilities,Construction of new facilities

Project Type Recommendations:

Based on the project type entered; coordination with Arizona Department of Environmental Quality may be required (http://www.azdeq.gov/).

Based on the project type entered; coordination with Arizona Department of Water Resources may be required (http://www.water.az.gov/adwr/)

Based on the project type entered; coordination with County Flood Control districts may be required.

Based on the project type entered; coordination with State Historic Preservation Office may be required http://azstateparks.com/SHPO/index.html

Consider incorporating project components that may allow for the inclusion to promote, enhance, create, or restore wildlife habitat. Contact Project Evaluation Program for further information and opportunities - http://www.azgfd.gov/inside_azgfd/agency_directory.shtml.

Development plans should provide for open natural space for wildlife movement, while also minimizing the potential for wildlife-human interactions through design features. Please contact Project Evaluation Program for more information on living with urban wildlife.

During planning and construction, minimize potential introduction or spread of exotic invasive species. Invasive species can be plants, animals (exotic snails), and other organisms (e.g. microbes), which may cause alteration to ecological functions or compete with or prey upon native species and can cause social impacts (e.g. livestock forage reduction, increase wildfire risk). The terms noxious weed or invasive plants are often used interchangeably. Precautions should be taken to wash all equipment utilized in the project activities before and after project activities to reduce the spread of invasive species. Arizona has noxious weed regulations (Arizona Revised Statutes, Rules R3-4-244 and R3-4-245). See Arizona Department of Agriculture website for restricted plants http://www.azda.gov/PSD/quarantine5.htm. Additionally, the U.S. Department of Agriculture has information regarding pest and invasive plant control methods including: pesticide, herbicide, biological control agents, and mechanical control: http://www.usda.gov/wps/portal/usdahome. The Department regulates the importation, purchasing, and transportation of wildlife and fish (Restricted Live Wildlife), please refer to the hunting regulations for further information http://www.azgfd.gov/h_f/hunting_rules.shtml.

During the planning stages of your project, please consider the local or regional needs of wildlife in regards to movement, connectivity, and access to habitat needs. Loss of this permeability prevents wildlife from accessing resources, finding mates, reduces gene flow, prevents wildlife from re-colonizing areas where local extirpations may have occurred, and ultimately prevents wildlife from contributing to ecosystem functions, such as pollination, seed dispersal, control of

 APPLICATION INITIALS: _____

1
2

Arizona's On-line Environmental Review Tool
Search ID: 20100830013078
Project Name: Second Knoll Shooting Range
Date: 8/30/2010 2:12:10 PM

prey numbers, and resistance to invasive species. In many cases, streams and washes provide natural movement corridors for wildlife and should be maintained in their natural state. Uplands also support a large diversity of species, and should be contained within important wildlife movement corridors. In addition, maintaining biodiversity and ecosystem functions can be facilitated through improving designs of structures, fences, roadways, and culverts to promote passage for a variety of wildlife.

Minimization and mitigation of impacts to wildlife and fish species due to changes in water quality, quantity, chemistry, temperature, and alteration to flow regimes (timing, magnitude, duration, and frequency of floods) should be evaluated. Minimize impacts to springs, in-stream flow, and consider irrigation improvements to decrease water use. If dredging is a project component, consider timing of the project in order to minimize impacts to spawning fish and other aquatic species (including spawning seasons), and to reduce spread of exotic invasive species. We recommend early direct coordination with Project Evaluation Program for projects that could impact water resources, wetlands, streams, springs, and/or riparian habitats.

Planning: consider impacts of lighting intensity on mammals and birds and develop measures or alternatives that can be taken to increase human safety while minimizing potential impacts to wildlife. Conduct wildlife surveys to determine species within project area, and evaluate proposed activities based on species biology and natural history to determine if artificial lighting may disrupt behavior patterns or habitat use.

Recommendations will be dependant upon goals of the fence project and the wildlife species expected to be impacted by the project. General guidelines for ensuring wildlife-friendly fences include: barbless wire on the top and bottom with the maximum fence height 42", minimum height for bottom 16". Modifications to this design may be considered for fencing anticipated to be routinely encountered by elk, bighorn sheep or pronghorn (e.g., Pronghorn fencing would require 18" minimum height on the bottom). Please refer to the Department's Fencing Guidelines located at http://www.azgfd.gov/hgis/guidelines.aspx.

The Department recommends that wildlife surveys are conducted to determine if noise-sensitive species occur within the project area. Avoidance or minimization measures could include conducting project activities outside of breeding seasons.

The construction or maintenance of water developments should include: incorporation of aspects of the natural environment and the visual resources, maintaining the water for a variety of species, water surface area (e.g. bats require a greater area due to in-flight drinking), accessibility, year-round availability, minimizing potential for water quality problems, frequency of flushing, shading of natural features, regular clean-up of debris, escape ramps, minimizing obstacles, and minimizing accumulation of silt and mud.

Project Location and/or Species recommendations:

Heritage Data Management System records indicate that one or more listed, proposed, or candidate species or Critical Habitat (Designated or Proposed) have been documented in the vicinity of your project (refer to page 1 of the receipt). Please contact:
Ecological Services Office
US Fish and Wildlife Service
2321 W. Royal Palm Rd.
Phoenix, AZ 85021-4951
Phone: 602-242-0210
Fax: 602-242-2513

Recommendations Disclaimer:

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Project Name: Second Knoll Shooting Range
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1. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project.
2. These recommendations are proposed actions or guidelines to be considered during **preliminary project development**.
3. Additional site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies.
4. Making this information directly available does not substitute for the Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.
5. The Department is interested in the conservation of all fish and wildlife resources, including those Special Status Species listed on this receipt, and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
6. **Further coordination requires the submittal of this initialed and signed Environmental Review Receipt with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map).**
7. Upon receiving information by AZGFD, please allow 30 days for completion of project reviews. Mail requests to:

Project Evaluation Program, Habitat Branch
Arizona Game and Fish Department
5000 West Carefree Highway
Phoenix, Arizona 85086-5000
Phone Number: (623) 236-7600
Fax Number: (623) 236-7366

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By using this site, you acknowledge that you have read and understand the terms of use. Department staff may revise these terms periodically. If you continue to use our website after we post changes to these terms, it will mean that you accept such changes. If at any time you do not wish to accept the Terms, you may choose not to use the website.

1. This Environmental Review and project planning website was developed and intended for the purpose of screening projects for potential impacts on resources of special concern. By indicating your agreement to the terms of use for this website, you warrant that you will not use this website for any other purpose.
2. Unauthorized attempts to upload information or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act .
3. The Department reserves the right at any time, without notice, to enhance, modify, alter, or suspend the website and to terminate or restrict your access to the website.
4. This Environmental Review is based on the project study area that was entered. The review must be redone if the project study area, location, or the type of project changes. If additional information becomes available, this review may need to be reconsidered.
5. A signed and initialed copy of the Environmental Review Receipt indicates that the entire receipt has been read by the signer of the Environmental Review Receipt.

Security:

The Environmental Review and project planning web application operates on a complex State computer system. This system is monitored to ensure proper operation, to verify the functioning of applicable security features, and for other like purposes. Anyone using this system expressly consents to such monitoring and is advised that if such monitoring reveals possible evidence of criminal activity, system personnel may provide the evidence of such monitoring to law enforcement officials. Unauthorized attempts to upload or change information; to defeat or circumvent security measures; or to utilize this

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system for other than its intended purposes are prohibited.

This website maintains a record of each environmental review search result as well as all contact information. This information is maintained for internal tracking purposes. Information collected in this application will not be shared outside of the purposes of the Department.

If the Environmental Review Receipt and supporting material are not mailed to the Department or other appropriate agencies within six (6) months of the Project Review Receipt date, the receipt is considered to be null and void, and a new review must be initiated.

Print this Environmental Review Receipt using your Internet browser's print function and keep it for your records. Signature of this receipt indicates the signer has read and understands the information provided.

Signature:_____

Date: _____

Proposed Date of Implementation: _____

Please provide point of contact information regarding this Environmental Review.

Application or organization responsible for project implementation

Agency/organization:_____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

E-mail: _____

Person Conducting Search (if not applicant)

Agency/organization:_____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

 APPLICATION INITIALS: _____

Arizona's On-line Environmental Review Tool
Search ID: 20100830013078
Project Name: Second Knoll Shooting Range
Date: 8/30/2010 2:12:10 PM

E-mail: _____

 APPLICATION INITIALS: _____

APPENDIX C

AGFD HAZARDOUS WASTE MANAGEMENT PLAN FOR DEPARTMENT OWNED SHOOTING RANGES

ARIZONA GAME AND FISH DEPARTMENT

HAZARDOUS WASTE MANAGEMENT PLAN
For
DEPARTMENT OWNED/OPERATED SHOOTING RANGES

INTRODUCTION:

Arizona Game and Fish Department (Department) shooting ranges represent a valuable recreational asset to the citizens of Arizona and must be managed responsibly. Accordingly, the Department has developed this Hazardous Waste Management Plan (HWMP) to control the use of potentially hazardous materials and manage the generation and disposal of hazardous wastes at Department shooting ranges.

GENERAL:

This HWMP applies to all Department staff and partnering organizations operating, assigned, attached or conducting training at Department owned and/or operated shooting ranges; all contractor and subcontractor activities providing services to or located at Department owned and/or operated shooting ranges; and any person visiting or working within the defined property boundaries of Department owned and/or operated shooting ranges.

Range operating and maintenance personnel shall carefully follow the guidance contained in the site specific Lead Best Management Practices Plan (PbBMPP) and Shooting Range Staff Health and Safety Plan (SRSHSP). The SRSHSP shall be prepared and reviewed on a biannual basis by a Certified Industrial Hygienist.

No chemicals of any sort, including firearms cleaning chemicals, chemicals used to finish or protect firearms, pesticides or herbicides may be stored or utilized on Department owned and/or operated shooting range properties without the express written permission of the Department's Shooting Range Branch Chief or Chief Range Master. Range staff and partnering organizations shall comply with the all directions herein regarding proper storage, use and disposal directions.

1. SOLVENTS

1.1 Solvent Management

Solvents shall be maintained and used in accordance with the manufacturers MSDS and OSHA standards. Solvents shall be maintained in their original

containers until spent. Used solvent shall be placed in approved accumulation containers for disposal or recycling.

1.2 Solvent Reclaiming

Solvent users are encouraged to reclaim all recyclable solvent utilizing recycling/reprocessing services.

1.3 Unacceptable Disposal

Solvents shall not be discharged to the sanitary or storm sewers, septic systems, disposed of in landfills, burned, abandoned, evaporated, or placed in used oil tanks or drums. Range staff and partnering organizations shall contact the Shooting Range Branch Chief or Chief Range Master for proper disposal directions.

2. EXPENDED ORDNANCE

2.1 Expended Ordnance Management

Department owned and/or operated shooting ranges shall recycle all possible components of expended ordnance. Expended ordnance shall be collected in the following manner:

Cartridge cases shall be collected by shooters or range maintenance personnel and placed in fiberboard boxes or barrels located on all ranges.

All cartridge cases shall be sorted with steel cartridge cases and live rounds removed prior to recycling. All brass cartridge cases shall be recycled if possible.

2.2 Unacceptable Disposal

Expended ordnance shall never be disposed of on the ground, in landfills, or in trash containers/dumpsters. Range staff and partnering organizations shall contact the Shooting Range Branch Chief or Chief Range Master for proper disposal directions.

3. PETROLEUM, OIL, AND LUBRICANTS (POLs)

3.1 POL Management

Department owned and/or operated shooting ranges shall recycle POLs to the highest extent possible and minimize the waste of POLs. POLs shall be maintained and used in accordance with the manufacturers MSDS and OSHA

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standards. POLs shall be maintained in their original containers until spent. Used POLs shall be placed in approved accumulation containers for offsite disposal or recycling.

3.2 Unacceptable Disposal

POLs shall not be discharged to sanitary sewers, septic systems or storm sewers, disposed of in landfills, solid waste collection facilities, burned, abandoned, or evaporated. Range staff and partnering organizations shall contact the Shooting Range Branch Chief or Chief Range Master for proper disposal directions.

4. LEAD CONTAMINATED MATERIALS (LCM)

4.1 LCM Management

Department owned and/or operated shooting ranges shall minimize the generation of LCMs to the greatest extent possible. Used cleaning patches and other LCMs shall be placed in approved accumulation containers for disposal.

4.2 Unacceptable Disposal

LCMs shall not be discharged into sanitary sewers, storm drains or septic systems or disposed of in landfills, solid waste collection facilities. Range staff and partnering organizations shall contact the Shooting Range Branch Chief or Chief Range Master for proper disposal directions.

5. COMPLIANCE AND INSPECTION

5.1 COMPLIANCE WITH REQUIREMENTS

Department range staff and partnering organizations operating, assigned, attached or conducting training at Department owned and/or operated shooting ranges; all contractor and subcontractor activities providing services to or located at Department owned and/or operated shooting ranges; and any person visiting or working within the defined property boundaries of Department owned and/or operated shooting ranges shall comply with all the requirements of the HWMP. Failure to comply with these requirements may be grounds for termination of either employment or association with the Department.

5.1 INSPECTION

Department Shooting Range Branch or other appropriate staff shall inspect all Department owned and/or operated shooting ranges on a semi-annual basis to ensure compliance with the HWMP, the applicable PbBMPP and SRSHSP.

Contact Information

Chief Range Master
Ben Avery Shooting Range
4044 W. Carefree Highway
Phoenix, AZ 85086
623-582-5039

Shooting Range Branch Chief
Information and Education Division
5000 W. Carefree Highway
Phoenix, AZ 85086
623-236-7229

APPENDIX D

RECREATION OPPORTUNITY SPECTRUM

RECREATION OPPORTUNITY SPECTRUM

The following tables describe the recreation setting character conditions required to produce recreation opportunities and facilitate the attainment of both recreation experiences and beneficial outcomes. The Recreation Opportunity Spectrum (ROS) offers a framework for understanding the relationships and interactions the public may experience with a particular area of public land. The ROS setting framework was developed by the U.S. Department of Agriculture in *Recreation Opportunity Spectrum: A Framework for Planning, Management, and Research* (General Technical Report PNW-98, December 1979).

This characterization of settings is used for both describing existing setting conditions and character (Affected Environment) and describing impacts to recreation (Environmental Consequences). Indicators and standards for monitoring setting conditions would be derived and/or developed from the (a) through (i) components in Table C-1.

Table C-1. Characterization of Settings

Primitive	Semi-primitive Non-motorized	Semi-primitive Motorized	Roaded Natural	Rural	Urban
Physical – Resources and Facilities: Character of the Natural Landscape					
a. Remoteness					
>3 miles from any road	>0.5 mile from any kind of road, but not as far as 3 miles, and no road is in sight.	On or near 4WD roads, but at least 0.5 mile from all improved roads, although they may not be in sight.	On or near improved country roads, but at least 0.5 mile from all highways.	On or near primary highways, but still within a rural area.	On or near primary highways, municipal streets, and roads within towns or cities.
b. Naturalness					
Undisturbed natural landscape	Naturally appearing landscape having modifications not readily noticeable.	Naturally appearing landscape except for obvious primitive roads.	Landscape partially modified by roads, utility lines, etc., but none overpower natural landscape features.	Natural landscape substantially modified by agriculture or industrial development.	Urbanized development dominates this landscape.
c. Facilities					
None	Some primitive trails made of natural materials such as log bridges and carved wooden signs.	Maintained and marked trails, simple trailhead developments, improved signs, and very basic toilets.	Improved yet modest, rustic facilities such as campgrounds, restrooms, trails, and interpretive signs.	Modern facilities such as campgrounds, group shelters, boat launches, and occasional exhibits.	Elaborate, full-service facilities such as laundry, groceries, and bookstores.
Social – Visitor Use and Users: Character of Recreation and Tourism Use					
d. Group Size					
Fewer than or equal to 3 people per group.	4 to 6 people per group.	7 to 12 people per group.	13 to 25 people per group.	26 to 50 people per group.	More than 50 people per group.

Table C-1. Characterization of Settings (Continued)

Primitive	Semi-primitive Non-motorized	Semi-primitive Motorized	Roaded Natural	Rural	Urban
Social – Visitor Use and Users: Character of Recreation and Tourism Use, continued					
e. Contacts (with other users/user groups)					
Fewer than 3 encounters per day at campsites and fewer than 6 encounters per day on travel routes.	3 to 6 encounters per day off travel routes (e.g., campsites) and 7 to 15 encounters per day on travel routes.	7 to 14 encounters per day off travel routes (e.g., staging areas) and 15 to 29 encounters per day en route.	15 to 29 encounters per day off travel routes (e.g., campgrounds) and 30 or more encounters per day en route.	People seem to be everywhere, but human contact is intermittent.	Other people consistently in view.
f. Evidence of Use					
Only footprints may be observed.	Footprints plus slight vegetation trampling at campsites and travel routes. Only infrequent litter.	Vehicle tracks and occasional litter and soil erosion. Vegetation becoming worn.	Well-worn soils and vegetation, but often gravel surfaced for erosion control. Litter may be frequent.	Paved routes protect soils and vegetation, but noise, litter, and facility impacts are pervasive.	A busy place with what seems like constant noise; unavoidable litter seems to be a lifestyle choice.
Administrative – Administrative and Service Setting: How Public Land Managers, County Commissioners and Municipal Governments, and Local Businesses Care for the Area and Serve Visitors and Local Residents					
g. Visitor Services					
None is available on-site.	Basic maps, but area personnel seldom available to provide on-site assistance.	Area brochures and maps, plus area personnel occasionally present to provide on-site assistance.	Information materials describe recreation areas and activities. Area personnel are periodically available.	Everything described to the left in this row, and descriptions of experiences and benefits available. Area personnel do on-site education.	Everything described to the left of this row, plus regularly scheduled on-site outdoor skills demonstrations and clinics.
h. Management Controls					
No visitor controls apparent. No use limits. Enforcement presence may be very rare.	Signs at key access points on basic user ethics. May have back country use restrictions. Enforcement presence rare.	Occasional regulatory signing. Motorized and mechanized use restrictions. Random enforcement presence.	Rules clearly posted with some seasonal or day-of-week restrictions. Periodic enforcement presence.	Regulations prominent. Total use limited by permit, reservation, etc. Routine enforcement presence.	Continues enforcement to redistribute use and reduce user conflicts, hazards, and resource damage.
i. Mechanized Use					
None whatsoever.	Mountain bikes and perhaps other mechanized use, but all uses are non-motorized.	4WD, ATV, dirt bikes, or snowmobiles in addition to non-motorized, mechanized use.	2WD vehicles predominant, but also 4WD and non-motorized, mechanized use.	Ordinary highway auto and truck traffic is characteristic.	Wide variety of street vehicle and highway traffic is ever-present.