

United States Department of the Interior

U.S. Fish and Wildlife Service

Arizona Ecological Services Office

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In Reply Refer To:

AESO/SE
22410-2009-F-0126

July 14, 2011

Lieutenant Colonel John S. Ladd, Environmental Program Manager
Arizona Army National Guard
Departments of the Army and the Air Force
Joint Force Headquarters – Arizona
5636 East McDowell Road
Phoenix, Arizona 85008-3495

RE: Arizona Army National Guard, Camp Navajo, Maneuver Training Center - Light

Dear LTC Ladd:

Thank you for your request for formal consultation with the U.S. Fish and Wildlife Service (FWS) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request was dated February 25, 2011, and received by us on March 2, 2011. This consultation concerns the possible effects of the proposed construction and development of new ranges, training areas, and improvements to existing ranges at Camp Navajo, Coconino County, Arizona. The Arizona Army National Guard (AZARNG) has determined that the proposed action may affect the threatened Mexican spotted owl (*Strix occidentalis lucida*) (MSO) and its designated critical habitat.

The BA also requested that we provide our technical assistance with respect to compliance with the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d) for wintering bald eagles (*Haliaeetus leucocephalus*). Our documentation of AZARNG's implementation of minimization measures to reduce the likelihood of take is included in Appendix A.

This biological opinion is based on information provided in the February 2011, Biological Assessment (BA), conversations and electronic correspondence with AZARNG staff, and other sources of information. Literature cited in this biological opinion (BO) is not a complete bibliography of all literature available on the species addressed or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

Consultation History

Details of the consultation history are summarized in Table 1.

Table 1. Summary of Consultation History

| Date | Event |
|-------------------|--|
| December 17, 2008 | We began discussions with the AZARNG and their consultants regarding the project. Electronic mail correspondence regarding the project has continued to date. |
| May 11, 2009 | The AZARNG requested available data on the distribution of wildlife and plant species at Camp Navajo. |
| June 5, 2009 | We received and reviewed the comment matrix for the draft MTC-Light BA. |
| June 12, 2009 | We responded to AZARNG's request for information regarding wildlife and plant species at Camp Navajo. |
| July 23, 2009 | We provided comments to the AZARNG regarding the draft BA for the project. |
| January 31, 2011 | We received the final draft of the MTC-Light BA for our review. |
| February 11, 2011 | We provided comments to the AZARNG on the final draft of the MTC-Light BA. |
| February 25, 2011 | The AZARNG requested formal consultation for potential adverse affects to the MSO and its designated critical habitat resulting from upgrading Camp Navajo to a Maneuver Training Center – Light (MTC-Light) installation. |
| March 22, 2011 | We acknowledged your request for formal consultation with a 30-day letter. |
| July 13, 2011 | We provided a copy of the draft BO to the AZARNG for their review. |
| July 13, 2011 | We received your comments on the draft BO and incorporated them into the final document. |

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

Camp Navajo is located near Bellemont, Arizona, in the north-central part of the state, approximately 15 miles west of the City of Flagstaff and 17 miles east of Williams. The installation is approximately 28,372 acres in size. Areas where range expansion would occur are found in Townships 21 and 22 North, Range 5 East, and Township 21 North, Range 6 East, of the Gila and Salt River Baseline and Meridian, Coconino County, Arizona (see Figure 1, page 2-3 in the BA).

The agency action includes the construction and operation of a 6,600-acre MTC-Light complex at Camp Navajo. As part of the proposed action the AZARNG proposes to construct and operate 12 new training ranges, including 32 support buildings for the ranges, and 10 latrine facilities that would be constructed in conjunction with the ranges. Twelve buildings would be constructed to train troops in urban warfare. Additional improvements would include new training buildings, support and management facilities, real property improvements, and utility upgrades.

Several guidelines, procedures, and standards were used to determine the most feasible sites for the range complex within the installation. These included Training Circular 25-8, *Training Ranges* and the U.S. Army Corps of Engineers *Range Design Guide, Policies and Procedures for Firing Ammunition for Training Target Practice and Combat* (Army Regulation 385-63), *Ammunition and Explosive Safety Standards* (Department of the Army Pamphlet 385-64), and AZIA-ZX-QA Memorandum (Army Regulation 385.63). This standard guidance is used for planning, developing, constructing, and operating Army ranges and developing surface danger zones (SDZs) for weapons fired on Army and AZARNG ranges.

SDZs include the ground and airspace designated within the training complex for vertical and lateral containment of projectiles, fragments, debris, and components resulting from the firing, launching, or detonation of weapons systems (ammunition, explosives, and demolition explosives). The objective of designating SDZs is to minimize the risk to the public of weapons fragment escape or other firing range danger. The standard is to allow no greater than a one in one million residual risk of fragment escape or other danger to the public. Some ground disturbance would occur within SDZs, which would be caused by itinerant projectiles, fragments, or debris that can occasionally drift into these areas.

The eastern, southern, and southwestern-most portions of the Camp Navajo installation were determined to be the most feasible sites for the new individual ranges proposed to comprise the MTC-Light range complex, based on the above standard guidance, Camp Navajo mission requirements, facilities (e.g., especially the existing depot-level storage areas and bunkers), and current and planned land uses within Camp Navajo. An additional consideration for locating the proposed ranges was to keep all SDZs within installation boundaries. Those sectors of the installation described above contain sufficient unrestricted land to support the proposed training ranges and lands. The proposed action would also include improvement of existing roads/trails and utilities in the same sectors as the proposed ranges and land developments. The proposed

action includes conservation measures, best management practices, and other measures described to minimize impacts to MSO and bald eagles resulting from the development, construction, and operation of the proposed MTC-Light ranges.

Specific information on construction and use of the ranges described below are found in Table 2-1 and Table 2-2 in the BA (pages 2-9 through 2-11). In addition to the training ranges, a Veterans' Cemetery has been proposed in the northeastern part of the facility, but is not in place at this time. There are several ranges included in the BA that we consulted on in a previous BO (Consultation #22410-2004-F-0008); the construction and operation of previously consulted on actions is not included in this proposed action. The new ranges to be constructed as part of this action are as follows:

- *Multi-Purpose Machine Gun Range:* This range would be designed for zeroing, training, and qualification requirements with squad automatic weapons and machine guns. This range would be located in the southern quadrant of the installation.
- *Mortar Range:* This range would be designed to meet the training requirements of mortar crewmen. This range would be located in the southeastern quadrant of the installation.
- *Obstacle Course:* This facility would be designed to help soldiers develop confidence and strength by navigating through a series of obstacles. This course is located at the eastern boundary of the installation.
- *Anti-Armor Tracking Range:* This range complex would be designed to meet training and qualification requirements with medium and heavy anti-armor weapons systems. Lasers will be employed and noise simulators could be used on this range, but no live ammunition would be used. This range would be located in the same area as the Light Anti-Armor Range in the southwestern quadrant of the installation.
- *Infantry Platoon Battle Course:* This complex would be designed to meet the training and qualification requirements of infantry platoons, either mounted or dismounted, for movement techniques and operations. This range would be located near the southern boundary of the installation.
- *Infantry Squad Battle Course:* This complex would be designed to meet the training and qualification requirements of teams and squads in individual and collective tactics, techniques, procedures, and employment in tactical situations. This range would be near the southern boundary of the installation and overlaps the Infantry Platoon Battle Course.
- *Convoy Live-Fire Course:* This training facility would be used to train and evaluate units during live-fire exercises and to test the skills of vehicle operators with a variety of vehicles. The course would follow existing installation roads in the southern part of the installation.
- *Military Operations in Urban Terrain:* This training course would be designed to meet the training requirements of a company-sized infantry unit operating in an urban

environment. This complex would contain a maximum of 12 facilities. This course would be located in the southeastern quadrant of the installation and would only use blank ammunition.

- *Light Demolition Range:* This range would be designed for training and qualification in employing explosives and demolition charges. This range would be located near the existing Quarry Pit in the southern portion of the installation.
- *Confidence Course:* This facility would be designed to help soldiers develop confidence and strength by navigating through a series of obstacles. The course would be located at the eastern boundary of the installation.
- *Leadership Reaction Course:* This facility would be designed to develop leadership, teamwork, and confidence having soldiers navigate through a series of obstacles. This course would be located on the same area as the Confidence Course at the eastern boundary of the installation.
- *M113 Tracked Vehicle Course:* This course would be used to train soldiers on the use of M113 tracked vehicles. Training is limited to existing roads and trails and would need no additional construction or improvements. The routes are in the northern and eastern parts of the facility.

Training Center Buildings and Related Facilities

Additional buildings, facilities, utilities, infrastructure, and other real property improvements of the proposed action would be required for the transition and expansion of Camp Navajo to MTC-Light standards. Those would include the following:

- *Multipurpose Training Building:* The facility would provide classrooms, a fitness room, and training support administrative areas. This facility would be enhanced to provide full-service capacity and capability to serve as the State of Arizona Emergency Operations Center, in combination with other facilities within the training center campus.
- *Logistics Support Center:* The facility would provide training program and resource management for the training center, ranges, and field training and maneuver areas. Offices would include the housing office and range control office.
- *Training Center Campus:* The campus would consist of additional barracks, a dining facility, and a company headquarters for an additional force of about 1,000 soldiers.
- *Installation Support Center:* The facility would consolidate installation support functions into a single location to include engineering, environmental, maintenance, supply, and industrial operations.
- *Installation Utility Upgrades:* Key utility upgrades, modernization, and replacement would include the electrical and water systems.

The buildings and utilities described above were proposed in the Camp Navajo Real Property Development Plan (June 2008) to support Camp Navajo's transition to a MTC Light level of training and are specific to its MTC-Light mission. Other development projects in the Camp Navajo Real Property Development Plan not specific to the MTC-Light mission have not been included as part of the proposed action for evaluation in this document and will be consulted on separately if needed.

Conservation Measures

- AZARNG would continue to conduct biennial surveys for the MSO within Camp Navajo in partnership with and according to FWS survey protocol. The information could be used to better determine areas where AZARNG activities could be tailored to maintain MSO habitat.
- Prior to any range use, a visual scan of the range would be made for the presence of raptors, including MSO. Trained personnel would conduct these searches. If raptors are observed during initial scan of the range area, the Camp Navajo Natural Resources Specialist would be notified and activities would be halted until the species are identified and the activities are cleared to proceed. If no large raptors are observed prior to range use, activities would proceed as planned. Though this visual technique would be unlikely to detect any MSO, it could incidentally reduce the impact to the species and would aid in raising awareness of soldiers using the range that maintaining wildlife resources at Camp Navajo is important.
- Targets in firing ranges would be configured to avoid large-diameter trees and snags.
- Trees left within proposed firing ranges would be monitored to assess long-term damage from training rounds. A monitoring program for forested areas within proposed ranges and SDZs may also be established to assess forest reproduction and recruitment. Monitoring would be conducted under the Land Condition Trend Analysis component of the AZARNG Integrated Training Area Management Program.
- Roadways, staging areas, and other areas disturbed during construction activities and that would not be needed for the proposed ranges would be re-vegetated with native plant species.
- Mechanical thinning and prescribed burning within the firebreak perimeters would continue to be conducted to minimize the risk of wildfire spreading to potential owl habitat.
- Human activities and noise disturbance in the Volunteer Canyon MSO protected activity center (PAC) would be limited during the MSO breeding season (March 1 through August 31) unless necessary activities, such as fire suppression, preclude this measure. All construction activities within 0.25 mile of the PAC will be conducted outside the breeding season.

- Noise levels would be measured at the Volunteer Canyon MSO PAC boundary for activities on the Infantry Squad Battle Course, Infantry Platoon Battle Course, Convoy Live Fire Range, and Multi-Purpose Machine Gun Range and would be reduced to less than 90 dBA. These levels would be verified by AZARNG prior to beginning operation of the range.
- Current tree densities between the PAC boundary and the Infantry Squad Battle Course and Infantry Platoon Battle Course would be maintained if necessary to keep noise levels below 90 dBA at the PAC boundary.
- Camp Navajo would implement a 25 mile per hour (mph) speed limit on dirt roads throughout the installation which should minimize the potential for vehicular collisions with MSO. The speed limit is 35 mph on paved roads, but these roads are not located in MSO habitat.

STATUS OF THE SPECIES

The MSO was listed as a threatened species in 1993 (USDI 1993). The primary threats to the species were cited as even-aged timber harvest and stand-replacing wildland fire, although grazing, recreation, and other land uses were also mentioned as possible factors influencing the MSO population. The FWS appointed the Mexican Spotted Owl Recovery Team in 1993, which produced the Recovery Plan for the Mexican Spotted Owl (Recovery Plan) in 1995 (USDI 1995). The FWS will be releasing a Draft Revised Recovery Plan for review during the summer of 2011. Critical habitat was designated for the MSO in 2004 (USDI 2004).

A detailed account of the taxonomy, biology, and reproductive characteristics of the MSO is found in the Final Rule listing the MSO as a threatened species (USDI 1993) and in the Recovery Plan (USDI 1995). The information provided in those documents is included herein by reference. Although the MSO's entire range covers a broad area of the southwestern United States and Mexico, the MSO does not occur uniformly throughout its range. Instead, it occurs in disjunct localities that correspond to isolated forested mountain systems, canyons, and in some cases steep, rocky canyon lands. Surveys have revealed that the species has an affinity for older, uneven-aged forest, and the species is known to inhabit a physically diverse landscape in the southwestern United States and Mexico.

The United States range of the MSO has been divided into six recovery units (RU), as discussed in the Recovery Plan. The primary administrator of lands supporting the MSO in the United States is the Forest Service. Most owls have been found within Forest Service Region 3 (which includes 11 National Forests in Arizona and New Mexico). Forest Service Regions 2 and 4 (which includes two National Forests in Colorado and three in Utah) support fewer owls. According to the Recovery Plan, 91 percent of MSO known to exist in the United States between 1990 and 1993 occurred on lands administered by the Forest Service.

Historical and current anthropogenic uses of MSO habitat include both domestic and wild ungulate grazing, recreation, fuels reduction treatments, resource extraction (e.g., timber, oil,

gas), and development. These activities have the potential to reduce the quality of MSO nesting, roosting, and foraging habitat, and may cause disturbance during the breeding season. Livestock and wild ungulate grazing is prevalent throughout Region 3 National Forest lands and is thought to have a negative effect on the availability of grass cover for prey species. Recreation impacts are increasing on all forests, especially in meadow and riparian areas. There is anecdotal information and research that indicates that owls in heavily used recreation areas are much more erratic in their movement patterns and behavior. Fuels reduction treatments, though critical to reducing the risk of severe wildland fire, can have short-term adverse effects to MSO through habitat modification and disturbance. As the human population grows, especially in Arizona, small communities within and adjacent to National Forest System lands are being developed. This trend may have detrimental effects to MSO by further fragmenting habitat and increasing disturbance during the breeding season. West Nile Virus also has the potential to adversely impact the MSO. The virus has been documented in Arizona, New Mexico, and Colorado, and preliminary information suggests that owls may be highly vulnerable to this disease (Courtney et al. 2004). Unfortunately, due to the secretive nature of owls and the lack of intensive monitoring of banded birds, we will most likely not know when owls contract the disease or the extent of its impact to MSO range-wide.

Currently, high-intensity, stand-replacing fires are influencing ponderosa pine and mixed conifer forest types in Arizona and New Mexico. Uncharacteristic, high-severity, stand-replacing wildland fire is probably the greatest threat to MSO within the action area. As throughout the West, fire severity and size have been increasing within this geographic area. Landscape level fires, such as the Rodeo-Chediski Fire (2002) and currently the Wallow Fire (2011), have resulted in the loss of thousands of acres of occupied and potential MSO habitat across significant portions of its range.

Global climate variability may also be a threat to the MSO and synergistically result in increased effects to habitat from fire, fuels reduction treatments, and other factors discussed above. Studies have shown that since 1950, the snowmelt season in some watersheds of the western U.S. has advanced by about 10 days (Dettinger and Cayan 1995, Dettinger and Diaz 2000, Stewart et al. 2004). Such changes in the timing and amount of snowmelt are thought to be signals of climate-related change in high elevations (Smith et al. 2000, Reiners et al. 2003). The impact of climate change is the intensification of natural drought cycles and the ensuing stress placed upon high-elevation montane habitats (IPCC 2007, Cook et al. 2004, Breshears et al. 2005, Mueller et al. 2005). The increased stress put on these habitats is likely to result in long-term changes to vegetation, invertebrate, and vertebrate populations within coniferous forests and canyon habitats that affect ecosystem function and processes.

A reliable estimate of the numbers of owls throughout its entire range is not currently available (USDI 1995) and the quality and quantity of information regarding numbers of MSO vary by source. USDI (1991) reported a total of 2,160 owls throughout the United States. Fletcher (1990) calculated that 2,074 owls existed in Arizona and New Mexico. However, Ganey *et al.* (2000) estimated approximately $2,950 \pm 1,067$ (SE) MSOs in the Upper Gila Mountains RU alone. The Forest Service Region 3 most recently reported a total of approximately 1,065 PACs established on National Forest System (NFS) lands in Arizona and New Mexico (U.S. Forest Service, 2011 Land and Resource Management Plan Biological Assessment, pg. 41). The FS

Region 3 data are the most current compiled information available to us; however, survey efforts in areas other than NFS lands have resulted in additional sites being located in all RUs.

Researchers studied MSO population dynamics on one study site in Arizona (n = 63 territories) and one study site in New Mexico (n = 47 territories) from 1991 through 2002. The Final Report, titled “Temporal and Spatial Variation in the Demographic Rates of Two Mexican Spotted Owl Populations” (Gutierrez et al. 2003), found that reproduction varied greatly over time, while survival varied little. The estimates of the population rate of change (Λ =Lambda) indicated that the Arizona population was stable (mean Λ from 1993 to 2000 = 0.995; 95 percent Confidence Interval = 0.836, 1.155) while the New Mexico population declined at an annual rate of about 6 percent (mean Λ from 1993 to 2000 = 0.937; 95 percent Confidence Interval = 0.895, 0.979). The study concludes that spotted owl populations could experience great (>20 percent) fluctuations in numbers from year to year due to the high annual variation in recruitment. However, due to the high annual variation in recruitment, the MSO is then likely very vulnerable to actions that impact adult survival (e.g., habitat alteration, drought, etc.) during years of low recruitment.

Since the owl was listed, we have completed or have in draft form a total of 228 formal consultations for the MSO. These formal consultations have identified incidences of anticipated incidental take of MSO in 439 PACs over the course of 18 years. The form of this incidental take is almost entirely harm or harassment, rather than direct mortality, and many of these actions have resulted in single or short-term disturbance to owls that has not resulted in long-term harassment, habitat degradation, or habitat loss. These consultations have primarily dealt with actions proposed by Forest Service Region 3. However, in addition to actions proposed by Forest Service Region 3, we have also reviewed the impacts of actions proposed by the Bureau of Indian Affairs, Department of Defense (including Air Force, Army, and Navy), Department of Energy, National Park Service, and Federal Highway Administration. These proposals have included timber sales, road construction, fire/ecosystem management projects (including prescribed natural and management ignited fires), livestock grazing, recreation activities, utility corridors, military and sightseeing overflights, and other activities. Only two of these projects (release of site-specific owl location information and existing forest plans) have resulted in BOs that the proposed action would likely jeopardize the continued existence of the MSO. The jeopardy opinion issued for existing Forest Plans on November 25, 1997 was rendered moot as a non-jeopardy/no adverse modification BO was issued the same day.

Mexican spotted owl critical habitat

The final MSO critical habitat rule (USDI 2004) designated approximately 8.6 million acres of critical habitat in Arizona, Colorado, New Mexico, and Utah, mostly on Federal lands (USDI 2004). Within this larger area, critical habitat is limited to areas that meet the definition of protected and restricted habitat, as described in the Recovery Plan. Protected habitat includes all known owl sites and all areas within mixed conifer or pine-oak habitat with slopes greater than 40 percent where timber harvest has not occurred in the past 20 years. Restricted habitat includes mixed conifer forest, pine-oak forest, and riparian areas outside of protected habitat.

The primary constituent elements for proposed MSO critical habitat were determined from studies of their habitat requirements and information provided in the Recovery Plan (USDI 1995). Since owl habitat can include both canyon and forested areas, primary constituent elements were identified in both areas. The primary constituent elements which occur for the MSO within mixed-conifer, pine-oak, and riparian forest types that provide for one or more of the MSO's habitat needs for nesting, roosting, foraging, and dispersing are in areas defined by the following features for forest structure and prey species habitat:

Primary constituent elements related to forest structure include:

A range of tree species, including mixed conifer, pine-oak, and riparian forest types, composed of different tree sizes reflecting different ages of trees, 30 percent to 45 percent of which are large trees with diameter-at-breast height (dbh) of 12 inches or more;

A shade canopy created by the tree branches covering 40 percent or more of the ground; and,

Large, dead trees (snags) with a dbh of at least 12 inches.

Primary constituent elements related to the maintenance of adequate prey species include:

High volumes of fallen trees and other woody debris;

A wide range of tree and plant species, including hardwoods; and

Adequate levels of residual plant cover to maintain fruits and seeds, and allow plant regeneration.

The forest habitat attributes listed above usually are present with increasing forest age, but their occurrence may vary by location, past forest management practices or natural disturbance events, forest-type productivity, and plant succession. These characteristics may also be observed in younger stands, especially when the stands contain remnant large trees or patches of large trees. Certain forest management practices may also enhance tree growth and mature stand characteristics where the older, larger trees are allowed to persist.

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions within the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

Description of the Action Area

Camp Navajo is located in the Colorado Plateau physiographic province. The Colorado Plateau consists of uplifted and tilted sedimentary layers and steep-sided valleys at elevations of 5,000 to 7,000 feet. Elevations at Camp Navajo range from 6,770 feet in Volunteer Canyon to 8,047 feet on Volunteer Mountain. Vegetation at Camp Navajo comprises three major plant communities derived from a mid-level vegetation classification, which includes pine, mixed grass, and Douglas fir-white fir. The pine vegetation community on Camp Navajo covers approximately 18,328 acres and is the most common vegetation type. The pine forest is dominated by ponderosa pine (*Pinus ponderosa*) and includes species such as Gambel oak (*Quercus gambelii*). The mixed conifer vegetation community on Camp Navajo covers approximately 690 acres. The dominant species in this vegetation community are Douglas fir (*Pseudotsuga menzeisii*) and white fir (*Abies concolor*). Other species include Gambel oak, Rocky Mountain snowberry (*Symphoricarpos rotundifolius*), juniper (*Juniperus* spp.), and blue spruce (*Picea pungens*). Subtypes of this vegetation include mixed-conifer dominated associations and mixed conifer-oak co-dominant associations.

The action area includes the entire installation and approximately a 0.25 mile buffer around the installation as noise from the action may impact the Volunteer Canyon PAC within and immediately adjacent to the installation.

A. Status of the species and critical habitat within the action area

The Volunteer Canyon PAC (# 040211) is located on the southern end of Camp Navajo, extending into the Coconino National Forest (the Coconino National Forest and AZARNG share management of the PAC). Designated critical habitat for the MSO is located along the southern portion of the installation, including most of Volunteer Canyon, and extends westward into the Coconino National Forest. Additional restricted habitat for the species occurs in the vicinity of Volunteer Mountain on the western portion of the installation.

MSO surveys of Camp Navajo have been conducted since 1997, primarily within the southern and western portions of the installation. Adult MSO and potential juveniles were heard within the PAC on Camp Navajo during the summer of 2000. MSO were located primarily along the rim and side drainages of Volunteer Canyon near the installation's southern boundary with the Coconino National Forest. MSO surveys conducted in the summers of 2002, 2003, and spring 2004 did not locate MSO in the OB/OD Area (Camp Navajo portion of the Volunteer Canyon PAC) or in suitable habitat within the installation. However, during the 2002 survey period, a large unidentified raptor was observed during night calling, and surveys in 2003 were not conducted to protocol due to logistical constraints. The most recent MSO surveys for Camp Navajo were conducted between May and August 2010 by the Arizona Game and Fish Department (AGFD). A pair of MSO was located in a secondary drainage of Volunteer Canyon, within the Volunteer Canyon PAC, on Camp Navajo.

The western edge of Camp Navajo contains restricted habitat in the Volunteer Mountain area and is located at the western edge of the project limits at Bellemont. A telemetry study in the fall of 1995 found that a dispersing juvenile MSO spent approximately two weeks in the immediate

vicinity of Volunteer Mountain (within the project area) before dispersing onto the Kaibab National Forest (Joe Ganey, Forest Service Experimental Station, Flagstaff, AZ, pers. comm., 1995). Therefore, the protected and restricted habitat within the Camp Navajo facility could serve as an important corridor for dispersing owls. Since that time, additional detections of owls near Volunteer Mountain seem to indicate that spotted owls use this area, though we have not been able to locate resident owls outside of the Volunteer Canyon PAC (which is located several miles to the south of Volunteer Mountain).

B. Factors affecting the species and critical habitat within the action area

The majority of area within the Camp Navajo installation boundary is managed by the military for national defense purposes including military training, storage, and maintenance. The cantonment area occupies approximately 1,350 acres (5 percent of the installation) and includes administrative, public works, warehouse, and utility service structures; the igloo storage, ammunition maintenance, and standard magazine areas occupy approximately 11,378 acres (40 percent); and, primary training/maneuver areas cover approximately 14,950 acres (53 percent). The Open Burn/Open Detonation Area that is closed to all activities covers approximately 694 acres (2 percent of the installation). Approximately 17,000 acres (60 percent of the installation) is covered in forest. Ongoing impacts from human activity in protected or restricted habitat that is likely disturbing MSO includes construction and use of small arms training ranges in the northern portion of the installation (see Consultation #22410-2004-F-0008), and ongoing fuels reduction treatments throughout the installation. To date, all projects associated with fuels reduction have resulted in insignificant and discountable effects to MSO (see Consultation #22410-2005-I-0187). However, the BO on the Camp Navajo Army Depot Firing Range Expansion Project (#22410-2004-F-0008) did result in our issuing an incidental take statement for dispersing MSO at Camp Navajo. We anticipated that two MSO would be taken as a result of that proposed action: one MSO would be taken due to harassment due to noise and/or habitat disturbance, and, although unlikely, we identified a constant threat that one MSO would be injured and/or killed as a result of impact from either rounds from weapons fired or shrapnel from ordnance explosion within the range. At this time, we have received no reports of any take that has occurred as a result of this action.

The largest portion of land surrounding Camp Navajo is undeveloped and administered by the U.S. Forest Service (Coconino and Kaibab National Forests), with a smaller portion of State Trust lands administered by the Arizona State Land Department. A small percentage of the surrounding land is privately held. The Burlington Northern Santa Fe Railway's railroad forms Camp Navajo's northern border, and Interstate 40 is located north of the railroad.

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration.

Indirect effects are those caused by the proposed action and are later in time, but are still reasonably certain to occur.

Effects on the MSO from the proposed action would include some habitat loss, habitat degradation, possible noise disturbance, and a very low likelihood of direct injury or mortality. Because portions of Camp Navajo are known to be utilized by resident and dispersing MSO, the analysis that follows assumes that MSO may be present at any time within the pine-oak and mixed-conifer forested habitat types that comprise protected, restricted, and designated critical habitat on the installation.

Habitat Effects

The proposed development of training ranges would require removal of trees (including some clear-cutting), construction of fire breaks, and construction of buildings, roads, and utilities that would lead to loss or degradation of MSO protected, restricted, and designated critical habitat within Camp Navajo (Table 2). Development of ranges that overlap with designated critical habitat and restricted habitat would have impacts that include reduction of trees, amount of downed wood, number of snags, and canopy cover on the proposed ranges that could affect the suitability forest composition as habitat for the MSO and for its prey species.

Table 2. Impacted Habitat of Mexican Spotted Owls from Proposed Ranges at Camp Navajo

| Type of MSO Habitat | Ranges | | Surface Danger Zone (SDZ) | | | |
|---------------------|---|----------------------|------------------------------|---|----------------------|--|
| | Ranges Affecting Habitat | Total Acres Affected | Acres of Affected Vegetation | SDZ Affecting Habitat | Total Acres Affected | Acres of Affected Vegetation |
| Critical Habitat | Infantry Platoon Battle Course*, Infantry Squad Battle Course*, Anti-armor Tracking/Light Armor | 124 (no PAC acres) | 87 Pine 37 Pine-Oak | Multi-purpose Machine Gun**, Infantry Platoon Battle Course**, Infantry Squad Battle Course** | 1,081 | 866 Pine 156 Mixed Grass 57 Mixed Conifer 2 Pine-Oak, Developed |
| PAC Habitat | N/A | 0 | 0 | Multi-purpose Machine Gun** | 119 | 68 Pine 51 Mixed Conifer < 0.1 Pine-Oak |
| Restricted habitat | Anti-armor Tracking/Light Armor, Urban Assault Range | 704 | 704 Pine-Oak | Multi-purpose Machine Gun** | 259 | 259 Pine-Oak |

NOTES: * Indicates overlapping ranges

** Indicates SDZ is shared by multiple ranges

New ranges or modifications to existing ranges would impact about 1,661 acres of land within Camp Navajo. Approximately 37 acres of critical habitat, 704 acres of restricted habitat, and 962 acres of other forest and woodland forest types would be occupied by the range footprints. Of this restricted habitat, 690 acres falls within the footprint of the Anti-Armor Tracking Range/Light Anti-Armor Range of which 10 acres will be clear cut (all trees removed). The construction activities associated with the proposed ranges would include grading of land to meet

safety standards, creation of target coffins in the appropriate ranges, thinning of trees and other vegetation, removal of vegetation for fire breaks, and some clear cutting. No mixed-conifer vegetation occurs within the developed ranges (only within SDZs); therefore, none of this habitat would be graded or cut as part of the proposed action.

Actions interrelated to the development of the ranges would involve construction of buildings for support functions at the ranges, installation or upgrading of utilities, construction of latrine facilities, and construction of new roads. Only the Anti-Armor Tracking Range/Light Anti-Armor Range and Urban Assault Course would have facilities that would be constructed in restricted habitat for the MSO. The Anti-Armor Tracking Range/Light Anti-Armor Range would involve construction of a single 1,000 square-foot support building and a single 200 square-foot latrine; the Urban Assault Course would involve the construction of 12 buildings approximately 640 square-feet each and a single 200 square-foot latrine. Also, approximately 3.7 miles of road are proposed for construction that would lead to these ranges. The construction of buildings would remove additional habitat for the MSO, roads could increase the opening of the forest canopy, and the installation of utilities would also require vegetation removal. Utilities would be buried and the trenches would be backfilled and re-vegetated; however, full recovery of the habitat from installation of utilities could take several decades. All other roads or support buildings for the other proposed ranges would likely occur in pure ponderosa pine forest or mixed-grass associations (which are not considered to be MSO nesting or roosting habitat).

Interdependent actions related to development of the ranges include the establishment of SDZs and construction, maintenance, and operation activities. As stated previously, SDZs are designated areas of ground and airspace around a firing range or training complex (to include associated safety areas) for vertical and lateral containment of projectiles, fragments, debris, and components resulting from the firing, launching, or detonation of weapon systems. Some ground disturbance would occur within SDZs, which would be caused by itinerant projectiles, fragments, or debris that can occasionally drift into these areas. No further development or alteration of vegetation is typically necessary in these areas, unless stray ordnance would cause an ignition and require fire suppression. Use of live ordnance on the Mortar Range may increase the likelihood of unplanned human-ignited fire affecting owl habitat. Normal maintenance of the vegetation to reduce the likelihood of wildland fire would continue in these areas. The proposed ranges would include SDZs that cover approximately 6,155 acres at Camp Navajo. Approximately 59 acres of critical habitat (including two acres that currently have development), 119 acres of the Volunteer Canyon PAC, and 259 acres of restricted habitat would be located within an SDZ.

Maintenance of ranges would include building maintenance and vegetation management within the ranges. Vegetation management would include maintaining fire breaks around ranges, removing overgrowth of vegetation next to buildings, and suppressing the growth of noxious weeds. The AZARNG uses a combination of prescribed burns and forest thinning practices to reduce the chances of stand-replacing fires at Camp Navajo. Studies are ongoing on how and where to best implement prescribed burns and thinning operations. The fire department on post, which is trained to fight both wildland and structural fires, coordinates prescribed burns and oversees the burning of piled slash from brush and tree thinning activities. Mechanical thinning may be used as an alternative to prescribed burning to manage vegetation in or near MSO

habitat. Camp Navajo will consult separately on the future thinning and burning projects, as they have done in the past.

Critical Habitat

Two proposed range footprints would overlap with designated critical habitat for the MSO at Camp Navajo. The Infantry Platoon Battle Course would include about 69 acres of critical habitat, and the Anti-Armor Tracking Range and part of the common area of the Infantry Squad Battle Course would include about 9 acres of critical habitat. Of the 124 acres of the impacted vegetation, 37 acres would occur in the ponderosa pine-oak forest.

SDZs that overlap with critical habitat involve a total of 1,081 acres, and approximately 147 of these acres are within the Volunteer Canyon PAC. The total impacted critical habitat includes 57 acres of the mixed conifer and 29 acres of the pine-oak forest. There are approximately 119 PAC acres that overlap with proposed SDZs.

Physical disturbance of habitat would affect some primary constituent elements for forest structure and maintenance of adequate prey species in these two ranges. Removal of trees for construction and maintenance of ranges could affect forest structure by reducing the shade canopy and could reduce the number of snags ≥ 12 inches diameter-at-breast height (dbh). However, Camp Navajo has committed to not removing trees greater than 9 inches dbh within the Volunteer Canyon PAC (which lies within designated critical habitat). Fallen trees, woody debris, and residual plant cover could be reduced by prescribed burns, fire breaks, and vegetation thinning, which could reduce the adequacy of habitat for prey species. Species composition would be highly manageable and should affect neither forest structure nor habitat for prey species. Canyon habitat would be unaffected by the ranges.

In summary, approximately 37 acres of critical habitat and 704 acres of restricted habitat would be degraded (key habitat components and primary constituent elements modified) or lost (clear-cutting of trees) by range development. Only 10 acres of habitat are expected to be completely clear-cut of all trees; however, range development would likely modify habitat and impede MSO use of these areas. In addition, 57 acres of critical habitat, 119 acres of the Volunteer Canyon PAC, and 259 acres of restricted habitat would be located within an SDZ. Habitat impacts from the establishment of SDZs should be minor, but there would be an increased chance for fire to impact these habitats as a result of training actions, particularly since fuels reduction treatments in portions of this habitat have yet to be completed.

Disturbance Effects

There are a growing number of studies attempting to describe and quantify the impacts of non-lethal disturbance on the behavior and reproduction of wildlife, and MSO in particular. Delaney *et al.* (1997) reviewed literature on the response of owls and other birds to noise and concluded the following: 1) raptors are more susceptible to disturbance-caused nest abandonment early in the nesting season; 2) birds generally flush in response to disturbance when distances to the source are less than approximately 200 feet and when sound levels are in excess of 95 dBA; and 3) the tendency to flush from a nest declines with experience or habituation to the noise,

although the startle response cannot be completely eliminated by habituation. Delaney *et al.* (1999) found that ground-based disturbances elicited a greater flush response than aerial disturbances. Our guidance is to limit potentially disturbing activities to areas ≥ 0.25 mile from MSO PACs during the breeding season (March 1 through August 31). This corresponds well with the Delaney *et al.*'s (1999) 0.25 mile threshold for alert responses to helicopter flights. In addition, Delaney *et al.* (1999) found that MSO did not flee from helicopters when caring for young at the nest, but fled readily during the post-fledgling period. This may be a result of optimal fleeing decisions that balance the cost-benefit of fleeing. Frid and Dill (2002) hypothesize that this may be explained using predator risk-disturbance theory, and perhaps the cost of an adult MSO fleeing during the nestling period may be higher than during the post-fledgling period.

MSO are likely to be affected by noise and visual disturbance associated with the Camp Navajo MTC-Light construction and training activities. Sound disturbance from training exercises could result in disturbance to dispersing and/or foraging MSO. Also, sound levels in the area in common with ranges, SDZs, and designated critical habitat during training exercises could exceed levels that are known to disturb MSO (Delaney *et al.* 1999). However, the conservation measures indicate that noise levels would be measured at the Volunteer Canyon MSO PAC boundary for activities on the Infantry Squad Battle Course, Infantry Platoon Battle Course, Convoy Live Fire Range, and Multi-Purpose Machine Gun Range and would be reduced to less than 90 dBA. In addition, current tree densities between the PAC boundary and the Infantry Squad Battle Course and Infantry Platoon Battle Course would be maintained if necessary to assist with reducing noise levels below 90 dBA at the PAC boundary.

Noise and visual disturbance associated with vehicular traffic and construction may disturb breeding and foraging behaviors of MSOs associated with the Volunteer Canyon PAC. Such disturbance may cause adults to flush from roosts, but will likely not be close enough to the PAC boundary to result in adults leaving a nest. In addition, MSO may avoid areas of construction, which could disrupt foraging habits and cause an increase in energy expenditure for a lower return on foraging success. This could, in turn, result in a decline in physical condition and could ultimately affect both the survival of adults and their young. Human disturbance can also act as a form of increased predation risk (Frid and Dill 2002).

Operation of ranges includes various levels of use that vary with the purpose of each individual range. The soldier use days range from a low of 160 to a high of 6,300 for training activities. Ranges that would operate in or near MSO restricted and critical habitat would use small arms that typically use 5.56 mm ammunition. This includes the Infantry Platoon Battle Course and Infantry Squad Battle Course, each of which would receive about 1,120 soldier use days. The Urban Assault Range, located within restricted pine-oak habitat on the eastside of the installation, uses 5.56 mm and 7.62 mm blank rounds only. The Anti-Armor Tracking Range uses a laser system for training, and the same range when used as the Light Anti-Armor Range uses a sub-caliber 9 mm training round. The noise from firearms utilized on these two ranges typically is about 160 dB at the shooter, which would attenuate from the firing point. However, these battle courses would not have a single firing point and the sound impact would vary from the firing location to any MSO location or habitat. The noise would exceed adverse levels only

where firing points are next to or near a nest, perch, roost, or foraging habitat but would attenuate with distance and obstructive vegetation.

Other ranges are likely far enough from suitable habitat to have little or no noise-related effect on MSO. The M203 Grenade Launcher Range-East and a portion of the M113 vehicle course lie close to a patch of restricted habitat in the southeastern part of the installation. This patch of habitat could be affected by both sound from weapons fire and vehicles, movement of vehicles through the area, or human activity associated with the ranges. Existing nearby disturbances in the Cinder Pit II, the small size of this habitat patch (approximately 300 acres), and its relative isolation likely currently preclude MSO from using this area for nesting and roosting.

Construction actions could include grading, tree removal, and construction of a fire break that also would involve noise disturbance and human disturbance. Maintenance activities would include upkeep of the firebreak. This area could also receive use during training exercises and could be subject to noise disturbance from firearms and disturbance from the presence of humans. Construction of ranges would require heavy earth-moving equipment, trucks, and tools for removal of trees. Impacts to MSO could come from increased human activity and noise from construction equipment that could provoke spotted owls to increase their alert response or flush from the sources of disturbance. SDZs also may experience elevated noise levels during construction of the surrounding ranges, but will likely later serve as a disturbance buffer zone for noise and activity disturbances.

Construction activities would occur adjacent to designated critical habitat and within a 0.25 mile the Volunteer Canyon PAC, but no actual construction would occur in these areas. Disturbances to this habitat in the future could include general vegetation maintenance that could be tailored to the needs of spotted owls to maintain forest structure and habitat for prey species, while also reducing the likelihood of stand-replacing fires (future work that would need additional consultation). Furthermore, the SDZs could receive stray ordnance and noise from the Infantry Squad Battle Course and Infantry Platoon Battle Course/Light Anti-Armor Range. Stray ordnance could come from 9 mm rounds used at the Light Anti-Armor range or 5.56 mm rounds used on the other two ranges. Noise emanating from the ranges should be attenuated greatly in the SDZ and within the Volunteer Canyon PAC.

In summary, the proposed action will result in minor noise disturbance to MSO associated with the Volunteer Canyon PAC. Initially, this disturbance may be the result of construction activities around the site, but all of the PAC acres within Camp Navajo lie within an SDZ for the Infantry Platoon, Convoy Live Fire, Infantry Squad Battle, Multi-Purpose Machine Gun Range, or Anti-Armor Tracking Range Courses. Such activities will likely result in some level of disturbance to MSO use of the Volunteer Canyon PAC and critical habitat in the southern portion of the installation.

Injury and/or Death

A very small potential exists for direct injury or death of owls from stray ordnance and vehicular traffic. Implementation of the proposed action may result in injury or death to MSO during use of the firing range for training exercises. Although a conservation measure has been

incorporated into the proposed action to visually scan a range prior to use, rounds from weapons fired within ranges may travel beyond established targets into portions of SDZs containing restricted and protected steep-slope habitat. MSO are most active at night and the proposed action will include night firing, which may increase the chance of a foraging or dispersing MSO being shot. However, the likelihood that a round would strike an MSO is extremely low. Vehicular traffic within the area will increase during range construction and operation; however, Camp Navajo has a 25 mph speed limit that should minimize the potential for vehicle-owl collisions.

MSO could be impacted to a small degree by lead poisoning from ordnance if it enters their prey populations. Small birds and small mammals can directly or incidentally consume lead shot, dust, and fragments (Kendall et al. 1996) and the MSO can eat prey with elevated lead levels in their blood. Animals killed with lead-based ammunition can retain dust and other small fragments that can in turn contaminate the consumer of those animals. However, the likelihood of these lead contamination scenarios occurring is extremely small. Users of the ranges are under strict orders to not shoot at wildlife, which would reduce the possibility of lead contamination in owl prey populations. Additionally, 5.56 mm ammunition exclusively used on the Infantry Platoon Battle Course and Infantry Squad Battle Course and most commonly on other ranges does not contain lead, which eliminates these areas as a source of contamination in and near MSO habitat. Other ranges that are more distant from MSO habitat do use ammunition or ordnance that could contain lead, which does allow for a small risk of lead poisoning of the MSO.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this BO. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Since the land within the project vicinity is almost exclusively managed by the AZARNG, most activities that could potentially affect listed species are Federal activities and subject to additional section 7 consultations. Future non-Federal actions within the project area that may be reasonably certain to occur include potential development of Arizona State Land Department lands and private land (56.8 acres) located adjacent to the southern boundary of Camp Navajo. These lands adjacent to Camp Navajo contain suitable habitat for the MSO. Development of these lands adjacent to Camp Navajo could reduce the suitability of currently occupied habitat and restricted habitat for the MSO at Camp Navajo. Increased human use of surrounding potential owl habitat could lead to habitat degradation (e.g., loss of key habitat components, loss of habitat), impacting the integrity of the habitat within Camp Navajo. In response to greater levels of human activity and increased noise levels, MSO may have reduced fitness and/or survival. Increased human development in these areas could also increase the likelihood of unplanned human-ignited fire affecting owl habitat within and adjacent to the facility. Development of these parcels of land may also result in higher volumes of vehicular traffic, which could increase the likelihood of collisions with owls.

CONCLUSION

After reviewing the current status of the MSO and its critical habitat, the environmental baseline for the action area, the effects of the proposed project, and the potential for cumulative effects, it is our biological opinion that implementation of the Camp Navajo MTC- Light Project, as proposed, is not likely to jeopardize the continued existence of the MSO or destroy or adversely modify its designated critical habitat.

This biological opinion does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statutory provisions of the Act to complete our analysis with respect to critical habitat.

We present this conclusion for the MSO and its critical habitat for the following reasons:

1. The project footprint is relatively small spatially and though it will result in habitat modification to approximately 731 acres of critical and restricted habitat and loss of 10 acres of restricted habitat, impacts to habitat in the Volunteer Canyon PAC are small and will maintain the integrity of nesting/roosting habitat in the PAC. In addition, the impacts to critical habitat will not significantly reduce its ability to remain functional and continue to serve its intended conservation role for the MSO.
2. Project-related construction and training noise may result in disturbance to MSO at Camp Navajo. However, the effort to keep sound below 90dBA at the PAC boundary and management of SDZs to buffer noise (e.g., maintaining more trees) near the Volunteer Canyon PAC will result in reduced long-term noise impacts to MSO.
3. The implementation of the proposed action is not expected to impede the survival or recovery of MSO within the Upper Gila Mountains RU as a very small amount of MSO habitat will be removed and/or modified relative to the amount of habitat available in the RU.

The conclusions of this biological opinion are based on full implementation of the project as described in the Description of the Proposed Action section of this document, including any Conservation Measures that were incorporated into the project design.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. “Harm” is further defined (50 CFR 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. “Harass” is defined (50 CFR 17.3) as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. “Incidental take” is defined as

take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

Amount or Extent of Take Anticipated

Using available information as summarized within this document, we have identified conditions of possible effects on the MSO associated with implementation of the Camp Navajo MTC-Light Project to both resident and dispersing MSO within the installation. However, as described above under “Factors affecting the species and critical habitat in the action area”, we considered the incidental take from training activities that we have already anticipated at the Volunteer PAC in Camp Navajo (see Camp Navajo Army Depot Firing Range Expansion Project, Consultation #22410-2005-F-0008). The effects from the operation of additional ranges considered in this biological opinion are difficult to separate from the effects of the entire training mission at Camp Navajo, which was considered in the Firing Range Expansion consultation. Based on the best available information concerning the MSO, habitat needs of the species, the project description, and information furnished by the Camp Navajo, we do not believe that the construction activities and increased training use on the installation in this proposed action are reasonably certain to result in incidental take beyond that which we have already anticipated for these spotted owls at Camp Navajo. We believe that Camp Navajo has proposed conservation measures that will minimize adverse effects to MSO associated with the Volunteer PAC and that the take is not likely to increase beyond what has already been anticipated for dispersing MSO at Camp Navajo.

We do not anticipate that incidental take is reasonably certain to result from the proposed action.

DISPOSITION OF DEAD, INJURED, OR SICK MSO

Upon locating a dead, injured, or sick listed species initial notification must be made to the FWS's Law Enforcement Office, 2450 W. Broadway Rd, Suite 113, Mesa, Arizona, 85202, telephone (480) 967-7900, within three working days of its finding. Written notification must be made within five calendar days and include the date, time, and location of the animal, a photograph if possible, and any other pertinent information. The notification shall be sent to the Law Enforcement Office with a copy to this office. Care must be taken in handling sick or injured animals to ensure effective treatment and in handling dead specimens to preserve the biological material in the best possible state.

If possible, the remains of intact species shall be provided to this office. If the remains of the species are not intact or are not collected, the information noted above shall be obtained and the carcass left in place. Injured animals should be transported to a qualified veterinarian by an authorized biologist. Should the treated species survive, contact our office regarding the final disposition of the animal.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. We recommend that the AZARNG work with us, Coconino County, AGFD, the Naval Observatory Flagstaff Station, and other partners to purchase State Trust Lands to ensure conservation of MSO habitat in areas adjacent to Camp Navajo.
2. We recommend that the AZARNG work with us to develop fuels reduction and prescribed burning treatments across the installation to protect MSO habitat from human and/or naturally-ignited wildland fire and increase habitat sustainability.

REINITIATION NOTICE

This concludes formal consultation on the action outlined in this biological opinion. As provided in 50 CFR Section 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your continued coordination. We also encourage you to coordinate the review of this project with the Arizona Game and Fish Department. In all future correspondence on this project, please refer to the consultation number 22410-2009-F-0126. Should you require further assistance or if you have any questions, please contact Shaula Hedwall at (928) 226-0614 (x103) or Brenda Smith (x101) of our Flagstaff Suboffice.

Sincerely,

/s/ Brenda Smith for

Steven L. Spangle
Field Supervisor

cc (electronic):

Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ

Field Supervisor, Arizona Game and Fish Department, Region 2, Flagstaff, AZ
Natural Resource Manager-Wildlife Biologist, Camp Navajo, Bellemont, AZ

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APPENDIX A – TECHNICAL ASSISTANCE

This appendix contains recommendations to AZARNG to reduce the likelihood of take of bald eagles (*Haliaeetus leucocephalus*) from implementation of the MTC-Light Project. There are no known golden eagles (*Aquila chrysaetos*) within the project area.

The final rule to remove the bald eagle from the Federal List of Threatened and Endangered Species was published in the Federal Register on July 9, 2007, and took effect on August 8, 2007. However, bald and golden eagles continue to be protected by the Bald and Golden Eagle Protection Act (Eagle Act). The Eagle Act prohibits anyone, without a permit issued by the Secretary of the Interior, from taking eagles, including their parts, nests, or eggs. “Take” is defined under the Eagle Act as “to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb” eagles. Disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based upon the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior (USDI 2007).

AZARNG and FWS jointly developed the following conservation measures to minimize impacts to wintering bald eagles in the project area. There are no nesting bald eagles on the installation or within approximately 15 to 20 miles straight-line distance. These measures are consistent with the strategies identified in the Conservation Assessment and Strategy for the Bald Eagle in Arizona (Driscoll et al 2006). We agree that implementation of the following measures will reduce the likelihood of take.

Bald eagle

1. All activities that may disturb bald eagle roost and forage sites within Camp Navajo would be avoided when feasible. Specifically, potentially disturbing activities within the proposed ranges would be minimized when possible from October 15 to April 15.
2. During winter months, when bald eagles are present in the area, activities at the proposed ranges would take place between 1000 and 1600 hours, when possible, to minimize potential disturbance of roosting bald eagles.
3. Winter raptor surveys would continue on a yearly basis. These surveys would assist in determining the presence of bald eagles and locating potential roost sites.
4. Prior to any range use, a visual scan of the range would be made for the presence of large raptors, including bald eagles. Trained personnel would conduct these searches. If large raptors are observed during initial scan of the range area, the Camp Navajo Natural Resources Specialist would be notified and activities would be halted until the species are identified and activities are cleared to proceed. If no large raptors are observed prior to range use, activities would proceed as planned.

5. If a winter roost site is in the vicinity of the range complex (including SDZs), bald eagles at the site would be monitored during range use to determine the effects of noise and military activity. The AZARNG would continue to analyze winter raptor and breeding bird survey data to determine patterns of habitat use within the action area and implement beneficial management actions.
6. Targets on firing ranges would be configured to avoid large-diameter trees and snags.
7. Trees left within proposed firing ranges would be monitored to assess long-term damage from training rounds. A monitoring program for forested areas within proposed ranges and SDZs may also be established to assess forest reproduction and recruitment. Monitoring would be conducted under the Land Condition Trend Analysis component of the AZARNG Integrated Training Area Management Program.
8. Roadways, staging areas, and other areas disturbed during construction activities that would not be needed for the proposed ranges would be re-vegetated with native plant species.
9. Mechanical thinning and prescribed burning within the firebreak perimeters would be conducted to minimize the risk of wildfire spreading to bald eagle roosting habitat.

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