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December 7, 2012

Memorandum

To: Field Manager, Bureau of Land Management, Tucson, Arizona
(Attn: Brian Bellew)

From: Field Supervisor

Subject: Final Biological Opinion and Conference Report for Ironwood Forest National Monument (IFNM) Resource Management Plan, Pima and Pinal Counties, Arizona

Thank you for your request, dated June 6, 2012 and received by us on June 7, 2012, 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), for the proposed Ironwood Forest National Monument (IFNM) Resource Management Plan (RMP) for lands located in Pima and Pinal counties, Arizona. In your biological assessment (BA), BLM determined that the proposed action “may affect, and is likely to adversely affect” lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*)(LLNB) and Nichol Turk’s head cactus (*Echinocactus horzonthalonius* var. *nicholii*)(NTHC). You also address the experimental, non-essential, population of Sonoran pronghorn (*Antilocapra americana sonoriensis*)(SPH), which is evaluated as a proposed species for purposes of section 7 consultation through a conference report (Appendix A).

Your BA also considers effects of the RMP to two candidate species: Tucson shovel-nosed snake (*Chionactis occipitalis klauberi*)(TSNS) and the Sonoran population of desert tortoise (*Gopherus morafki*)(DT). Technical assistance for these species is provided as Appendix B.

This draft biological opinion and conference report is based on information provided in the “Ironwood Forest National Monument Resource Management Plan Biological Assessment,” dated June 2012 (BA), the “Ironwood Forest National Monument Proposed Resource Management Plan and Final Environmental Impact Statement,” dated September 2011 (FEIS), and other sources of information. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern, and its effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

CONSULTATION HISTORY

April 2004-June 2011:	Pre-consultation during development of RMP
July 2011- June 2012:	Early-consultation during development of BA
June 7, 2012:	Formal consultation requested, BA received
June 26, 2012:	We sent a 30-day letter advising of initiation of formal consultation
September 11, 2012	E-mail request for clarification regarding fire related and NTHC conservation measures
September 13, 2012	We received BLM response regarding fire related and NTHC conservation measures
October 28, 2012	E-mail request for clarification regarding livestock water
October 29, 2012	We received BLM response regarding livestock water
October 11, 2012	Request for extension
October 16, 2012	Conference call to discuss extension until end of November 2012
November 29, 2012:	We sent a draft Biological Opinion and Conference Report to BLM and requested an additional extension to provide for BLMs review.
December 3, 2012	Comments on draft Biological Opinion and Conference Report received from BLM.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The BLM proposes to implement the RMP for the IFNM (Figure 1) for twenty years. This RMP would allocate resources and identify decisions related to air quality, geology and cave resources, soil and water resources, vegetation, wildlife and wildlife habitat, special status species, fire ecology and management, cultural resources, paleontological resources, scenic and visual resources, wilderness characteristics, energy and mineral resources, livestock grazing, recreation, lands and realty, travel management, and special designations. The IFNM was established on June 9, 2000, by Presidential Proclamation 7320 (Office of the President 2000) to protect objects of scientific interest, including geological, biological, and archaeological resources. The IFNM boundary encompasses approximately 189,600 acres of land in Pima and Pinal counties, Arizona. Approximately 128,400 acres within the monument boundaries are administered by BLM, approximately 54,700 acres by the Arizona State Land Department (ASLD), and approximately 6,000 acres are privately owned (Figure 1).

Appendix C includes portions of the Project Description in the BA pertinent to fire suppression, livestock grazing and recreation. On IFNM, wildfires would be managed to maintain natural vegetation composition, structure, and function with a priority on safety for firefighters and the public. The management actions for fire ecology and management include the conservation measures found in the “Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management” (BLM 2004). All public lands within 11 allotments on IFNM (approximately 128,400 acres) are available for grazing. Livestock grazing on the IFNM is authorized at levels in the “Record of Decision for the Phoenix District Portion of the Eastern Arizona Grazing Environmental Impact Statement and Rangeland Program Summary” (BLM 1987) and in the “Programmatic Biological Opinion for the Safford/Tucson Office’s Livestock Grazing Program” (consultation 2-21-96-F-160). Management and monitoring of livestock grazing would be consistent with the Arizona Standards for Rangeland Health and Guidelines for Grazing Administration (BLM 1997), and with protection of monument objects. An emphasis would be placed on producing semi-primitive non-motorized recreation opportunities while continuing to provide semi-primitive motorized, roaded natural, and primitive recreation opportunities. Recreation management zones (RMZs) would be allocated including: semi-primitive non-motorized 57,450 acres, semi-primitive motorized, 36,230 acres, roaded natural 18,380 acres, primitive 9,510 acres, Ragged Top Watchable Wildlife (primitive) 6,780 acres.

Elements of the RMP that could have effects on LLNB include:

- Implementation of the range management program including livestock grazing and construction or maintenance of range improvement projects, including fence lines, pipelines, water sources, and vegetation management. Effects of the livestock grazing program were addressed in consultation 02-21-96-F-160.
- Implementation of fire suppression activities including creation of fire lines, back burning operations, construction of roads, or fire retardant drops. Effects of fire suppression were addressed in consultation 02-21-03-F-0210 on the BLM Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management (BLM 2004), and are incorporated into this consultation.
- Implementation of the recreation management program including designation of 18,380 acres of public land as roaded natural, 36,230 acres as semi-primitive motorized, and 57,540 acres as semi-primitive non-motorized use, 6,780 as the Ragged Top Wildlife Viewing Area, and 9,510 acres as primitive.

Conservation oriented elements of the RMP that affect LLNB or its habitat include:

- Implementation of Land Health Evaluations using Standards and Guidelines and consideration of a full range of management options if monitoring or other data indicate that a change is appropriate.
- Site selection for new livestock waters would be subject to site specific evaluation to ensure any adverse impacts are avoided or minimized. Potential impacts would be mitigated by site specific review, application of conservation policies and subsequent compliance with the Act.

- Conservation measures included in the project description in the Biological and Conference Opinion for the BLM Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management (BLM 2004) (02-21-03-F-0210) would be implemented. Resource advisors would be present on all fires on IFNM, no prescribed burning would be authorized, and no non-native species would be seeded or planted where paniculate agaves or saguaro are present.
- The RMP emphasizes balancing of motorized and non-motorized recreation uses, giving priority to minimizing or mitigating impacts on sensitive resources through the designation of specific recreation management zones (RMZs) and restricting overnight vehicle-based camping to limited campsites and constraining large group camping to three identified sites.

Elements of the RMP that could have effects on NTHC include:

- Implementation of the range management program including livestock grazing and construction or maintenance of range improvement projects, including fence lines, pipelines, water sources, and vegetation management. Effects of the livestock grazing program were addressed in consultation 02-21-96-F-160. On IFNM, NTHC are found on the Agua Dulce Allotment, a perennial allotment, which includes a total of 18,021 acres with 16,144 BLM acres, which are managed as perennial with 814 assigned animal unit months (AUMs) under a rest rotation system.
- Implementation of fire suppression activities including creation of fire lines, back burning operations, construction of roads, or fire retardant drops. Effects of fire suppression were addressed in consultation 02-21-03-F-0210 and carried forward in this consultation.
- Implementation of the recreation management program including designation of 18,380 acres of public land as roaded natural and 36,230 acres as semi-primitive motorized and non-motorized use.

Conservation oriented elements of the RMP that affect NTHC or its habitat include:

- Management of 2,240 acres of NTHC habitat on BLM administered public land as the Waterman Mountains Vegetation Habitat Management Area (VHA) for the protection of this species (Figure 2). Within Waterman Mountains VHA BLM would: prohibit land use authorizations except along routes designated for motorized use; acquire non-Federal land, which upon acquisition, would be managed as part of the VHA; and revise and implement the “Nichol Turk’s Head Cactus Habitat Management Plan,” dated 1986 (HMP).
- Implementation of Land Health Evaluations using Standards and Guidelines and consideration of a full range of management options if monitoring or other data indicate that a change is appropriate.
- Additional livestock water sources would be placed away from existing populations of NTHC.

- Conservation measures included in the project description in the Biological and Conference Opinion for the BLM Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management (02-21-03-F-0210) will continue to be implemented. Resource advisors would be present on all fires on IFNM, no prescribed burning would be authorized, and the restriction of non-native species seeded or planted where paniculate agaves or saguaro are present (generally overlapping the range of NTHC on IFNM).
- The RMP emphasizes balancing of motorized and non-motorized recreation uses, giving priority to minimizing or mitigating impacts on sensitive resources through the designation of specific recreation management zones (RMZs) and restricting overnight vehicle-based camping to limited campsites and constraining large group camping to three identified sites. The three dispersed vehicle accessible campsites in the Waterman VHA are more than 0.25 mi. from NTHC.
- Requiring all wood for campfires to come from outside sources.
- Target shooting would be prohibited within the IFNM.
- BLM will work to acquire non-BLM lands in the Waterman VHA which, on acquisition, will become part of IFNM and the VHA.

STATUS OF THE SPECIES

LESSER LONG-NOSED BAT

A. Species Description

The LLNB is a medium-sized, leaf-nosed bat. It has a long muzzle and a long tongue, and is capable of hover flight. These features are adaptations for feeding on nectar from the flowers of columnar cacti (e.g., saguaro [*Cereus giganteus*]; cardon [*Pachycereus pringlei*]; and organ pipe cactus (*Stenocereus thurberi*) and from paniculate agaves (e.g., Palmer's agave [*Agave palmeri*]) (Hoffmeister 1986). The LLNB was listed (originally, as *Leptonycteris sanborni*; Sanborn's long-nosed bat) as endangered in 1988 (USFWS 1988). No critical habitat has been designated for this species. A recovery plan was completed in 1995 (USFWS 1997). Loss of roost and foraging habitat, as well as direct taking of individual bats during animal control programs, particularly in Mexico, have contributed to the current endangered status of the species. Recovery actions include roost monitoring, protection of roosts and foraging resources, and reducing existing and new threats. The recovery plan states that the species will be considered for delisting when three major maternity roosts and two post-maternity roosts in the U.S., and three maternity roosts in Mexico have remained stable or increased in size for at least five years. A five-year review has been completed and recommends downlisting to threatened (USFWS 2007).

B. Distribution and Life History

The LLNB is migratory and found throughout its historical range, from southern Arizona and extreme southwestern New Mexico, through western Mexico, and south to El Salvador. It has been recorded in southern Arizona from the Picacho Mountains (Pinal County) southwest to the Agua Dulce Mountains (Pima County) and Copper Mountains (Yuma County), southeast to the Peloncillo Mountains (Cochise County), and south to the international boundary.

Within the U.S., habitat types for the LLNB include Sonoran Desert scrub, semi-desert and plains grasslands, and oak and pine-oak woodlands. Farther south, the LLNB occurs at higher elevations. Maternity roosts, suitable day roosts, and concentrations of food plants are all critical resources for the LLNB. The factors that make roost sites useable have not all been identified, but maternity roosts tend to be very warm and poorly ventilated (USFWS 1997). Such roosts reduce the energetic requirements of adult females while they are raising their young (Arends *et al.* 1995).

Roosts in Arizona are occupied from late April to September (Cockrum and Petryszyn 1991) and on occasion, as late as November (Sidner 2000); the LLNB has only rarely been recorded outside of this time period in Arizona (USFWS 1997, Hoffmeister 1986, Sidner and Houser 1990). In spring, adult females, most of which are pregnant, arrive in Arizona and gather into maternity colonies in southwestern Arizona. These roosts are typically at low elevations near concentrations of flowering columnar cacti. After the young are weaned these colonies mostly disband in July and August; some females and young move to higher elevations, primarily in the southeastern parts of Arizona near concentrations of blooming paniculate agaves. Adult males typically occupy separate roosts forming bachelor colonies. Males are known mostly from the Chiricahua Mountains and the Galiuro Mountains (T. Snow, pers. comm. Arizona Game and Fish Department, 1999) but also occur with adult females and young of the year at maternity sites (USFWS 1997). Throughout the night between foraging bouts, both sexes will rest in temporary night roosts (Hoffmeister 1986).

LLNB appear to be opportunistic foragers and extremely efficient fliers. They are known to fly long distances from roost sites to foraging sites. Night flights from maternity colonies to foraging areas have been documented in Arizona at up to 25 miles and in Mexico at 25 miles and 36 miles (one way) (Ober *et al.* 2000, Dalton *et al.* 1994, Lowery *et al.* 2009). Lowery *et al.* 2009 and Steidl (personal communication, 2001) found that typical one-way foraging distance for bats in southeastern Arizona is roughly 6 to 18 miles. A substantial portion of the LLNB at the Pinacate Cave in northwestern Sonora (a maternity colony) fly 25-31 miles each night to foraging areas in OPCNM (USFWS 1997). Horner *et al.* (1990) found that LLNB commuted 30-36 miles round trip between an island maternity roost and the mainland in Sonora; the authors suggested these bats regularly flew at least 47 miles each night. LLNB have been observed feeding at hummingbird feeders many miles from the closest known potential roost site (Lowery *et al.* 2009).

LLNB, which often forage in flocks, consume nectar and pollen of paniculate agave flowers and the nectar, pollen, and fruit produced by a variety of columnar cacti. Nectar of these cacti and agaves is high energy food. Concentrations of some food resources appear to be patchily distributed on the landscape, and the nectar of each plant species used is only seasonally available. Cactus flowers and fruit are available during the spring and early summer; blooming agaves are available primarily from July through October. In Arizona, columnar cacti occur in

lower elevational areas of the Sonoran Desert region, and paniculate agaves are found primarily in higher elevation desert scrub areas, semi-desert grasslands and shrublands, and into the oak and pine-oak woodlands (Gentry 1982). LLNB are important pollinators for agave and cacti, and are important seed dispersers for some cacti.

C. Status and Threats

Recent information indicates that LLNB populations appear to be increasing or stable at most Arizona roost sites identified in the recovery plan (AGFD 2005, Tibbitts 2005, Wolf and Dalton 2005, USFWS 2007). LLNB populations additionally appear to be increasing or stable at other roost sites in Arizona and Mexico not included for monitoring in the recovery plan (Sidner 2005, AGFD 2009). Less is known about LLNB numbers and roosts in New Mexico. Though LLNB populations appear to be doing well, many threats to their stability and recovery still exist, including excess harvesting of agaves in Mexico; collection and destruction of cacti in the U.S.; conversion of habitat for agricultural and livestock uses, including the introduction of buffleggrass, a non-native, invasive grass species; wood-cutting; alternative energy development (wind and solar power); cross border violator (CBV) activities and required law enforcement activities; drought and climate change; fires; human disturbance at roost sites; and urban development.

Approximately 20 – 25 large LLNB roost sites, including maternity and late-summer roosts, have been documented in Arizona. Of these, 10 – 20 are monitored on an annual basis depending on available resources (USFWS 2007). Monitoring in Arizona in 2004 documented approximately 78,600 LLNB in late-summer roosts and approximately 34,600 in maternity roosts. More recently, in 2008, the numbers were 63,000 at late-summer roosts and 49,700 at maternity roosts (AGFD 2009). Ten to 20 LLNB roost sites in Mexico are also monitored annually. Over 100,000 LLNB are found at just one natural cave at the Pinacate Biosphere Reserve, Sonora, Mexico (Cockrum and Petryszyn 1991). The numbers above indicate that although a relatively large number of LLNB exist, the relative number of known large roosts is quite small.

The primary threat to LLNB is roost disturbance or loss. The colonial roosting behavior of this species, where high percentages of the population can congregate at a limited number of roost sites, increases the risk of significant declines or extinction due to impacts at roost sites. Some of the most significant threats known to LLNB roost sites are impacts resulting from use and occupancy of these roost sites by CBVs. Mines and caves, which provide roosts for LLNB, also provide shade, protection, and sometimes water, for border crossers. The types of impacts that result from illegal border activities include disturbance from human occupancy, lighting fires, direct mortality, accumulation of trash and other harmful materials, alteration of temperature and humidity, destruction of the roost itself, and the inability to carry out conservation and research activities. These effects can lead to harm, harassment, or, ultimately, roost abandonment (USFWS 2005). For example, the illegal activity, presumably by CBVs, at the Bluebird maternity roost site, caused bats to abandon the site in 2002, 2003, and 2005. Other reasons for disturbance or loss of bat roosts include the use of caves and mines for recreation; the deliberate destruction, defacing or damage of caves or mines; roost deterioration (including both buildings or mines); short or long-term impacts from fire; and mine closures for safety purposes. The presence of alternate roost sites may be critical when this type of disturbance occurs.

Fires in 2005 affected some LLNB foraging habitat, though the extent is unknown. For example, the Goldwater, Aux, and Sand Tank Fire Complexes on BMGR-East burned through and around

isolated patches of saguaros. Rogers (1985) documented that saguaros are not fire-adapted and suffer a high mortality rate as a result of fire. Therefore, fire can significantly affect forage resources for LLNB in the Sonoran desert. Monitoring of saguaro mortality rates should be done to assess the impacts on potential LLNB foraging habitat. Fire suppression activities associated with the 2005 fires could also have affected foraging habitat. For example, slurry drops may have left residue on saguaro flowers, which could have impacted LLNB feeding efficiency or resulted in minor contamination.

Drought may affect LLNB foraging habitat, though the effects of drought on bats are not well understood. The drought in 2004 resulted in near complete flower failure in saguaros throughout the range of LLNB. During that time however, in lieu of saguaro flowers, LLNB foraged heavily on desert agave (*Agave deserti*) flowers, an agave species used less consistently by LLNB (Tibbitts 2006). Similarly, there was a failure of the agave bloom in southeastern Arizona in 2006, probably related to the ongoing drought. As a result, LLNB left some roosts earlier than normal and increased use of hummingbird feeders by LLNB was observed in the Tucson area. Climate change impacts to the LLNB in this portion of its range likely include loss of forage resources. Of particular concern is the prediction that saguaros, the primary LLNB forage resource in the Sonoran Desert, will decrease or even disappear within the current extent of the Sonoran Desert as climate change progresses (Weiss and Overpeck 2005). Monitoring bats and their forage during drought years is needed to better understand the effects of drought on this species.

The LLNB recovery plan (USFWS 1997) identifies the need to protect roost habitats and foraging areas and food plants, such as columnar cacti and agaves. The LLNB recovery plan provides specific discussion and guidance for management and information needs regarding bat roosts and forage resources (USFWS 1997). More information regarding the average size of foraging areas around roosts would be helpful to identify the minimum area around roosts that should be protected to maintain adequate forage resources.

We have produced numerous biological opinions on the LLNB since it was listed as endangered in 1988, some of which anticipated incidental take. Incidental take has been in the form of direct mortality and injury, harm, and harassment and has typically been only for a small number of individuals. Because incidental take of individual bats is difficult to detect, incidental take has often been quantified in terms of loss of forage resources, decreases in numbers of bats at roost sites, or increases in proposed action activities.

Examples of more recent biological opinions that anticipated incidental take for LLNB are summarized below. The 2008 biological opinion for implementation of the *SBI*net Tucson West Project, including the installation, operation, and maintenance of communication and sensor towers and other associated infrastructure, included incidental take in the form of 10 bats caused by collisions with towers and wind turbine blade-strike mortality for the life (presumed indefinite) of the proposed action. The 2007 biological opinion for the installation of one 600 kilowatt wind turbine and one 50KW mass megawatts wind machine on Fort Huachuca included incidental take in the form of 10 bats caused by blade-strikes for the life (presumed indefinite) of the proposed action. The 2005 biological opinion for implementation of the Coronado National Forest Land and Resource Management Plan (U.S. Forest Service) included incidental take in the form of harm or harassment. The amount of take for individual bats was not quantified; instead take was to be considered exceeded if simultaneous August counts (at transitory roosts in Arizona, New Mexico, and Sonora) drop below 66,923 LLNB (the lowest number from 2001 – 2004 counts) for a period of two consecutive years as a result of the action. The 2004 biological

opinion for the Bureau of Land Management Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management included incidental take in the form of harassment. The amount of incidental take was quantified in terms of loss of foraging resources, rather than loss of individual bats. The 2003 biological opinion for MCAS–Yuma Activities on the BMGR included incidental take in the form of direct mortality or injury (five bats every 10 years). Because take could not be monitored directly, it was to be considered exceeded if nocturnal low-level helicopter flights in certain areas on the BMGR increased significantly or if the numbers of bats in the Agua Dulce or Bluebird Mine roosts decreased significantly and MCAS-Yuma activities were an important cause of the decline. The 2002 biological opinion for Department of the Army Activities at and near Fort Huachuca (Fort), Arizona anticipated incidental take in the form of direct mortality or injury (six bats over the life of the project), harassment (20 bats per year), and harm (10 bats over the life of the project).

The LLNB recovery plan (USWS 1997), listing document (USFWS 1988), and the 5-year review summary and evaluation for the LLNB (USFWS 2007); all discuss the status of the species, threats, and are incorporated by reference.

Nichol Turk’s Head Cactus

Description

NTHC is a small, blue-green to gray-green barrel cactus with a single columnar stem that reaches approximately 1.5 feet in height and is 8 inches in diameter (AGFD 1999). It has bright pink to red flowers and fruits that are covered with woolly white hairs. There are commonly eight ribs on the plants, and a spiral on the trunk of mature plants. Each areole consists of three robust central spines and five radial spines (AGFD 1999). The cactus invariably has a single stem, but often several seedlings grow around its base, giving the appearance of small clumps (AGFD 1999). The NTHC begins flowering in late April and continues through mid-July with an occasional plant flowering as late as November (AGFD 1999). Plant growth occurs primarily from March through May (AGFD 1999).

Status

The NTHC was listed as endangered (44 FR 61929) on October 26, 1979. Critical habitat has not been designated for this species. A recovery plan for the NTHC was completed in April 1986 (USFWS 1986). Future downlisting of NTHC to threatened status would require permanent protection of 75 percent of the known habitat according to the steps outlined in the recovery plan (USFWS 1986). The downlisting criteria would be re-evaluated for adequacy upon attainment, or when data indicate that the criteria for down listing can be revised. The criteria for delisting have not been established. In March 1986, BLM completed the “Nichol Turk’s Head Cactus Habitat Management Plan” (HMP), which identified the following management objectives: (1) protect the habitat, (2) provide optimum habitat for naturally occurring populations of NTHC on approximately 2,370 acres of BLM-administered land, and (3) assist in the recovery of this taxon (USFWS 1986).

Reason for Listing

NTHC was listed because the species is threatened by destruction of habitat. Mining, off-highway vehicle use, urban development, illegal collection, and damage from target shooting, are threats to the NTHC (USFWS 1986). Off highway vehicle used associated with cross border

violators (CBV) and associated law enforcement and increasing fire risk from establishment on non-native buffleggrass (*Pennisetum ciliare*) are now also recognized as threats (USFWS 2009).

Range

NTHC is presently known from three areas in south-central Arizona: the Waterman Mountains and Koht Kohl Hills in Pima County, and the Vekol Mountains in Pinal County (USFWS 2009). The Sierra del Viejo in northeastern Sonora, Mexico, represents a fourth known locality for NTHC (Yatskievych and Fisher 1984). The total distribution of this species is not yet completely delineated. In the United States, available data indicate that the species occurs on land administered by BLM, the Bureau of Indian Affairs, the Tohono O'odham Indian Reservation (TON), the State of Arizona, and privately owned land (USFWS 1986). In the IFNM planning area, NTHC occurs only in the Waterman Mountains, where individuals are patchily distributed. A population of several acres on a ridge near the Silver Hill Mine is the only place on the IFNM where the plant was considered abundant (Dimmitt *et al.* 2003). Other populations occur on a nearly level bajada and south-facing slope near the Harlow Jones Airstrip that extends along most of the northeast bajada of the main Waterman Range (Dimmitt *et al.* 2003). Further undiscovered populations may also grow in the Santa Rosa, Cimarron, Brownell, Sierra Blanca, and Growler mountains in Pima County, and the Slate Mountains and Vaiva Hills in Pinal County (AGFD 1999).

Habitat

NTHC grows at elevations from 2,000 to 4,000 feet on dissected alluvial fans of mountain toeslopes and on the inclined mountain slopes themselves. This cactus is restricted to soils derived from limestone (USFWS 1986). In the Waterman Mountains, this cactus species occurs primarily on the Pennsylvanian aged Horquilla Limestone, the Permian Earp Formation, the Permian Concha Limestone, and the Mississippian Escabroasa Limestone (USFWS 1986). Most of the populations are on Quaternary alluvium derived from the adjacent bedrock; however, some of the populations grow on bedrock terraces and saddles of the Waterman Mountains. On the alluvial fan sites within the IFNM, the cactus grows in dendritic patterns along the edges of washes. Plants growing in montane habitats occur in places with more exposed rock than those on the alluvial fans (USFWS 1986).

Plants are typically found in open areas with few trees or shrubs. Regardless of whether or not limestone soils are present, the cactus is less abundant at the base of the alluvial fans where canopy cover of trees and shrubs increases. Individuals at the base of alluvial fans grow, flower, and survive at lower rates than plants higher up on the bajadas where less cover occurs (AGFD 1999, USFWS 1986). Dominant plant species associated with NTHC include foothill paloverde (*Parkinsonia mircophyllum*), triangle-leaf bursage (*Ambrosia deltoidea*), white ratany (*Krameria grayi*), brittlebush (*Encelia farinosa*), prickly pear cactus (*Opuntia* spp.), saguaro (*Carnegiea gigantea*), ocotillo (*Fouquieria splendens*), and cholla (*Cylindropuntia* spp.).

Population Status

Between 1981 and 2006, counts of individual cacti were reported by the BLM, consultants, and other individuals conducting surveys or searches for the cacti in the Waterman Mountains and on the TON. A preliminary count based on a compilation of the survey results in Arizona indicate there may be less than 2,000 individuals in the Waterman Mountains area and less than 1,000 on

the TON (Bainbridge and Wiens 1991, Kendall 1998, Schmalzel and Francisco 2000). No estimate exists for the Mexican population (USFWS 2009). Survey efforts have been inconsistent among surveyors without standardized survey protocols and the entire available habitat was not surveyed during each survey, making it impossible to determine the population size in the Waterman Mountains or on the TON (USFWS 2009).

Based on monitoring of plots (McIntosh *et al.* 2007) the largest population of NTHC is approximately 175 to 298 plants on the south-central slopes of the Waterman Mountains although monitoring also documented apparent drought mortality (USFWS 2009). Blading of a landing strip removed an estimated 350 plants in the early 1980s, and illegal collecting of plants by individuals and institutions has been well documented and has caused further losses in the Waterman Mountains (USFWS 1986).

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 in 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.

A. STATUS OF THE SPECIES WITHIN THE ACTION AREA

The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR §402.02).

Lesser Long-nosed Bat

For LLNB the action area is the IFNM planning area boundary (Figure 1). The action area represents only a small portion of the LLNB's range. The closest known maternity roost to the IFNM is the Old Mammon Mine (Figure 3). This mine is located on the TON approximately 8 miles southwest of the southern end of the Sawtooth Mountains and approximately 20 miles from Ragged Top Mountain at the northern end of the Silver Bell Mountains. One estimate at the Old Mammon roost was 6,000 LLNB in 1989 and 5,000 in 1990 (cited in USFWS 1995). Historically, 10,000 bats were known to occupy this roost (Hoffmeister 1986). Estimated exit counts from 1991 to 2000 have varied between 3,600 and 6,000 bats (Hinman 2000).

The distances from Old Mammon Mine to Sawtooth, Silver Bell, Waterman, and Ragged Top Mountains are within the LLNB's estimated foraging range. However, it is unknown where the bats at the Old Mammon Mine forage after leaving the roost or the distances travelled during a single night of foraging by bats in this colony. The area surrounding the Old Mammon Mine has dense stands of saguaro and organ pipe cacti, upon which LLNB feed (Krebbs and Petryszyn 2003). However, information is lacking as to whether the bats forage beyond this vicinity when the maternity colony is active or as to where the females and young disperse once the young are volant (Krebbs and Petryszyn 2003). During migration, LLNB either move east to utilize the available agaves in southeastern Arizona or migrate south into Mexico. If the bats migrate east upon disbanding the maternity colony, individuals could pass through the IFNM, and the saguaros there would be an important food source. Also during migration, the mothers with their juvenile offspring may not fly the longer distances documented for the species. Stopover areas

like the IFNM may be important to the still-growing, novice juveniles. In addition to the Old Mammon Mine, maternity roosts occurring within a 40-mile radius of IFNM include the Campbell Avenue Site, Box Canyon Site, and Colossal Cave (Figure 3) (USFWS 2012).

Potential foraging habitats with saguaro and occasional agaves occur in the planning area. Saguaros are the most common forage plant and occur throughout the IFNM, except on steep, north-facing slopes and valley floors. The densest populations are on bajadas, particularly on the south-facing and east-facing bajadas of the Roskruge, Sawtooth, and Silver Bell mountains (Benson and Darrow 1982). Dimmitt *et al.* (2003) reported two species of agave in the IFNM. *Agave americana* was planted at several road intersections on the Cocoraque Ranch, and *Agave deserti* is found as relictual populations at higher elevations in the Waterman Mountains. Both agave populations are small and would represent a small food source for LLNB in the IFNM.

Nichol Turk's Head Cactus

For NTHC the action area is the IFNM planning area boundary (Figure 1). On the IFNM, NTHC occurs only in the Waterman Mountains, where individuals are patchily distributed. The extent of habitat in the Waterman Mountains is estimated at 5,000 acres (USFWS 1986). Based on surveys (McIntosh *et al.* 2007) the largest population of NTHC is approximately 175 to 298 plants on the south-central slopes of the Waterman Mountains (USFWS 2009). In 1983, BLM personnel surveyed a population on the north side of Waterman Peak and found 1,179 cacti. A population of several acres on a ridge near the Silver Hill Mine is the only place on the IFNM where the plant was considered abundant (Dimmitt *et al.* 2003). Where plants occurred, these ranged from rare to locally abundant. There are no current population estimates for other sites. Other populations occur on a nearly level bajada and south-facing slope near the Harlow Jones Airstrip that extends along most of the northeast bajada of the main Waterman Range (Dimmitt *et al.* 2003).

NTHC grows at elevations from 2,000 to 3,600 feet on dissected alluvial fans of mountain toe-slopes and on the inclined mountain slopes themselves. This cactus is restricted to soils derived from limestone (USFWS 1986). In the Waterman Mountains, this cactus species occurs primarily on the Pennsylvanian aged Horquilla Limestone, the Permian Earp Formation, the Permian Concha Limestone, and the Mississippian Escabroasa Limestone (USFWS 1986). Most of the populations are on Quaternary alluvium derived from the adjacent bedrock; however, some of the populations grow on bedrock terraces and saddles of the Waterman Mountains. On the alluvial fan sites within the IFNM, the cactus grows in dendritic patterns along the edges of washes. Plants growing in montane habitats occur in places with more exposed rock than those on the alluvial fans (USFWS 1986).

In 1989 BLM designated NTHC habitat in the Waterman Mountains as an Area of Environmental Concern (ACEC). Designation of the ACEC included mineral withdrawal, limitation of motorized vehicles to designated roads and trails, prohibition of land use authorizations except along existing roads, planned acquisition of approximately 1,140 acres, implementation of an approved HMP, and prohibition of oil and gas development.

Consultations involving NTHC include: Mine-X-Cavation Waterman Mountain Mining Plan (consultation 2-21-83-F-2), "Nichol Turk's Head Cactus Habitat Management Plan" (consultation 2-21-84-F-84), Coordinated Resource Management Plan for the Cocoraque and Agua Dulce Ranches (consultation 2-21-89-F-166), Programmatic Biological Opinion for the Safford/Tucson Field Offices' Livestock Grazing Program, Southeastern Arizona (consultation

2-21-96-F-160), Arizona Statewide Land Use Plan Amendment for the Fire, Fuels, and Air Quality Management (consultation 02-21-03-F-0210), Waterman Mountain Road Fencing and cattle guards (consultation 22410-2004-I-0409), and Control of Invasive Bufflegrass (*Pennisetum ciliare*) in the Ironwood Forest National Monument (consultation 22410-2007-I-0339).

B. FACTORS AFFECTING SPECIES ENVIRONMENT WITHIN THE ACTION AREA

Nichol Turk's Head Cactus

Blading of a landing strip removed an estimated 350 plants in the early 1980s, and illegal collecting of plants by individuals and institutions has been documented and has caused further losses in the Waterman Mountains (USFWS 1986). Mining and road construction on private patented land also led to the loss of a sizeable but unknown number of cacti (USFWS 1986). The known range of NTHC on IFNM is within the Agua Dulce Allotment, totaling 18,021 acres of which 16,144 is managed by BLM. Grazing is perennial, managed as rest rotation, with 814 assigned AUMs. USFWS (2009) identifies changes in threats associated from those identified in the Recovery Plan (USFWS 1986). Off highway vehicle activity associated with CBV occurs in the area. BLM constructed a fence along Waterman Mountain Road to reduce impacts of this activity, including to NTHC. Invasion of buffleggrass and an associated increased threat of fire to NTHC is recognized as significant.

Urban development in the region and the associated growth of the human population may increase a number of threats to NTHC in the Waterman Mountain area. Illegal OHV use, undocumented immigrants, illegal collection, and the increased potential of introducing weeds and invasive plants are all associated impacts related to urban development and population growth in the planning area and other activities in the surrounding region. Illegal collection and OHV use were identified in the recovery plan as two of the greatest threats to this species' survival (USFWS 1986).

Future ongoing disturbance related to the activities (loading, offloading, and transiting) of undocumented immigrants through the IFNM are likely to remain constant or increase in the future. This activity can damage plants or alter habitat in the range of the NTHC and is difficult to manage or restrict.

Lesser Long-nosed Bat

Flowers and fruits of saguaro, organ pipe cactus, and cardon provide nearly all of the energy and nutrients obtained by pregnant and lactating females roosting in the Sonoran Desert in the spring and early summer (USFWS 1997). Saguaro, which is common and abundant throughout much of the IFNM flower in May and fruit mature in June and July (Benson and Darrow 1982). LLNB feed on both the nectar and fruits of these cacti. When cacti fruit are scarce or unavailable in late July or early August, agave nectar may be the primary food resource for LLNB. Agaves typically bolt or flower and provide a nectar resource for foraging bats from about July into October. Desert agave occurs in mountainous areas within the action area. The introduction of buffleggrass and other invasive species, fires, and drought and climate change may affect some LLNB foraging habitat within the action area, though the extent is unknown. LLNB roosts are threatened by disturbance from CBVs and recreationists. There are no known day roosts on IFNM, but there may be unknown roosts and roost abandonment from adjacent roosts may force bats to establish roosts on IFNM where they are not currently known to exist.

We believe the aggregate effects of general habitat degradation, spread of non-native invasive species, fires, roost disturbance, and drought and climate change, though significant, have not reached the point that LLNB are in imminent danger of extinction. Efforts are ongoing that contribute to the conservation and protection of populations and habitat within the action area.

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

Lesser Long-nosed Bat

The proposed action supports management of ecological conditions to support wildlife, which includes conserving, enhancing, and restoring wildlife populations, habitats, and corridors, as described in consultation 02-21-03-F-0210 on the BLM Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management. Fire suppression activities could impact the LLNB due to adverse human-wildlife interactions. For example, a large and sudden human presence to suppress a fire or extended human presence to rehabilitate burned areas could disturb temporary night roosts or deter foraging activities. Other impacts could involve loss or degradation of habitat with the creation of fire lines, back burning operations, construction of roads, or fire retardant drops, which could lead to the loss of some potential forage plants. While some forage plants could be lost to fire, the number of affected plants likely would account for a small amount of the total available plants found within likely foraging areas in the IFNM.

Emergency stabilization and rehabilitation could be completed following a wildfire. Activities could include seeding with native species, noxious weed control, and erosion control. While these activities could pose short-term impacts on the LLNB, the net result would be an overall increase in health and resiliency of the vegetation, thus contributing to the conservation and recovery of the species in the long-term.

Impacts to forage plants through implementation of the range management program may occur from alteration of the vegetation community, degradation of soil and watershed conditions, modification of the fire regime, and range improvement projects. Direct effects to forage plants may occur as a result of construction or maintenance of range improvement projects and vegetation management. Construction of fence lines, pipelines, water sources, and other range improvements could result in destruction of agaves and saguaros. Potential impacts would be mitigated by site specific NEPA review, application of conservation policies and subsequent compliance with the Act prior to authorization.

Effects to the LLNB from livestock grazing also may occur through trampling and herbivory to forage plants (Bowers 1997). Management and monitoring of livestock grazing, in areas open for this use, would be consistent with the Arizona Standards for Rangeland Health and Guidelines for Grazing Administration, and with protection of monument objects. Young agaves and columnar cacti are very susceptible during the first several years to trampling, grazing, and

drying (Bowers 1997). Rocks and shrubby vegetation provide protection and function as nurseries for young agave and cacti (Franco and Nobel 1988, Turner *et al.* 1966). In some areas that are more heavily grazed, but meet general Standards and Guidelines, cover and microclimates may not be present for seedling establishment and for protection against trampling or grazing. Flowering agave stalks also might be predisposed to herbivory by livestock during the flowering season. This may result in a localized reduction of agave nectar and pollen for the LLNB. There are very few agaves in the IFNM and they are restricted to the rocky slopes in the Waterman Mountains. There was little or no evidence to indicate trampling or herbivory of agave or saguaros at the IFNM (Dimmit *et al.* 2003) and we expect this trend to continue into the future. Potential impacts would be mitigated by site specific Land Health Evaluations and the need to meet desired plant community objectives established to meet the needs of special status species (Standard 3 Desired Resource Conditions).

Allowing for the development of two new waters would provide for additional water sources in the Twin Tanks pasture (Agua Dulce grazing allotment) and Cocoraque pasture (Cocoraque grazing allotment). Additional livestock tanks would have a beneficial effect on the LLNB by providing additional water resources. New water sources could concentrate livestock use, altering vegetation nearby. Site selection for these waters would be subject to site specific evaluation to ensure any adverse impacts are avoided or minimized. Potential impacts would be mitigated by site specific review, application of conservation policies and subsequent compliance with the Act, if warranted.

Approximately 18,380 acres of public land would be designated as roaded natural and 36,230 acres would be designated as semi-primitive motorized. The roaded natural and semi-primitive motorized RMZ designations could encourage the continuation of ground disturbance in and near recreational use areas and access roads; thus, habitat for the LLNB could be degraded immediately adjacent to these areas. The remaining 73,740 acres of public land within IFNM are designated as primitive (9,510 acres), semi-primitive non-motorized (57,450 acres), and as the Ragged Top Watchable Wildlife (6,780 acres) RMZs that would emphasize non-motorized, dispersed recreational use, which would result in limited access and reduced ground disturbance to vegetation in potential foraging habitat of LLNB. Hiking, non-vehicle-based camping, and non-motorized, wheeled game carriers, which are allowed throughout the monument, could impact foraging habitat and night-roosts of the LLNB, but these disturbances are likely very rare and not likely to result in take of the species.

The greatest potential impacts from recreational use of the area would be from visitors starting wildfires. Management decisions that restrict overnight vehicle-based camping to limited campsites and that constrain large group camping to three identified sites would limit the potential for human-caused wildfires. Primitive, backcountry camping that permits campfires increases this potential somewhat, but requiring all firewood to come from sources outside the IFNM would create a practical limitation of additional pack-weight that would discourage backcountry campfires. In addition, developing and implementing an educational program to encourage responsible use of public lands should reduce the potential for human-caused fires.

Nichol Turk's Head Cactus

Implementation of the proposed action will have both beneficial and adverse effects. Livestock grazing has the potential to affect the NTHC by the trampling of mature, juvenile, and seedling-sized individuals through crushing or damage to meristematic tissue resulting in mortality or long term damage affecting growth or reproduction. Other potential effects from grazing include

increased soil compaction and erosion, decreased water infiltration, and decreased soil water for growth and development, which may affect reproduction and increased species distribution. Invasive and noxious weeds may spread or increase as a result of grazing, which could lead to increased fuel levels, increased fire intensities, shortened fire-return intervals, and a decline the quality and quantity of habitat for the NTHC. This could also increase competition for resources that could result in a reduced reproductive success and a reduction in the population, because the NTHC fails to thrive in areas where it must compete with other vegetation.

Fire suppression activities could affect the NTHC through the trampling or crushing of individual plants or populations by equipment or firefighters. However, the BLM has committed to mapping these plant populations and avoiding these during wildfire suppression efforts. In addition, the BLM is committed to staying on existing roads and not using sites known to support populations of these species for the staging of equipment or personnel. Therefore, the overall effect from fire suppression activities, within NTHC habitats, would be minimized. The net result of fire and fuel management prescriptions under the proposed action would be to protect important habitat for the species, which would contribute to the maintenance and enhancement of the existing population.

The decision to allow non-vehicle-based dispersed camping within the VHA could lead to the direct loss of cacti from trampling, as well as increase the risk of wildfire from campfires and other human sources of ignition. The extent of this loss cannot be estimated; however, BLM has committed to monitoring. Human-caused wildfires could increase the potential for loss of NTHC, which are not fire adapted. Requiring all wood for campfires to come from outside sources reduces the potential of human-caused wildfire from primitive, backcountry camping because of the practical limitation of additional pack-weight that would discourage the portage of wood into NTHC cacti habitat. Additional limitations on overnight vehicle-based camping to only designated campsites and large group camping to three identified sites would further limit the potential for human-caused wildfires. In addition, developing and implementing an educational program to encourage responsible use of public lands also should reduce the potential for human-caused fires and impacts to NTHC. The allocation of the 2,240-acre Waterman Mountains VHA will provide significant protection for the species.

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 biological opinion. 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.

Lesser Long-nosed Bat

Of the range of future actions that are reasonably certain to occur, regional population growth is likely to have the greatest impact on the lesser long-nosed bat and its habitat. Increased growth in the region is likely to lead to the conversion of large tracts of Sonoran Desert for urban development and associated infrastructure. Within the IFNM boundaries, over 59,000 acres, or approximately one-third of the land, is either privately owned or State Trust land. If these lands are lost to development, it is likely that foraging habitat, as well as night roosts, or unknown day roosts, of the lesser long-nosed bat would be lost. In addition, increasing urbanization and development likely will result in an increase in recreational use of IFNM by the public. This may

result in increased LLNB habitat degradation and disturbance of roost sites, although conservation actions and monitoring may limit these disturbances.

As impacts to LLNB food resources occur across increasingly larger portions of the landscape, bat survivorship might be reduced through increased flight distances and higher energy expenditures to foraging habitats, increased exposure to predators, changes to the patterns of use of the few large roost sites, and a potential disruption of the “nectar corridor” that connects colonial sites in the United States with those in Mexico along migratory routes. These effects may be most evident in those years where weather patterns, fire, or other factors also have affected agaves and columnar cacti.

Nichol Turk’s Head Cactus

Grazing on ASLD managed land within the Agua Dulce Allotment may also result in impacts to NTHC similar to impacts on BLM lands. Grazing on the Agua Dulce Allotment is managed under the Coordinated Resource Management Plan for the Cocoraque and Agua Dulce Ranches (consultation 2-21-89-F-166) which is intended to promote conservation of NTHC on State and private as well as BLM managed lands. The effectiveness of this plan on non-BLM land is not known.

Mining on non-BLM land is a continuing threat to NTHC (USFWS 2009). Private lands in the Waterman Mountains within IFNM supporting NTHC are owned by a company that produces Portland cement from limestone (Schmalzel and Francisco 2000). Previously occupied NTHC habitat in the Twin Peaks area east of IFNM has been eliminated by limestone quarrying for the production of cement and cement producers are looking for alternative sources as that source of limestone is depleted. Production of Portland cement close to the point of use is important to the building industry in Arizona. Future interest in limestone quarrying in NTHC habitat is likely related to activity in the building industry in Arizona. Specific plans for quarrying of limestone from private lands with the Waterman VHA are not known.

CONCLUSION

After reviewing the current status of LLNB and NTHC, the environmental baseline for the action area, the effects of the proposed RMP, and the cumulative effects, it is the FWS's biological opinion that the RMP, as proposed, is not likely to jeopardize the continued existence of the LLNB and NTHC. No critical habitat has been designated for these species; therefore, none will be affected.

We present this conclusion on LLNB for the following reasons:

- While livestock grazing may degrade foraging habitat and reduce recruitment of forage plants, management of grazing on IFNM area allotments is subject to consultation 02-21-96-F-160, which remains in effect.
- While fire suppression and management activities may degrade foraging habitat and reduce recruitment of forage plants, fire suppression and management activities are subject to consultation 02-21-03-F-0210, which remains in effect.

- While recreational use of IFNM may degrade foraging habitat and reduce recruitment of forage plants, 125 miles of routes would be open to motorized uses, 205 miles open to non-motorized use, and 17 miles of routes would be obliterated and/or reclaimed, reducing direct impacts to foraging habitat. Further, vehicular travel would be restricted to designated roads, minimizing direct impacts and impacts to recruitment of forage plants.
- Throughout IFNM overnight vehicle-based camping would be restricted to limited campsites and large group camping to three identified sites which would minimize the potential for human-caused wildfires to degrade foraging habitat and reduce recruitment of forage plants.

We present this conclusion on NTHC for the following reasons:

- While livestock grazing may result in trampling of NTHC, degradation of habitat through increased soil compaction and erosion, decreased water infiltration, decreased soil water for growth and development, spread of invasive and noxious weeds which could lead to increased fuel levels, increased fire intensities, and shortened fire-return intervals, management of grazing on IFNM area allotments is subject to consultation 02-21-96-F-160, which remains in effect. The Proposed Action in consultation with 02-21-96-F-160 includes conservation measures to protect NTHC.
- Management of livestock grazing is subject to Arizona Standards for Rangeland Health, which includes land health standards which will reduce effects to NTHC habitat.
- While fire suppression and management activities may result in trampling of NTHC and degradation of habitat management, fire suppression and management activities are subject to consultation 02-21-03-F-0210, which remains in effect. The Proposed Action in consultation 02-21-03-F-210 includes conservation measures to protect known locations of this federally listed species.
- Throughout IFNM, overnight vehicle-based camping would be restricted to limited campsites and large group camping to three identified sites which would minimize disturbance to NTHC and minimize the potential for human-caused wildfires to degrade NTHC habitat.
- In the Waterman Mountains VHA stands of NTHC would be avoided with a 0.25 mile buffer during designation of campsites.
- In the Waterman Mountains VHA, use of routes by motor vehicles will be reduced with conversion of some routes to non-motorized use, reducing potential for direct impact to NTHC.

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 proposed action.

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.

Sections 7(b)(4) and 7(o)(2) of the Act generally do not apply to listed plant species. However, limited protection of listed plants from take is provided to the extent that the Act prohibits the removal and reduction to possession of federally listed endangered plants from areas under Federal jurisdiction, or for any act that would remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any regulation of any State or in the course of any violation of a State criminal trespass law.

AMOUNT OR EXTENT OF TAKE

The FWS does not anticipate the proposed action will incidentally take any additional LLNB from that described in consultation 02-21-03-F-0210 on the BLM Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management. No roosts are known on the IFNM and LLNB foraging habitat will be managed for conservation. Further, the FWS concludes that the beneficial effects associated with the Conservation Measures being implemented as a part of this action will minimize any possible additional take of LLNB. The incidental take statement from the 2004 BO is repeated here for convenience.

“We anticipate that incidental take of lesser long-nosed bats could occur as a result of fire suppression, wildland fire use, and prescribed fire. We anticipate this take will be difficult to detect because the species is wide-ranging and finding a dead or impaired specimen is unlikely. However, take of this species can be anticipated by loss of greater than 20 percent of agave and columnar cacti within the fire perimeter due to fire suppression actions, or within the treatment area during any wildland fire use or prescribed fire situation. The incidental take is expected to be in the form of harassment of any foraging lesser-long nosed bats within 0.5 mile of areas that experience fire suppression actions, wildland fire use, or prescribed fire, because even short-term loss of some bat food sources (agaves, saguaros) may alter the feeding behavior and foraging distances of lesser long nosed bats in the action area.”

REASONABLE AND PRUDENT MEASURES

“We determine that the proposed action incorporates sufficient measures that reasonably and prudently minimize the effects of incidental take of lesser long-nosed

bats. All reasonable measures to minimize take have been incorporated into the project description. Therefore, no reasonable and prudent measures are included in this incidental take statement.”

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.

LLNB

- We recommend that BLM monitor disturbance, such as expansion of campsite areas and expansion of road corridors, to monitor effects of recreation activities to LLNB foraging habitat and recruitment of forage plants and to adaptively manage recreational activities to address impacts. We recommend utilization of photogrammetric analysis of satellite imagery in a GIS based platform.
- We recommend that BLM survey IFNM lands and work with others to survey private and ASLD managed lands within IFNM for roosts utilized by LLNB.

Nichol Turk’s Head Cactus

- We recommend that BLM monitor disturbance, such as expansion of campsite areas and expansion of road corridors, to monitor effects of recreation activities to NTHC habitat and to adaptively manage recreational activities to address impacts. We recommend utilization of photogrammetric analysis of satellite imagery in a GIS based platform.
- We recommend that BLM establish a systematic monitoring protocol for NTHC to more effectively evaluate the status of the subspecies on IFNM and work collaboratively with others to evaluate the status of the subspecies across its known range. We recommend establishment of a database with geo-referenced locations of stands of NTHC and digital images of those stands to provide a means to evaluate survivorship and assess threats such as OHV impacts.
- We recommend that BLM work with others to survey private and ASLD managed lands within IFNM to prioritize lands to acquire or secure for conservation of NTHC.
- We recommend that BLM work with the TON to survey NTHC on the tribal lands.

In order for the FWS to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the FWS requests notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the actions outlined in the request. As provided in 50 CFR §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 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.

The FWS appreciates the BLMs efforts to identify and minimize effects to listed species from this project. We also encourage you to continue to coordinate this project with the Arizona Game and Fish Department and the Tohono O’odham Nation. For further information please contact Bill Werner (x217) or Debra Bills (x239). Please refer to consultation number 02EAAZ00-2012-F-0257 in future correspondence concerning this project.

/s/ Debra Bills for

Steven L. Spangle

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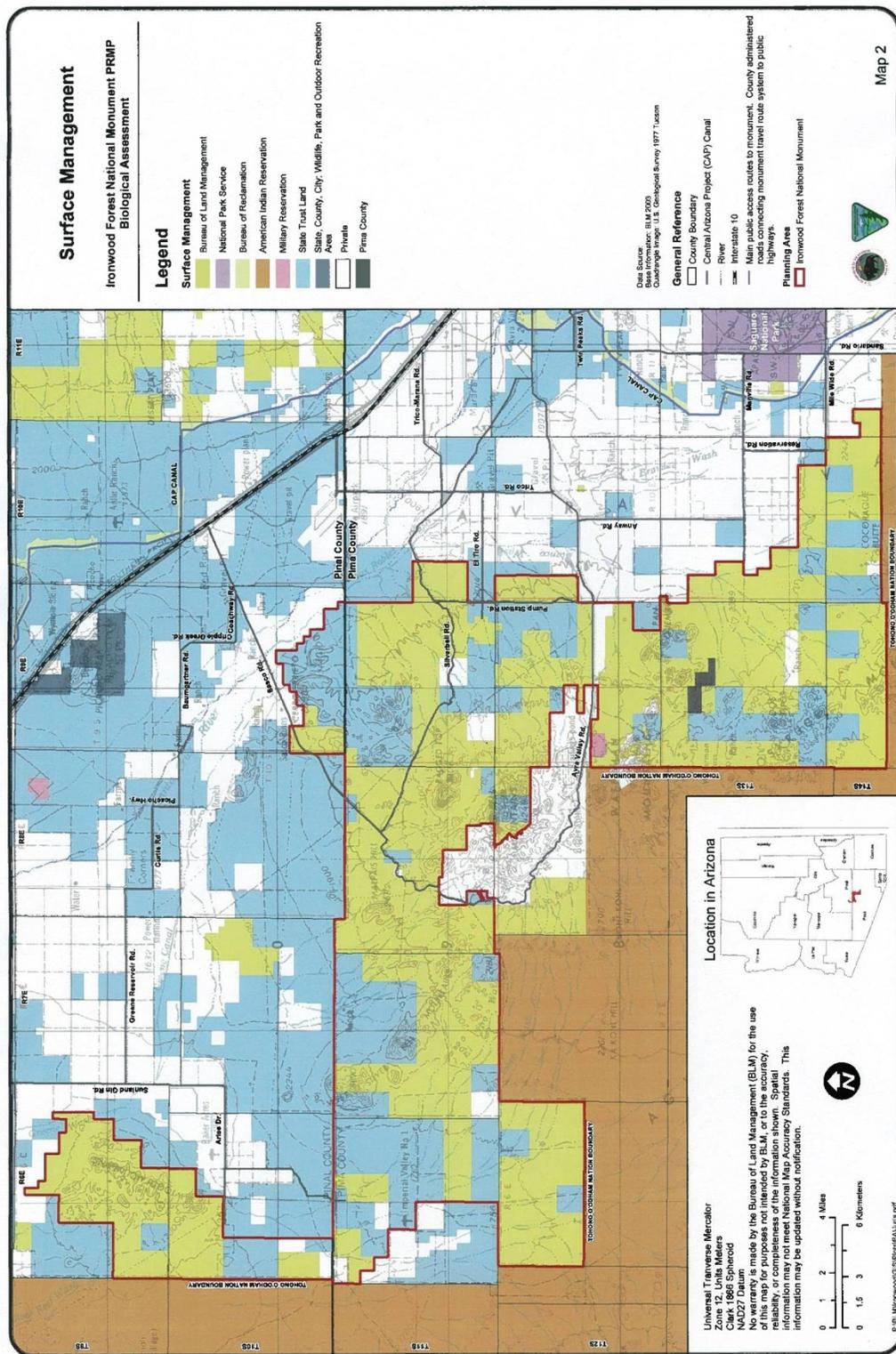


Figure 1. Ironwood Forest National Monument (red perimeter)

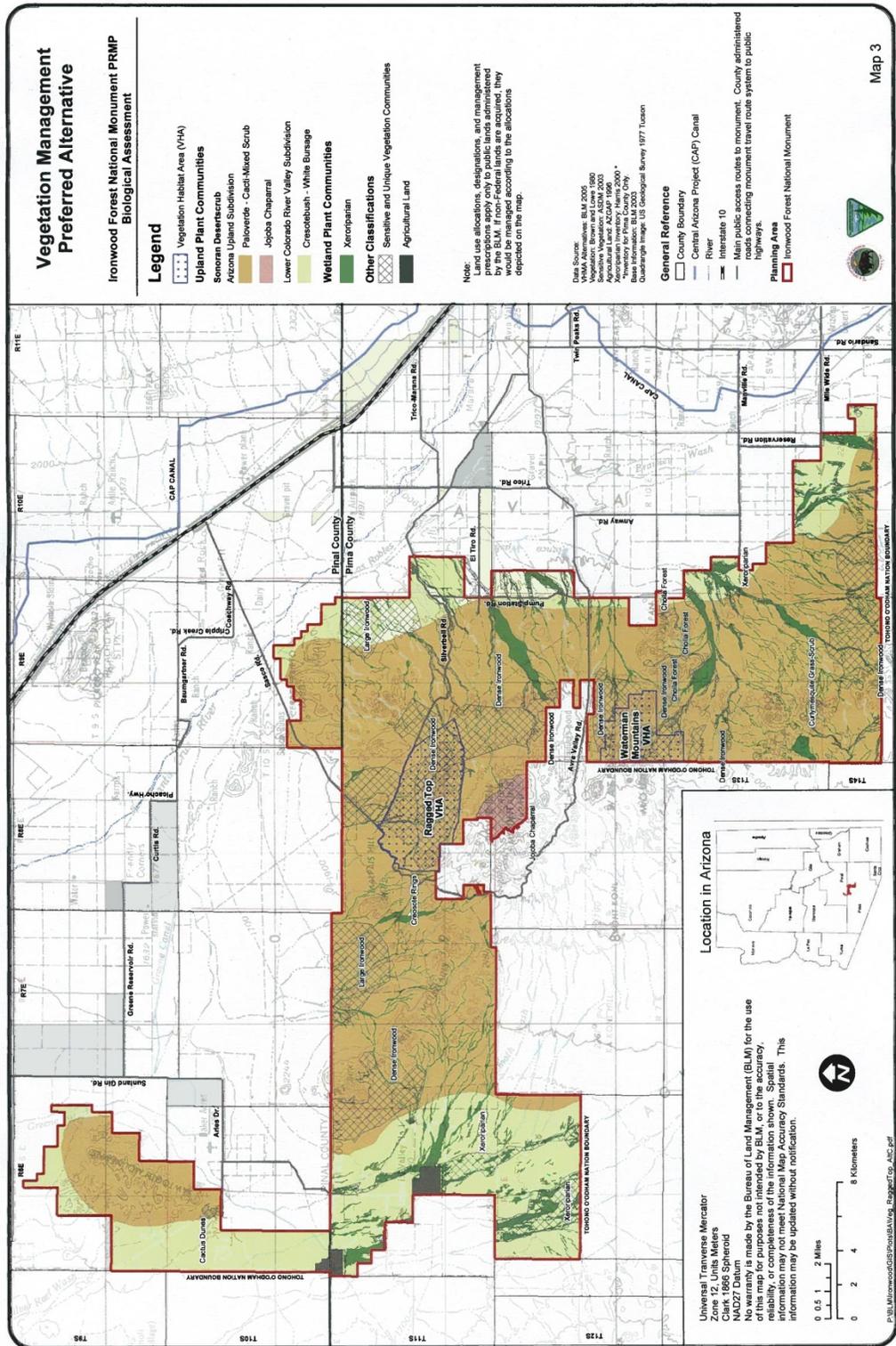


Figure 2. Vegetation Management including Waterman Mountain VHA



Figure 3. IFNM in Relation to LLNB Roosts showing 40 mile radii.

APPENDIX A

Conservation Report for Ironwood Forest National Monument Resource Management Plan Effects on the Sonoran Pronghorn Experimental, Non-essential Population

Description of the Proposed Action

The proposed action is implementation of the IFNM RMP. A complete description is found in the BA and PRMP/FEIS. The RMP makes decisions and allocates resources regarding the management of air quality, geology and caves resources, soil and water resources, vegetation, wildlife and wildlife habitat, special status species, fire ecology and management, cultural resources, paleontological resources, scenic and visual resources, wilderness characteristics, energy and mineral resources, livestock grazing, recreation, lands and realty, travel management, and special designations.

Status of the Species in the Action Area

FWS identified lands in Arizona suitable for re-establishment of SPH and classified that re-established population as a nonessential experimental population (NEP) (FR Vol. 76, No. 87, 25593). Release of SPH within the NEP area (Figure A-1) is identified in the FWS “Final Environmental Assessment for Reestablishment of the Sonoran Pronghorn,” (FEA), dated October 6, 2010. The NEP area includes all regions into which Sonoran pronghorn could potentially move from release sites (release sites are located in Area A and Area D, as identified in the FES). The Area A release site is 135 miles and the Area D release site is 60 miles west of IFNM. The boundary of Area D is 4 miles from IFNM (Figure A-1).

The “action area” means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. For this conference report, the action area analyzed is the area where SPH are designated as nonessential (Figure A-1). The IFNM is not occupied by SPH. IFNM is in the eastern portion of the NEP area, and is within the historical range of the Sonoran pronghorn (FWS 2002). Although over 60 miles east of the release site, there is a small probability that Sonoran pronghorn could reach IFNM at some point in the future. The major barrier between the two areas is likely a complex of rugged terrain, formed by the Batamote, Saucedo, Sand Tank, and other mountain ranges, between the release site in Area D and SPH habitat to the east, including on IFNM.

Vegetation on IFNM could provide habitat for SPH. Sonoran Desert Scrub – Lower Colorado River Valley Subdivision and adjacent bajadas supporting Sonoran Desert Scrub – Arizona Upland Subdivision vegetation (Figure A-2) would be suitable habitat, as described in the FEA. Arizona Upland vegetation is found on the bajadas and is characterized by a relatively complex assemblage of species including paloverde (*Parkinsonia* spp.), mesquite (*Prosopis juliflora*), creosotebush (*Larrea tridentata*), ironwood (*Olneya tesota*), ocotillo (*Fouquieria splendens*), cholla (*Opuntia* spp.), and saguaro (*Carnegiea gigantea*) (Turner and Brown 1994). The Lower Colorado River Subdivision is typified by the paloverde-cacti-mixed scrub series, which is dominated by paloverde, columnar cacti such as the saguaro, and ironwood (Turner and Brown 1994).

Effects of the Action

Implementation of the RMP would be beneficial to SPH habitat in that impacts to vegetation resources from grazing, fire suppression activities, and recreation, including vehicular travel, will be managed to protect the vegetation resource. Human presence can disturb SPH, which tend to avoid roads. Closure of roads and changes in authorized use of others to non-motorized would be beneficial although the relative value would depend on the location and vegetation community. Travel management in more open areas, which are more likely to be utilized by SPH, including areas supporting Lower Colorado River Valley Subdivision vegetation (Figure A-2) will likely be more difficult and human disturbance could reduce usability of some potential SPH habitat. In addition, the land ownership pattern in the western portion of IFNM is mixed and BLM management would not address impacts occurring on ASLD managed lands.

Because of the IFNM is not presently occupied by SPH and because the RMP includes conservation measures that generally are consistent with conservation of SPH habitat, the FWS does not consider potential impacts of implementation of the RMP to be significant. The FWS does, however, offer conservation recommendations for SPH in the project area:

- We recommend that sightings of SPH or sign on or in the vicinity of the IFNM be reported to the FWS and Arizona Game and Fish Department (AGFD). Documentation of sightings of animals, tracks, droppings, and hair, through digital or other photography, to the extent practical, is recommended.
- We recommend that layout of fencing avoid creating “dead end” or “trap” areas between fenced areas to allow easy egress for SPH from the area if startled by humans or predators. We recommend fencing be designed to avoid ensnaring pronghorn and other large mammals. We recommend a review of existing fencing for necessity and if necessary for design modifications to minimize impact to pronghorn and other large mammals.

Conclusion

The proposed action is not likely to jeopardize the continued existence of the 10(j) non-essential, experimental population of SPH. Because of the SPH’ status as a non-essential experimental population in the area in Arizona so identified by rule, they are treated as though they are proposed for listing for section 7 consultation purposes. By definition, a non-essential experimental population is not essential to the continued existence of the species. Thus, no proposed action impacting a population so designated could lead to a jeopardy determination for the entire species.



Figure A-1. Sonoran Pronghorn 10(j) area and release sites in relation to IFNM

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APPENDIX B

Technical Assistance for Desert Tortoise and Tucson Shovel-nosed Snake

Desert tortoise (DT) and Tucson shovel-nosed snake (TSNS) are presently under review by FWS as candidates for listing under the Act. Conservation measures to address potential effects of fire suppression activities on the Mohave population of desert tortoise are identified and analyzed in consultation 02-21-03-F-210. We recommend that these conservation measures, repeated here, be incorporated for the Sonoran desert tortoise and TSNS at IFNM. Because of the mixed land ownership pattern on IFNM we recommend that BLM coordinate with the ASLD and State Forester regarding conservation measures for DT with a goal of employing conservation measures uniformly across land ownership boundaries. We recommend that BLM develop maps to be used by fire crews in identifying sensitive resources and that pre-season coordination and briefing occur annually.

We recommend development of a database of DT and TSNS sightings to provide a repository for sightings by all personnel and we encourage incorporation of digital images for documentation. We recommend that BLM conduct surveys for DT and TSNS.

Conservation measures from the 2004 Biological and Conference Opinion for the BLM Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management (02-21-03-F-210):

“We recommend that BLM:

1. Fund, aid, or establish research to determine methods for reducing alien annual grasses in desert tortoise habitat.
2. Fund, aid, or establish research to determine the effects of chemical fire retardants on the desert tortoise and its habitat.
3. Continue to actively participate in the recovery of the desert tortoise.”

APPENDIX C

Following are excerpts from the Project Description in the BA pertinent to analysis of effects to LLNB and NTHC related to fire suppression, livestock grazing and recreation:

2.1 MANAGEMENT COMMON TO ALL RESOURCES

Management of the IFNM must heed and be in accordance with all relevant laws, regulations, and policies of other government entities with jurisdiction over the IFNM. This management, common to all resources, is described below.

2.1.1 Arizona Standards for Rangeland Health

Land health standards are the goals for the desired condition of the biological and physical components and characteristics of rangelands, and apply to all resources and resource uses. Standards are measurable and attainable and comply with various federal and State statutes, policies, and directives applicable to BLM rangelands. The Arizona Standards for Rangeland Health and Guidelines for Grazing Administration (Standards and Guidelines) (USDI, BLM 1997) establish three land health standards as indicators for rangeland health on public lands, as described below. These Standards apply to all BLM authorized activities. The guidelines for grazing administration are presented in Appendix B and apply to actions authorized by BLM that pertain to the administration of grazing permits and leases.

2.1.1.1 Land Health Standard 1: Upland Sites

Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform (ecological site).

Soil conditions support proper functioning of hydrologic, energy, and nutrient cycles. Many factors interact to maintain stable soils and healthy soil conditions, including appropriate amounts of plant cover, litter, soil porosity, and organic matter. Under proper functioning conditions, rates of soil loss and infiltration are consistent with the potential of the site.

Ground cover in the form of plants, litter, or rock is present in pattern, kind, and amount sufficient to prevent accelerated erosion on the ecological site; or ground cover is increasing as determined by monitoring over an established period of time.

Signs of accelerated erosion are minimal or diminishing for the ecological site as determined by monitoring over an established period of time, such factors as adequate ground cover and signs of erosion. Ground cover includes litter, live vegetation of suitable amount and type, and rock. Signs of erosion include sloughs, slumps, flow patterns, gullies, rills, or plant pedestaling.

2.1.1.2 Land Health Standard 2: Riparian-Wetland Sites

Riparian-wetland areas are in properly functioning condition.

Stream channel morphology and functions are appropriate for proper functioning condition for existing climate, landform, and channel reach characteristics. Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to

dissipate stream energy associated with high water flows, as indicated by such factors as gradient, width/depth ratio, channel roughness and sinuosity of the stream channel, bank stabilization, reduced erosion, captured sediment, groundwater recharge, and dissipation of energy by vegetation.

Riparian-wetland functioning condition assessments are based on examination of hydrologic, vegetation, soil and erosion-deposition factors. BLM has developed a standard checklist to address these factors and make functional assessments. Riparian-wetland areas are functioning properly as indicated by the results of the application of the appropriate checklist (USDI, BLM 1998).

The two exemptions to Standard 2 include (1) dirt tanks, wells, and other water facilities constructed or placed at a location for the purpose of providing water for livestock and/or wildlife and which have not been determined through local planning efforts to provide for riparian or wetland habitat; and, (2) water impoundments permitted for construction, mining, or other similar activities.

2.1.1.3 Land Health Standard 3: Desired Resource Conditions

Productive and diverse upland and riparian-wetland plant communities of native species exist and are maintained.

Upland and riparian-wetland plant communities meet desired plant community objectives. Plant community objectives are determined with consideration for all multiple uses.

Objectives also address native species, and the requirements of the Taylor Grazing Act, FLPMA, Endangered Species Act, Clean Water Act, and appropriate laws, regulations, and policies.

Desired plant community objectives will be developed to assure that soil conditions and ecosystem function described in Standards 1 and 2 are met. BLM targets a site-specific plant community, which when obtained, will assure rangeland health, State water quality standards, and habitat for endangered, threatened, and sensitive species. Thus, desired plant community objectives will be used as an indicator of ecosystem function and rangeland health, as indicated by composition, structure, and distribution.

The exception to Standard 3 includes ecological sites or stream reaches on which a change in existing vegetation is physically, biologically, or economically impractical.

2.1.2 BLM Policy

BLM has policy guidance already established under various instruction memorandums and information bulletins from both the Washington and Arizona State offices. For example, one such policy is that —no domestic sheep or goat grazing should be allowed within buffer strips less than 9 miles surrounding desert bighorn habitat, except where topographic features or other barriers prevent physical contact (IM WO-98-140). There are numerous policies that apply to the IFNM, and all cannot be described here in detail. For more information on BLM policies applicable to land use planning, refer to BLM Handbook H-1601-1, Land Use Planning Handbook (USDI, BLM 2005) and the information bulletins and instruction memorandums available on BLM websites for the Washington (<http://www.blm.gov/nhp/efoia/wo/woerr.html>) and Arizona (<http://www.blm.gov/nhp/efoia/az/>) offices.

2.1.3 Administrative Actions

Administrative actions are the day-to-day activities required to serve the public and to provide optimum management of the IFNM's resources. These actions are allowable by regulation and do not require authorization within an RMP, but may require site-specific analysis under the NEPA and Act. For example, in day-to-day management of the IFNM, BLM is responsible for law enforcement activities that need not be authorized under the RMP. Additionally, BLM may authorize or restrict access in certain areas in emergency situations (with publication of a notice in the federal Register) or coordinate with other agencies and organizations, such as Arizona Game and Fish Department, for specific activities that may not require site-specific NEPA documentation efforts. These and other administrative actions will be conducted in the IFNM, sometimes in partnership with other landowners or agencies or entities. The degree to which these actions are carried out depends upon BLM policies, available personnel, funding levels and further environmental analysis and decision-making, as appropriate. Administrative uses and actions are listed in Appendix C.

2.1.4 Adaptive Management

Monitoring is an integral part of all actions and programs of the BLM. It is used to measure the effectiveness of implemented actions and to document any impacts to natural resources. When monitoring determines that impacts have reached an unacceptable level, mitigation is initiated to reverse the condition. This may include a reduction in, or elimination of, the action or situation causing the impact. As a result, although there would be some disturbance to resources, the flexible and responsive management approaches under an implemented alternative protect the long-term productivity of the land, resources, and resource uses.

Many activities and events are currently monitored in the IFNM: Grazing utilization is monitored to assure Standards and Guidelines are met on allotments; vegetation trends are evaluated to ensure support of current decisions; OHV events are monitored to determine whether permit stipulations are followed and that the necessary site rehabilitation occurs; and specific recreational activities and sites, like shooting and shooting ranges, are monitored to determine the associated impacts to resources. This plan proposes additional monitoring of special status species, land restoration activities, recreation, travel management, and several other resources and uses. The strategies and needs for monitoring these resources or programs require further efforts to design, schedule, and plan effectively.

Two levels of monitoring will be used in managing IFNM resources. Standard monitoring will be included in all BLM land management programs, and monitoring for adaptive management will be utilized to monitor limits of acceptable change. Standard monitoring is the traditional method that each BLM resource program incorporates into its management process. Adaptive management is an integrated method for addressing uncertainty in natural resource management. It is a structured process for learning by doing and examining strategies to meet measurable goals and objectives, and then adjusting future management actions where necessary, according to the lessons learned.

Adaptive management is also a pre-planned process. It recognizes that future changes in the resource base, management information, and other conditions are inevitable and that a pre-planned process must be in place to measure these changes and develop appropriate responses to maintain or improve the program's effectiveness. An adaptive management program is essential

for resources with information gaps and biological uncertainty, where these unknowns introduce significant risk to the resource. Under an adaptive management approach, the management actions in this plan can be refined continuously in response to changing conditions and the effectiveness of the implemented plan. The ultimate goal is to ensure that only the most effective components of the actions are retained, while ineffective measures are dropped or replaced. As a result, although there would be some disturbance to resources, the flexible and responsive management approaches under the implemented alternative would protect the long-term productivity of the land, resources, and resource uses.

Monitoring the effectiveness of land use planning decisions is an important part of adaptive management. The monitoring done in adaptive management provides feedback on the effects of implemented actions and gauges trends against baseline conditions that characterize natural communities and species conservation elements. The overall process relies on the continual collection of data and information in order to determine whether goals and objectives of the plan are being met through time. Tracking the progress of actions and measuring changes resulting from these activities is critical to determining the success or the need for a different management approach.

Public input is invited and would be sought in the development of effective monitoring and evaluation plans and in the execution of those plans. BLM will work with other agencies, ranchers, user groups, and visitors to the IFNM to gather information in support of monitoring efforts, which will allow BLM to successfully execute adaptive management practices within the IFNM.

A more detailed monitoring strategy will be included in the IFNM RMP implementation plan, which will be developed according to the decisions in the approved RMP. At a minimum, BLM will evaluate the approved RMP every five years to determine which decisions are implemented and where management changes may be necessary. Evaluations may occur more frequently, if changes in BLM policy or related plans that could affect the IFNM warrant changes to the decisions of the RMP.

2.2 MANAGEMENT DECISIONS BY RESOURCE

RMPs are broad-scale land management plans that establish desired goals and objectives for resource management, and identify the measures deemed likely to achieve those outcomes. The following section identifies the goals and objectives for each resource or resource use, and the measures, management actions, allowable uses, and land use allocations, used to achieve those. The broad, plan-level decisions included in the preferred alternative will become the RMP and will provide the framework for site specific management decisions and actions.

This BA addresses 17 resources or resource uses and the goals and objectives and the proposed allowable uses and management actions are identified for each of these. The preferred alternative developed for the

IFNM addresses the management of the following: air quality; geology and caves resources; soil and water resources; vegetation; wildlife and wildlife habitat; special status species; fire ecology and management; cultural resources; paleontological resources; scenic and visual resources; wilderness characteristics; energy and mineral resources; livestock grazing; recreation; lands and realty; travel management; and special designations.

2.2.7 Fire Ecology and Management

Fires would be managed to maintain natural vegetation composition, structure, and function with a priority on safety for firefighters and the public. The management actions for Fire Ecology and Management carry forward the conservation measures found in the BLM Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management (USDI, BLM 2004). The IFNM is a Category A area where fire is not desirable and full suppression would be maintained in all areas in accordance with applicable conservation measures. Programs would be implemented to reduce all ignitions and emphasize prevention, detection, and use of rapid suppression techniques. Where fuel loading is high, methods would use biological, mechanical or chemical treatments to maintain nonhazardous fuel levels to reduce the hazardous effects of wildland fires, and meet resource objectives. Use of prescribed fire is prohibited. A resource advisor would be present on all fires within the IFNM.

2.2.13 Livestock Grazing

Management and monitoring of livestock grazing, in areas open for this use, would be consistent with the Arizona Standards for Rangeland Health and Guidelines for Grazing Administration, and with protection of monument objects. Livestock grazing on the IFNM is authorized at the levels presented in the Rangeland Program Summary (USDI, BLM 1987). All public lands within 11 allotments (approximately 128,400 acres) are available for grazing (Map 7). Nine allotments are classified as perennial and two allotments continue under an ephemeral classification.

Grazing use for each allotment is assigned in terms of Animal Unit Months (AUMs). An AUM is the amount of forage needed to sustain one cow, five sheep, or five goats, for a month. These allotments support 8,042 AUMs (670 for cattle), of which an estimated 7,748 AUM (646 for cattle), or 96 percent, are within the IFNM boundaries (D. Tersey personal communication 2004; USDI, BLM 2001b, 2000a, 2000b). All allotments within the IFNM are Section 15 leases, meaning these are located outside of an established grazing district and are administered in accordance with Section 15 of the Taylor Grazing Act of 1934.

All of the allotments have been evaluated against the Standards and Guidelines in the past few years, though some of the evaluation reports have not been completed to date. In all cases the allotment evaluations concluded that the standards were met and no substantial issues to be addressed were identified. In some cases, the range improvements on the allotments were identified as being in fair or poor condition. Table 2 presents information on the results of the most recent allotment evaluations for each allotment.

As part of the ongoing grazing management practices, BLM authorizes grazing on allotments as ephemeral or perennial. Table 3 presents the proposed grazing authorization status of the allotments in the IFNM. Under the preferred alternative all 11 allotments would be available for grazing and 9 allotments would be classified as perennial, indicating that a base level of grazing is allowed year-round. Two allotments would continue to be classified as ephemeral, meaning grazing is allowed only when precipitation patterns generate seasonal production of forage available for livestock. In a perennial allotment, the lessee could request authorization to graze additional AUMs if criteria are met and forage is available in sufficient volume to support soil protection, browsing by wildlife, and wildlife or livestock grazing pressure. The grazing authorization status could be modified by BLM based on future evaluations under the Arizona Standards for Rangeland Health and Guidelines for Grazing Administration.

Following cancellation or voluntary relinquishment of a grazing lease, BLM would determine if conditions within the associated allotment(s) are satisfactory based on applicable management objectives. If BLM determines that livestock grazing is preventing or hindering progress towards the achievement of applicable management objectives, BLM may decide to discontinue livestock grazing use on the allotment(s) if this action would help promote attainment of these objectives. Even if BLM initially decides to discontinue livestock use on some or all of an allotment, it may later decide to resume livestock use if it determines, based on its subsequent evaluation of ecological conditions and other pertinent factors, that it is appropriate to do so.

Management of livestock grazing would allow only those new range improvements for livestock in Desert Tortoise Category I and II Habitat Areas that would not create conflicts with tortoise populations. Mitigation for such conflicts is permissible to make the net effect of the improvements positive or neutral to desert tortoise populations. Conflicting existing improvements should be eliminated as opportunities arise. Where range improvements are necessary and/or permitted, access and activities would be located and implemented to minimize additional disturbance to resources.

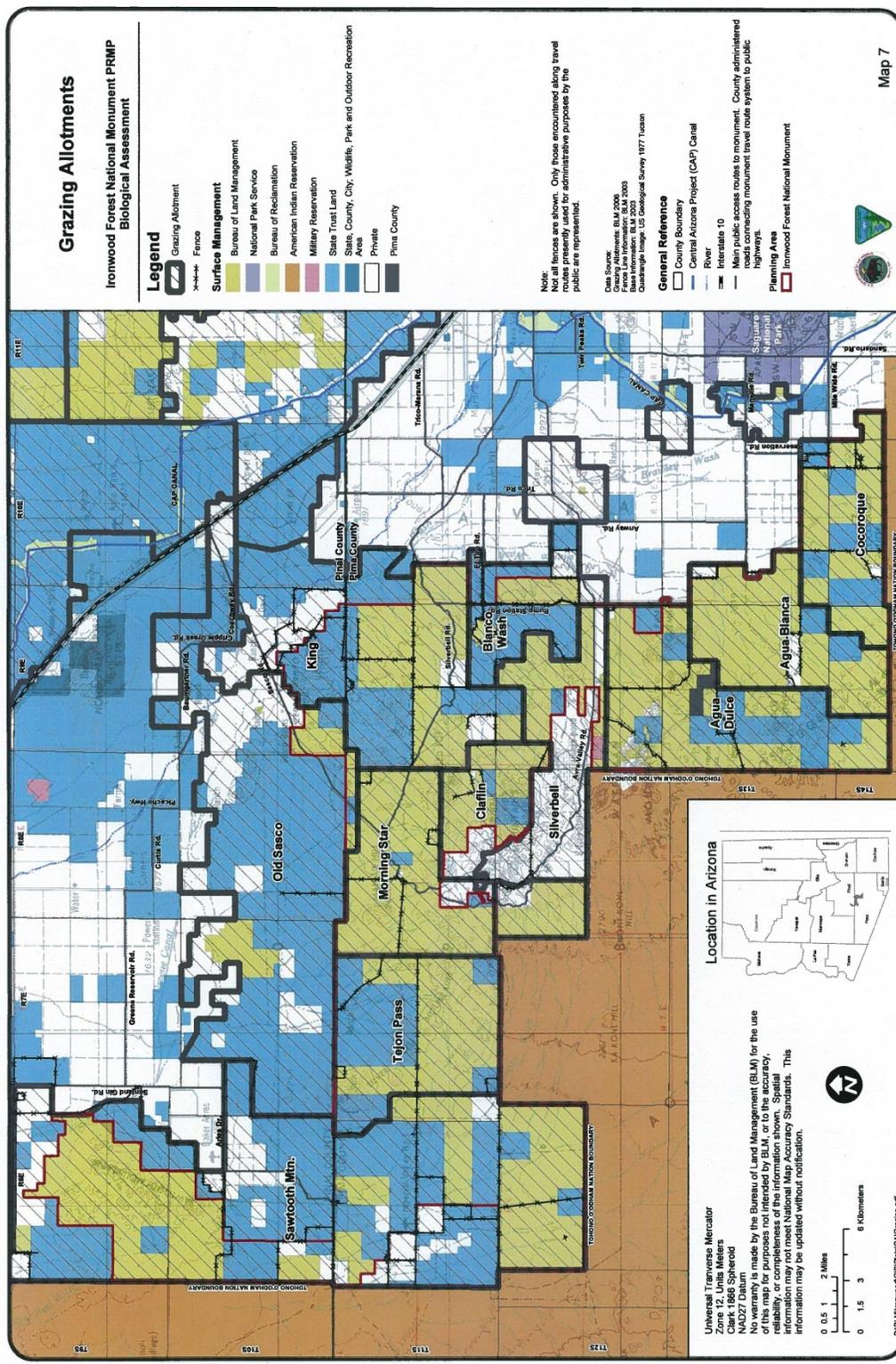


Table 2: Allotments Evaluated under Arizona Standards for Rangeland Health and Guidelines for Grazing Administration, Summary of Results

Allotment Number	Allotment Name	Total Acres ¹	BLM Acres ¹	Active AUMs	Evaluation Date	Condition of Range Improvements	Standards Met?			Grazing Management System
							1	2	3	
6010	Blanco Wash	10,020	2,278	195	2008	Good	Y	N/A	Y	Deferred Rotation
6020	Cocoraque	13,783	9,181	527	2008	Fair	Y	N/A	Y	Rest Rotation
6029	Clafin	8,646	6,036	437	02/09	Fair	Y	N/A	Y	Deferred Rotation
6060	Morning Star	8,646	16,430	0	3/29/09	Fair	Y	N/A	Y	Ephemeral
6068	Sawtooth Mountains	178,886	32,127	2,328	3/22/00	Poor	Y	N/A	Y	Deferred Rotation
6077	Tejon Pass	21,010	11,591	0	05/09	Fair	Y	N/A	Y	Ephemeral
6102	Old Sasco	43,074	4,471	384	3/22/00	Fair	Y	N/A	Y	Deferred Rotation
6126	Agua Dulce	18,021	16,144	814	2008	Fair	Y	N/A	Y	Rest Rotation
6153	King	26,801	12,737	1,452	3/29/99	Fair to Good	Y	N/A	Y	Rest Rotation
6183	Agua Blanca	16,784	14,419	1,356	2008	Good	Y	N/A	Y	Deferred Rotation
6203	Silver Bell	5,646	4,835	350	2008	Good	Y	N/A	Y	Deferred Rotation

SOURCES: U.S. Department of the Interior, Bureau of Land Management 2002; 2001a, 2001b; 2000a, 2000b, and 2009 a, b

NOTES: Standard 1 – Upland Sites N/A = not applicable
Standard 2 – Riparian-Wetland Sites Y = meets standard
Standard 3 – Desired Resource Condition N = does not meet standard

¹ Acreages: Acreages are approximate. The IFNM contains 128,398 acres of public (BLM-administered) land; the grazing allotments contain public land outside of the IFNM boundary.

Table 3: Proposed Grazing Authorization Status of the Allotments within the IFNM with Lesser Long-Nosed Bat and Nichol Turks Head Cactus Habitat

Allotment Number	Allotment Name	Grazing Authorization Status ¹	Active (Perennial) AUMs	Lesser Long-Nosed Bat Foraging Habitat	Nichol Turks Head Cactus habitat
6010	Blanco Wash	Perennial	195	Yes (saguars)	None
6020	Cocoraque	Perennial	527	Yes (saguars)	None
6029	Clafin	Perennial	437	Yes (saguars)	None
6060	Morning Star	Ephemeral	0	Yes (saguars)	None
6068	Sawtooth Mtns.	Perennial	2,328	Yes (saguars)	None
6077	Tejon Pass	Ephemeral	0	Yes (saguars)	None
6102	Old Sasco	Perennial	384	Yes (saguars)	None
6126	Agua Dulce	Perennial	814	Yes (saguars and agave)	Present
6153	King	Perennial	1,452	Yes (saguars)	None
6183	Agua Blanca	Perennial	1,356	Yes (saguars)	None
6203	Silver Bell	Perennial	350	Yes (saguars)	None
			Totals : 7,843		

SOURCES: U.S. Department of the Interior, Bureau of Land Management 2002a, 2001c, d, 2000a, b, and 2009 a, b

NOTES: ¹ Grazing Authorization Status

Ephemeral: Grazing is allowed only when precipitation patterns generate seasonal production of forage available for livestock.

Perennial: Grazing is authorized year-long at the grazing preference level.

Implementation-level decisions would provide for additional stock water sources in the Twin Tanks pasture (Agua Dulce grazing allotment) and Cocoraque Pastures (Cocoraque grazing allotment). Waters would be constructed to accommodate wildlife use. Current waters would be evaluated and modified as necessary to provide the maximum benefit and minimum negative impact on wildlife. Year-long water sources would be maintained in all livestock pastures and would ensure safe availability of water to wildlife. Water sources would be placed away from existing populations of priority plant species and habitats, and those found to be causing habitat deterioration would be moved or replaced. The number and variety of wildlife and livestock enclosures would be increased to represent various ecosystems. These enclosures would be monitored regularly and designed using standard design configurations in BLM manual H-1741-1. Existing roads along fence lines would remain open (administratively at a minimum) and accessible for inspection and maintenance. Access to corrals, wells, and water infrastructure would be maintained in a condition accessible to haul cattle, as necessary. Seasonal public closures of bighorn sheep lambing areas would not restrict livestock management operations.

2.2.14 Recreation

Recreation on the IFNM would be managed to produce a variety of quality recreation experiences in largely natural settings, while protecting natural and cultural resources and promoting safety and minimizing conflict among users.

The IFNM would be allocated as a special recreation management area of approximately 128,400 acres with a strategy for an undeveloped recreation tourism market; the existing resource conservation area and cooperative recreation management area would be discontinued. An emphasis would be placed on producing semi-primitive non-motorized recreation opportunities while continuing to provide semi-primitive motorized, roaded natural, and primitive recreation opportunities. Recreation management zones (RMZs) would be allocated as follows (Map 8):

- Semi-primitive non-motorized 57,450 acres

- Semi-primitive motorized 36,230 acres
- Roaded natural 18,380 acres
- Primitive 9,510 acres
- Ragged Top Watchable Wildlife (primitive) 6,780 acres

The level of visitor services would vary by zone; the greatest BLM staff presence would be within the roaded natural zone. Campfires would be allowed when firewood is from a source other than the IFNM.

Sites available for camping would be periodically reviewed and modified based on resource protection needs. Overnight, vehicle-based-camping would be permitted only in identified sites. Overnight, nonvehicle-based camping would be allowed throughout the monument, except where prohibited to protect resource values. Group camping in the monument would only be allowed at three identified large campsites at Manville Road, Reservation Road, and near the West Silver Bell Mountains.

Six areas within the semi-primitive motorized and roaded natural RMZs have been identified as access/staging areas for equestrian users. These areas are located at Manville Road, Avra Valley Road, Reservation Road, Silverbell Road, near the West Silver Bell Mountains, and from Aries Drive to the power line. The use and discharge of firearms would be prohibited except for authorized hunting and situations where a firearm is being legally used in self-defense. Target shooting would be prohibited within the IFNM.

A recreation monitoring program would conduct intensive baseline and follow-up surveys of recreation sites and activity areas. In addition, BLM would conduct resource condition, recreation use, and visitor surveys to determine if recreation and RMZ objectives are being achieved, and prescriptions are being maintained.