



United States Department of the Interior



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In Reply Refer To:
AESO/SE
22410-2009-F-0089-R4

December 15, 2011

Mr. Kurtis Guth
Deputy Director, Program Management Office
Office of Technology Innovation and Acquisition
U.S. Customs and Border Protection
Department of Homeland Security
1901 South Bell Street, 7th Floor, Room 716
Arlington, VA 20598

RE: Reinitiation of Formal Consultation on the SBInet Ajo-1 Tower Project, Ajo Area of Responsibility, U.S. Border Patrol, Tucson Sector, Arizona; Restoration of the Former SBInet TCA-AJO-189 Tower Site, Cabeza Prieta National Wildlife Refuge, U.S. Border Patrol, Ajo Station, Arizona.

Dear Mr. Guth:

Thank you for your request for reinitiation of formal consultation on the SBInet Ajo-1 Tower Project, Ajo Area of Responsibility, U.S. Border Patrol, Tucson Sector, Arizona. Your request was received by us on August 30, 2011, and was made pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). At issue are the possible effects of the proposed site restoration activities of the former TCA-AJO-189 tower site located on Growler Mountain in the Cabeza Prieta National Wildlife Refuge (CPNWR).

The U.S. Customs and Border Protection (CBP) found that only the endangered Sonoran pronghorn (*Antilocapra americana sonoriensis*) may be affected by the proposed restoration activities that are the subject of this reinitiation; hence, our previous analyses and conclusions stand regarding other listed species (see the SBInet Ajo-1 Tower Project Biological Opinion issued December 10, 2009 (file number 22410-F-2009-0089) for effects analyses and conclusions regarding other listed species). CBP determined that the proposed action may adversely affect the endangered Sonoran pronghorn and this species is the subject of this Biological Opinion (BO).

This BO is based on information provided in your request for reinitiation of consultation dated August 25, 2011; the August 2011 Final Restoration Plan for the Former *SBI*net TCA-AJO-189 Tower Site; the *SBI*net Ajo Tower Project Supplemental Environmental Assessment (SEA); the original December 10, 2009 BO for the *SBI*net Ajo Tower Project (22410-2009-F-0089); the BO related to the most recent reinitiation of the 2009 BO (Ajo Forward Operating Base Expansion – 22410-2009-F-0089R3); conversations and electronic correspondence with CBP staff; and other sources of information. Literature cited in this BO is not a complete bibliography of all literature available on the species addressed or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

CONSULTATION HISTORY

See the December 10, 2009, the March 15, 2010, the April 29, 2011, and the September 16, 2011 BOs on *SBI*net Ajo-1 Tower Project and associated reinitiations for the consultation history prior to September 6, 2011.

- September 6, 2011: U.S. Fish and Wildlife Service (FWS)-Arizona Ecological Services Office (AESO) received the Final Restoration Plan and CBP's request for reinitiation of formal section 7 consultation for the proposed project.
- October 11, 2011: Conference call among FWS (AESO and CPNWR) and CBP to discuss outstanding issues related to the proposed restoration activities.
- November 23, 2011: We provided a draft BO to CBP for review and comment.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

A complete description of the proposed action is found in your August 25, 2011 letter and the August 2011 Final Restoration Plan, and is incorporated herein by reference.

CBP proposes to restore a disturbed area approximately 35 feet X 35 feet (1,225 square feet) located on Growler Mountain in the CPNWR (Figures 1 and 2). During the *SBI*net project, the entire 1,225 square feet area was cleared of vegetation and graded, and a 14 feet X 14 feet hole was excavated to a depth of six feet. Subsequently, the original design for TCA-AJO-189 tower could not be implemented and the site was rendered unusable. As described in the proposed action of the 2011 *SBI*net Ajo Tower Project SEA, the former TCA-AJO-189 tower site will be rehabilitated to or near pre-project conditions.

Additionally, the proposed action includes associated U.S. Department of the Interior (DOI) agency approval through the issuance of a Special Use Permit by the U.S. Fish and Wildlife Service - CPNWR. CPNWR will issue the Special Use Permit to the Department of Homeland Security (DHS) for the restoration of and access to the former TCA-AJO-189 tower site and that action is

included within this BO; however as the lead action agency, CBP is consulting on the entire action. Herein, we revise the proposed action for our BO on the SBInet Ajo Tower Project to reflect the restoration of the proposed tower site, and furthermore revise the effects of the action and conclusion for the Sonoran pronghorn in the original BO to reflect this change in the proposed action. Sections not addressed or revised herein remain as presented in the original December 10, 2009 SBInet Ajo Tower Project BO (22410-2009-F-0089) and its subsequent reinitiations.

The initial phase of restoration efforts will include the remediation of the 14 feet X 14 feet hole. The hole will be backfilled with both off-site borrow material and native material excavated from the hole. Off-site borrow material will be obtained from Mission Material, located north of Gila Bend, Arizona. The off-site borrow material will be the first material placed in the hole, and the bottom 50 to 75 percent of the material will be compacted to a 95 percent compaction rate. Previously excavated material will then be used to backfill the remaining, upper portion of the excavated hole. All material will be transported by either a Bell 212 or UH1H helicopter. Following backfilling efforts, the entire 1,225 square feet area will be graded to match the adjacent natural grade. Earthmoving, backfilling, and grading will be completed with a bobcat (skid steer loader) and various attachments. Upon final grading of the disturbed area, native rocks originally removed from the site will be used to restore the natural landscape. Native rock will be sorted and those rocks with desert varnish or dark coloring will be selected for use. These rocks will be hand placed so the desert varnish is exposed and arranged in a natural pattern using the adjacent undisturbed landscape as a model. If a sufficient amount of native material with desert varnish cannot be obtained from previously excavated material, the rocks will be treated to create an artificial desert varnish appearance.

In an effort to determine pre-construction conditions at the site, vegetation sampling was conducted at an undisturbed site adjacent to the disturbed area to identify and characterize the revegetation target community. Perennial shrubs comprise the majority of the plant composition in the adjacent landscape. Revegetation efforts will focus on perennial shrubs and one saguaro (*Carnegiea gigantea*) that was removed from the disturbed area prior to vegetation clearing. A total of 248 plants will be planted within the disturbed area and will include the following species and numbers: triangle-leaf bursage (*Ambrosia deltoidea*; 240 plants); Fremont's wolfberry (*Lycium fremontii*; 4 plants); and cresotebush (*Larrea tridentata*; 4 plants). All plant material will be obtained from CPNWR to maintain a local plant source. Plant material will be obtained from harvesting cuttings from donor plants on the CPNWR. The specific location for harvesting cuttings will be approved by the CPNWR manager, but is anticipated to be the Childs Mountain Area. Cuttings of the appropriate species will be harvested in October 2011. The cuttings will be established and raised at a nursery. The cuttings will be ready for transplanting approximately 6 months from the date of harvest.

A total of 248 plants will be obtained from CPNWR and planted within the 1,225 square feet disturbed area on Growler Mountain. Additionally, one saguaro originally removed from the disturbed area will be transplanted back on-site as part of planting efforts. It is anticipated that planting activities would occur in April or May 2012. The plantings will be manually irrigated for a

period of five months beginning at the time of planting. A total of thirteen 250-gallon tanks on stands will be maintained on Growler Mountain adjacent to the site and will serve as storage for the irrigation water needed for this project. Personnel responsible for the irrigation efforts will access the site on foot. Irrigation equipment will be removed from the site after one year if the restoration effort results are accepted by FWS. The following watering schedule will be implemented: water every week (including initial watering at time of planting) during the first and second month (May and June 2012); water every two weeks during the third and fourth months (July and August 2012); water once a month during the fifth month (September 2012).

Monitoring efforts will coincide with irrigation visits to minimize the number of trips to the site and will occur during the same five month period. Monitoring and irrigation personnel will be the same individuals, and will access the site on foot. Personnel will access the site on foot up to 13 times (May through September 2012). The restoration site will be visited every week during the first and second month, every two weeks during the third and fourth months, and once during the fifth month to evaluate the condition of the plantings and conduct maintenance on the irrigation system. The condition of the plantings and irrigation system will be recorded. If exotic plant species that are not already established in surrounding landscape are encountered within the restoration action area, they will be documented and the Office of Technology Innovation and Acquisition (OTIA) will coordinate with FWS concerning corrective actions. Site photos will be taken to document conditions.

CBP has established a goal of a total of 174 plants (70 percent survival), including both planted and naturally recruited plants. Generally, plantings are not considered established until after the first full growing season; therefore, FWS and OTIA personnel will visit the restoration site 1 year from the date of planting to determine if restoration goals have been met. If the restoration results at the site are accepted by FWS, all irrigation material and fencing will be removed from the site within 30 days of the site visit.

Due to remote location of the restoration site, helicopter access will be required for all restoration activities with the exception of irrigation and monitoring. Due to the location of the restoration site in designated Wilderness and within the current range of the Sonoran pronghorn, OTIA has developed the Restoration Plan to include the minimal number of helicopter lifts necessary. A total of 90 helicopter lifts will be required to complete the restoration activities as described in the Restoration Plan. The following is an itemization of the helicopter lifts by activity: site rehabilitation and landscaping (68 lifts); irrigation including water delivery (14 lifts); revegetation (6 lifts); and project termination (2 lifts). All equipment and personnel, with the exception of irrigation and monitoring personnel, will be transported to the site via helicopter. An estimated 82 lifts will occur prior March 15, 2012; 6 lifts will occur between March 15 and July 31, 2012; and 2 lifts will occur in after July 31, 2012. In the event that additional lifts are required to complete the project, CBP will obtain guidance and authorization from FWS prior to conducting any additional lifts in order to avoid or minimize flight activity in Sonoran pronghorn habitat.

Conservation Measures

Measures inherent in the proposed project that will reduce impacts to listed species include: 1) the need for tower TCA-AJO-189, located within designated wilderness on CPNWR has been eliminated; and 2) 1,225 square feet of previously disturbed Sonoran Desert Scrub on Growler Mountain in the CPNWR will be restored.

Avoidance and minimization Best Management Practices (BMPs) will be implemented during the restoration of the former TCA-AJO-189 tower site. Measures to avoid, minimize, or mitigate potential impacts to listed species and their habitats are included in the *SBI*net Ajo Tower Project SEA and the Final Restoration Plan for the Former *SBI*net TCA-AJO-189 Tower Site. The measures are incorporated by reference in this BO. Additionally, BMPs were compiled through coordination with FWS and listed in the original *SBI*net Ajo-1 Tower Project Biological Opinion issued December 10, 2009 (File Number 22410-2009-F-0089) and subsequent reinitiations. Applicable and appropriate BMPs from these *SBI*net Ajo-1 tower project documents are incorporated by reference in this reinitiation, and are listed below.

Avoidance and Minimization Best Management Practices

- BMP-1 Minimize impacts to Sonoran pronghorn and their habitat by using flagging or temporary fencing to clearly demarcate project construction area perimeters. Do not disturb soil or vegetation outside of that perimeter.
- BMP-2 Minimize impacts to listed species and their habitats by using areas already disturbed by past activities for staging, parking, laydown, and equipment storage. If site disturbance is unavoidable, minimize the area of disturbance by scheduling deliveries of materials and equipment to only those items needed for ongoing project implementation.
- BMP-3 Minimize impacts to listed species and their habitats by limiting grading or topsoil removal to areas where this activity is absolutely necessary for construction, staging, or maintenance activities.
- BMP-4 Minimize impacts to listed species and their habitats by obtaining materials such as gravel or topsoil that are clean, from existing developed or previously used sources, not from undisturbed areas adjacent to the project area.
- BMP-5 Minimize the number of construction and maintenance trips to the restoration site.
- BMP-6 To minimize impacts to endangered species, CBP will follow a helicopter ingress/egress route to the project site that avoids or minimizes flight activity in Sonoran pronghorn habitat as specified by FWS. The Restoration Plan has been designed to include the minimum number of helicopter lifts necessary.

- BMP-7 All vehicular traffic associated with restoration efforts will use designated/authorized roads to access the sites, and avoiding off-road vehicle activity outside of the project footprint.
- BMP-8 Minimize potential animal collisions, particularly with Sonoran pronghorn, by not exceeding speed limits of 25 mph on all unpaved roads.
- BMP-9 Any collisions with Sonoran pronghorn will be reported to FWS-AESO via telephone and electronic mail as soon as practicable, but no later than 12 hours after the collision. Information to be relayed will include: a) location of the collision, b) date and time of the collision, c) type of vehicle, and d) a description of the collision to include the outcome and a photograph of the Sonoran pronghorn (if available).
- BMP-10 Place restrictions on restoration activities involving heavy equipment during the Sonoran pronghorn fawning season (March 15 to July 31) to avoid and minimize disturbance to females and fawns.
- BMP-11 During backfilling and grading, temporary noise impacts are possible. All applicable Occupational Safety and Health Administration regulations and requirements will be followed. Construction equipment will possess properly working mufflers and will be kept properly tuned to reduce backfires. Implementation of these measures will reduce the potential temporary noise impacts in and around the construction site.
- BMP-12 Avoid noise impacts during the night by conducting construction and maintenance during daylight hours only.
- BMP-13 Avoid nighttime lighting impacts by conducting construction and maintenance activities during daylight hours only.
- BMP-14 Provide for an on-site biological monitor to be present during work activities for all construction activities. The biological monitor will have the following duties: ensure and document that agreed upon measures to minimize and avoid impacts to listed species and BMPs are properly implemented, send a weekly summary report via electronic mail to the CPNWR and FWS-AESO following CBP review, and notify the construction manager (who has the authority to temporarily suspend activities) when construction activities are not in compliance with all agreed upon BMPs.
- BMP-15 The biological monitor shall report all detections of Sonoran pronghorn via electronic mail or phone to FWS-AESO and the CPNWR within 24 hours of any detection. The electronic mail will include the following details: a) if known, the coordinates and a description of the locations where the pronghorn was detected, b) the date and time of the detection, c) the method use to make the detection, and d) as available, other pertinent details, such as the behavior of the Sonoran pronghorn (i.e. was it standing, foraging or running).

- BMP-16 All project personnel will report detections of Sonoran pronghorn to the biological monitor.
- BMP-17 Salvage, transplantation, and container planting will be done in accordance with a restoration plan, approved by the land manager and FWS, that includes success criteria and monitoring.
- BMP-18 All plant material will be obtained from the CPNWR to maintain a local plant source. Plant material will be obtained from harvesting cuttings from donor plants at locations identified by CPNWR personnel.
- BMP-19 Fill material (gravel and topsoil) brought in from outside the project area will be identified by its source location. Sources will be used that are clean and weed-free.
- BMP-20 Certified weed/seed-free natural materials (e.g., straw) will be used for on-site erosion control to avoid the spread of non-native plants.
- BMP-21 The site will be surveyed for the presence of exotic plant species. If exotic plant species that are not already established in the surrounding landscape are encountered within the restoration action area, they will be documented and OTIA will coordinate with FWS (CPNWR) concerning corrective actions.
- BMP-22 All irrigation components will be temporary and removed when the restoration goals are met. Irrigation equipment will be removed from the site after one year following the initial planting if the site, pending acceptance of the restoration results at the site by FWS (CPNWR).
- BMP-23 FWS (CPNWR) will be notified two weeks before any project construction activities begin and within one week after project construction activities are completed.
- BMP-24 Standard construction procedures will be implemented to minimize the potential for erosion and sedimentation during construction. All work shall cease during heavy rains and would not resume until conditions are suitable for the movement of equipment and material.
- BMP-25 Environmental design measures will be implemented, such as straw wattles and wetting compounds to decrease erosion and sedimentation.
- BMP-26 Pets will not be permitted inside the project area or adjacent native habitats. This BMP does not pertain to law enforcement animals.

- BMP-27 Minimize site disturbance and avoid attracting predators by promptly removing waste materials, wrappers, and debris from the site. Any waste that must remain more than 12 hours will be properly stored until disposal.
- BMP-28 Avoid soil contamination by using drip pans underneath equipment and containment zones when refueling vehicles or equipment.
- BMP-29 Where handling of hazardous and regulated materials does occur, collect and store all fuels, waste oils, and solvents in clearly labeled tanks and drums within a secondary containment system that consists of an impervious floor and bermed sidewalls capable of containing the volume of the largest container stored therein.
- BMP-30 All BMPs to be implemented by the project contractor will be included in the contract.

STATUS OF THE SPECIES

Description, Legal Status, and Recovery Planning

No changes from the original *SBI*net Ajo-I Tower Project BO issued December 10, 2009 (File Number 22410-2009-F-0089).

Life History and Habitat

No changes from the original *SBI*net Ajo-I Tower Project BO issued December 10, 2009 (File Number 22410-2009-F-0089).

Distribution and Abundance

A map of the historical range of Sonoran pronghorn in the United States and Mexico is included as Figure 3 of this BO.

United States

No changes from the original *SBI*net Ajo-I Tower Project BO issued December 10, 2009 (File Number 22410-2009-F-0089) or the updates from the third reinitiation BO issued September 16, 2011 (File Number 22410-2009-F-0089-R3).

Mexico

No changes from the original *SBI*net Ajo-I Tower Project BO issued December 10, 2009 (File Number 22410-2009-F-0089).

Population Viability Analysis

No changes from the original SBInet Ajo-I Tower Project BO issued December 10, 2009 (File Number 22410-2009-F-0089).

Threats

Barriers that Limit Distribution and Movement

No changes from the third reinitiation SBInet Ajo-I Tower Project BO issued September 16, 2011 (File Number 22410-2009-F-0089-R3).

Human-caused Disturbance

No changes from the third reinitiation SBInet Ajo-I Tower Project Biological Opinion issued September 16, 2011 (File Number 22410-2009-F-0089-R3).

Habitat Disturbance

No changes from the third reinitiation SBInet Ajo-I Tower Project Biological Opinion issued September 16, 2011 (File Number 22410-2009-F-0089-R3).

Fire

No changes from the original SBInet Ajo-I Tower Project Biological Opinion issued December 10, 2009 (File Number 22410-2009-F-0089).

Drought and Climate Change

No changes from the original SBInet Ajo-I Tower Project Biological Opinion issued December 10, 2009 (File Number 22410-2009-F-0089).

Small Population Size and Random Changes in Demographics

No changes from the original SBInet Ajo-I Tower Project Biological Opinion issued December 10, 2009 (File Number 22410-2009-F-0089).

Disease

No changes from the original SBInet Ajo-I Tower Project Biological Opinion issued December 10, 2009 (File Number 22410-2009-F-0089).

ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR § 402.02) define the environmental baseline as the 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 from which to assess the effects of the action now under consultation.

Action Area

No changes from the original *SBI*net Ajo-I Tower Project Biological Opinion issued December 10, 2009 (File Number 22410-2009-F-0089). The action area for this BO is defined as the current range of the pronghorn within the U.S. (Figure 4 of this BO).

Terrain, Vegetation Communities, and Climate in the Action Area

No changes from the original *SBI*net Ajo-I Tower Project Biological Opinion issued December 10, 2009 (File Number 22410-2009-F-0089).

Status of the Sonoran Pronghorn in the Action Area

No changes from the third reinitiation *SBI*net Ajo-I Tower Project Biological Opinion issued September 16, 2011 (File Number 22410-2009-F-0089-R3).

Past and Ongoing Non-Federal Actions in the Action Area

No changes from the third reinitiation *SBI*net Ajo-I Tower Project Biological Opinion issued September 16, 2011 (File Number 22410-2009-F-0089-R3).

Past and Ongoing Federal Actions in the Action Area

No changes from the third reinitiation *SBI*net Ajo-I Tower Project Biological Opinion issued September 16, 2011 (File Number 22410-2009-F-0089-R3), including the subject of that reinitiation, the expansion of the Ajo Forward Operating Base.

Summary of Activities Affecting Sonoran Pronghorn in the Action Area

No changes from the third reinitiation *SBI*net Ajo-I Tower Project Biological Opinion issued September 16, 2011 (File Number 22410-2009-F-0089-R3).

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 proposed 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.

The proposed action is a remediation requirement for impacts that occurred at the TCA-AJO-189 tower site. Therefore, the restoration of the former TCA-AJO-189 tower site is interrelated to the elimination of the need for tower TCA-AJO-189 discussed in the 2011 *SBI*net Ajo Tower Project SEA. The elimination of the need to construct, operate, and maintain a communication and sensor tower within designated wilderness on CPNWR has led to the consideration of the proposed action. Despite the potential for some short-term direct impacts, the implementation of the action described below, when compared to the effects of constructing and operating tower TCA-AJO-189 described in the original BO, will have an overall reduction in impacts on Sonoran pronghorn.

The Sonoran pronghorn is expected to be affected both directly and indirectly by the proposed action. Short-term, direct adverse effects include disturbance of Sonoran pronghorn from noise and visual stimuli associated with tower site remediation and landscaping, irrigation, monitoring, and helicopter access. There is also some potential for increased risk of collision with project monitoring vehicles. Long-term, indirect adverse effects to Sonoran pronghorn may include the introduction of non-native species through project activities. Implementation of avoidance, minimization, and conservation measures will help minimize adverse effects to Sonoran pronghorn resulting from the project. The proposed action may result in the long-term reduction of some potential impacts on Sonoran pronghorn when compared to the long-term construction and operation effects that would occur if the proposed *SBI*net tower had been constructed.

Disturbance to Sonoran pronghorn as a result of the project will occur within CPNWR, a key area to the survival and recovery of the U.S. population of pronghorn. CPNWR is an essential area for pronghorn, particularly during the fawning period and annual spring warming-drying trend (i.e., pronghorn use CPNWR under conditions of greatest thermal and hydration stress). Because the Sonoran pronghorn is endangered and the population has failed to increase to a sustainable number in over 40 years, any effects to individual pronghorn have the potential to affect the species as a whole.

Sonoran pronghorn are sensitive to human disturbance (Luz and Smith 1976; Hughes and Smith 1990; Workman *et al.* 1992; Landon *et al.* 2003; Krausman *et al.* 2004). Human traffic, such as a person walking or running past pronghorn in an enclosed pen, a motorcycle driving past, a truck driving past, a truck blowing its horn while driving past, or a person entering a holding pen, caused

an increased heart-rate response in American pronghorn in half-acre holding pens (Workman et al. 1992). The highest heart rates occurred in female pronghorn in response to a person entering a holding pen, or a truck driving past while sounding the horn. The lowest heart rates occurred when a motorcycle or truck was driven past their pen. Pronghorn were more sensitive to helicopters, particularly those flying at low levels or hovering, than fixed wing aircraft. Luz and Smith (1976) observed pronghorn reactions to overhead helicopter flights which suggested mild disturbance (muscle tensing and interruption of grazing) by helicopter noise levels at approximately 60 A-weighted decibels (dBA) and strong reaction (running) at approximately 77 dBA.

Evaluating noise effects on pronghorn from anthropogenic factors is difficult, and human caused noise is difficult to assess separately from its visual appearance. Landon *et al.* (2003) found that, in areas with noise produced by military aircraft, Sonoran pronghorn used the lowest noise level area more than the higher noise level areas. Disturbance and flight of ungulates are known to result in a variety of physiological effects that are adverse, including elevated metabolism, lowered body weight, reduced fetus survival, and withdrawal from suitable habitat (Geist 1971, Harlow *et al.* 1987), which may be exacerbated in harsh environments, such as those occupied by Sonoran pronghorn. Disturbance may also lead to increased risk of predator attack, susceptibility to heat stress and malnutrition, and abandonment of fawns. Behavioral responses such as interrupted activity, vigilance, alert distance, flight distance, and displacement have been used to assess reactions of bighorn sheep to disturbance (Papouchis *et al.* 2001, Jansen *et al.* 2006). When compared to physiological stress responses, such as increased heart rate, increased serum cortisol levels, and fecal and urinary corticosteroid levels (MacArthur *et al.* 1979, Miller *et al.* 1991, MacArthur *et al.* 1982, Stemp 1983, Harlow *et al.* 1987, Hayes *et al.* 1994, and Keay *et al.* 2006), bighorn sheep have been shown to have a pronounced physiological stress response to disturbance without showing an overt behavioral response (MacArthur *et al.* 1982, Stemp 1983).

Vehicle traffic is disturbing to pronghorn and will often cause flight or startle responses with associated adverse physiological changes. Ground-based activities can destroy or degrade forage and cover, and result in behavioral or physiological changes that may be detrimental (Geist 1971, Freddy *et al.* 1986, Workman *et al.* 1992). In a previous biological opinion (consultation number 02-21-95-F-0114) ground-based activities, such as those of troops and vehicles at ground-support areas, were determined to adversely affect pronghorn habitat use. Hughes and Smith (1990) found that a Sonoran pronghorn immediately ran 1,310-1,650 feet from a vehicle. Krausman *et al.* (2001 and 2004) found that Sonoran pronghorn reacted to human ground-based stimuli (vehicles and foot traffic) with a change in behavior, including occasionally running or trotting away. Wright and deVos (1986) noted that Sonoran pronghorn exhibit “a heightened response to human traffic” as compared to other subspecies of pronghorn.

Favorable rainfall and forage conditions for pronghorn population growth occurred from 2005-2010. Additionally, 62 pronghorn have been released from the semi-captive breeding pen into the wild population as of April 2011, and forage and water have been provided via several artificial water sources and forage enhancement plots. Nonetheless, the population stayed fairly static during this period (58 pronghorn in 2004, 68 in 2006, 68 in 2008, and 85 in 2011). At 85 animals, this is still a precariously small population. For this population to increase and ultimately recover, other

stressors need to be addressed. If drought and human caused disturbance and habitat degradation within the Sonoran pronghorn range in Arizona continue at their current level, Sonoran pronghorn in Arizona may only continue to survive as a result of captive breeding efforts and providing supplemental feed and water for the wild pronghorn population. A significant reduction in disturbance to pronghorn and their habitat is critical to the continued survival and recovery of this species.

Effects from Former TCA-AJO-189 Tower Site Restoration

Transport of materials and personnel necessary to rehabilitate the tower site will require the use of helicopters flying over pronghorn habitat. Currently, a total of up to 90 lifts will be required over the course of the project. The primary sources of project-related disturbance will be noise and visual stimuli from the helicopter lifts to the project site, and from heavy equipment grading and backfilling within the 1,225 square foot project area. A very minor increase in vehicle activity on established roads within the range of the Sonoran Pronghorn may also disturb pronghorn; however, vehicle disturbance will likely be very minimal given that the majority of mobilization will occur via helicopter, and revegetation monitors will access the project site on foot.

The proposed rehabilitation of the former tower site at TCA-AJO-189 extends into the pronghorn fawning season (March 15 to July 31), which may have an adverse affect on the Sonoran pronghorn. Impacts to individual pronghorn will likely be able to be avoided through the use of an on-site biological monitor and the implementation of the proposed conservation measures. It is anticipated that any adverse effects to migration habitat, behavior, and individuals would be minimal. No effects are anticipated to important habitat areas or overall pronghorn habitat suitability. The additional noise and human activities associated with the proposed action could have increased adverse effects on behavior and individuals during the Sonoran pronghorn fawning season; however, substantial impacts to fecundity or mortality are not anticipated due to the implementation of project avoidance and minimization BMPs and because the helicopter flight path established as part of the original section 7 consultation for the SBInet Ajo-1 Tower Project, which was originally selected to minimize the impacts of the overflights in sensitive pronghorn use areas, will be used. Noise, human presence, and vehicles associated with grading and backfilling (construction) of the former tower site may cause short-term disturbance to Sonoran pronghorn; however, restoration activities at former tower site TCA-AJO-189 are not expected to significantly disturb pronghorn through implementation of project avoidance and minimization BMPs, and because the project area is located in steep, rugged terrain outside of immediate pronghorn habitat.

Disturbance to Sonoran pronghorn – Direct Effects

Human activity and noise associated with construction may result in disturbance to Sonoran pronghorn. This disturbance can cause pronghorn to startle and/or flee, travel further distances to find suitable foraging, watering, and resting areas, and result in stress and short-term denial of access to habitat, all of which can result in adverse physiological effects or injury to pronghorn. Fleeing behavior can cause fawns to be abandoned or separated from their mothers, which can leave them vulnerable to predator attack or cause physiological stress that results in death. Disturbance

associated with construction will be short-term, and avoidance and conservation measures will be implemented to avoid and minimize adverse effects to Sonoran pronghorn to the extent possible. Per BMP-10 (restricting construction activity during the fawning season), CBP will complete earth moving and heavy construction activities, and irrigation installation before the beginning of pronghorn fawning season on March 15. Other measures to avoid and minimize direct adverse effects to Sonoran pronghorn include: BMP-1 (flagging or temporary fencing the project construction area); BMP-2, BMP-3, and BMP-4 (minimizing ground disturbance); BMP-5 (minimizing the number of construction and maintenance trips to the site); BMP-6 (minimizing helicopter flights); BMP-7 (prohibiting off-road activity); BMP-8 (maintaining a 25 mph speed limit); BMP-11 and BMP-12 (minimizing and avoiding noise); BMP-13 (avoiding nighttime lighting); BMP-14, BMP-15, and BMP-16 (providing an on-site biological monitor who will coordinate with agencies to detect and report pronghorn in the vicinity).

Human disturbances can be particularly detrimental during certain critical periods of a pronghorn's life or during the year when animals are in poor condition or more vulnerable to injury. Sonoran pronghorn are particularly susceptible to stress caused by disturbance during the fawning season due to increased energetic demands during this period. Disturbance may result in fawn and adult mortality, particularly during drought years, due to the low availability of forage and water resources and consequent decreased fitness of adults and fawns. Furthermore, as noted above, disturbance during the fawning season may cause fawns to be separated from their mothers which can also result in death. CBP and CPNWR are coordinating to reduce the level of project activity required during the fawning season. Per BMP-12, CBP will complete construction activities at the former tower site before the beginning of pronghorn fawning season on March 15. This includes all grading and earthmoving activities, irrigation installation, and a majority of the 90 helicopter lifts will occur prior to the fawning season. Despite these measures, some project activities, such as planting, irrigation and monitoring, and approximately six helicopter flights will occur during the Sonoran pronghorn fawning season. Therefore, we anticipate these activities, when compared to the other activities that will occur during the non-fawning season, may adversely affect pronghorn to a greater degree. BMP-5, BMP-6, BMP-10, and BMP-14 will be implemented to avoid and minimize adverse effects to Sonoran pronghorn to the extent possible during this critical period. Additionally, in the event that additional lifts are required to complete the project, CBP will obtain guidance and authorization from FWS prior to conducting any additional lifts in order to avoid or minimize flight activity in Sonoran pronghorn habitat.

Due to the extremely low population numbers and endangered status of this species, there is no research on the physiological impacts of human activities on Sonoran pronghorn, and baseline levels of stress for this species are not currently known. Most researchers agree, however, that noise can affect an animal's physiology and behavior, and if it becomes a chronic stress, noise can be injurious to an animal's energy budget, reproductive success and long-term survival (Radle 1998, Kaseloo and Tyson 2004). The potential for project construction to cause physiological stress to pronghorn is expected to be short-term and minor. Pronghorn may be exposed to noise arising from construction activities at the former tower site; however, the level of construction noise will be reduced through BMP-11, and the duration of construction noise will be minimized per BMP-12. Sonoran pronghorn may be adversely affected by noise and visual impacts of helicopter overflights.

Disturbance to pronghorn is anticipated to result from helicopter flights abruptly approaching and startling pronghorn, which may result in injury or energetic stress, particularly during drought. The direct effects of these activities could include stress, injury, or death to Sonoran pronghorn. Project related helicopter access will likely result in short-term visual and auditory disturbance of pronghorn. However, CBP will significantly minimize this disturbance by implementing BMP-6 (following helicopter ingress and egress routes specified by the CPNWR [these routes avoid frequently used pronghorn habitat]) and BMP-12 (conducting project activities during daylight hours); as well as BMP-5 and BMP-14. Additionally, as mentioned above, the majority (approximately 93%) of proposed helicopter lifts will occur outside of the fawning season.

Monitoring and irrigation personnel will access the site on foot up to 13 times over a 5-month period. Mobilization for this effort will require some increase in vehicle traffic on established unpaved roads in the action area. The total number of trips necessary constitutes a very minor increase in current road use levels. Potential direct effects along the access roads arise from traffic noise and collision with pronghorn. Implementation of BMP-2, BMP-5, BMP-7, and BMP-8 will reduce the likelihood of disturbing pronghorn in the area. Additionally, BMP-9 requires any collisions with pronghorn to be documented and reported to FWS.

Disturbance to Sonoran pronghorn – Indirect Effects

The proposed restoration of the former TCA-AJO-189 tower sight will have no indirect effects to Sonoran pronghorn, because measures will be implemented to avoid disturbance of Sonoran pronghorn. The additional, long-term effects to pronghorn associated with the maintenance and operation of the *SBI*net tower in the project area will not occur due to the elimination of this site as a viable tower site.

Habitat Loss and Degradation-Direct Effects

The proposed restoration of the former TCA-AJO-189 tower site will not result in any additional habitat loss or degradation beyond what already occurred during site preparation for the proposed tower. The proposed project will restore 1,225 square feet of previously disturbed Sonoran Desert Scrub on Growler Mountain in the CPNWR to functionally and visually native habitat. Implementation of BMP-1 and BMP-10 will minimize disturbance to pronghorn habitat outside of the construction footprint. Although the project will result in a relatively small increase in native Sonoran Desert vegetation, there will be no direct increase in cover or forage resources for Sonoran pronghorn because the site occurs in steep, rugged terrain generally not used by pronghorn.

Habitat Loss and Degradation – Indirect Effects

Non-native plants often thrive in disturbed areas (Tellman 2002); hence, construction activities could encourage the spread and establishment of these plants. Specifically, the 1,225 square feet of disturbed ground is susceptible to colonization by invasive non-native plants such as buffelgrass, Sahara mustard, and rocketsalad (*Eruca vesicaria*). Once backfill has been added and the area is re-graded and irrigated, there is an increased potential for non-native colonization. Non-native species

could spread to other areas and may outcompete native species upon which pronghorn rely, or carry fire which could impact pronghorn habitat. The colonization and spread of non-native plants will be minimized by the implementation of a number of measures. Per BMP-21, the site will be surveyed for the presence of exotic plant species. If exotic plant species that are not already established in the surrounding landscape are encountered within the restoration action area they will be documented and OTIA will coordinate with FWS concerning corrective actions. Additionally, the potential for spread of non-native plants will be reduced through implementation of BMP-19, BMP-20.

Limited erosion is expected during and immediately following construction activities. However, erosion and changes to natural hydrology will be minimized through implementing standard construction procedures to minimize potential for erosion and sedimentation (BMP-24), and through environmental design measures to decrease erosion and sedimentation (BMP-25). Restoration would not directly impact wetlands, waters of the United States, surface waters, or floodplains because none occur at the former tower site location.

Injury or Mortality from Collisions with Construction and Maintenance Vehicles

Vehicles associated with project activities can collide with pronghorn causing injury and/or death. The risk of vehicle related collisions will be minimized because helicopter access will be required for most project activities, including all equipment transportation and construction activities. There will be approximately 13 vehicle trips within the action area. Given the level of vehicle activity, the likelihood of pronghorn being struck by a vehicle is very low. The risk of collisions will be minimized through implementation of BMP-5 (minimizing the number of trips to the tower site); BMP-7 (using authorized roads and avoiding off-road activity); BMP-8 (maintaining a 25 mph speed limit). Additionally, BMP-9 requires any collisions with pronghorn to be documented and reported to FWS.

Effects from USBP Operations

No changes from the third reinitiation SBInet Ajo-1 Tower Project BO issued September 16, 2011 (File Number 22410-2009-F-0089-R3).

Effects of Best Management Practices and Offsetting Measures

No changes from the third reinitiation SBInet Ajo-1 Tower Project BO issued September 16, 2011 (File Number 22410-2009-F-0089-R3).

Changes in Pronghorn Status with the Project

No changes from the third reinitiation SBInet Ajo-1 Tower Project BO issued September 16, 2011 (File Number 22410-2009-F-0089-R3).

Effects from DOI's Actions

No changes from the original *SBI*net Ajo-I Tower Project Biological Opinion issued December 10, 2009 (File Number 22410-2009-F-0089).

In conclusion, although some aspects of the proposed action may result in short-term impacts to Sonoran pronghorn in the U.S., these impacts are not anticipated to significantly affect the reproduction, numbers, and distribution of Sonoran pronghorn. The long-term reduction in effects provided by elimination of the need for tower TCA-AJO-189, located within designated wilderness on CPNWR, and CBP's commitment to implement avoidance and minimization BMPs will help to ensure that these impacts do not significantly affect the reproduction, numbers, and distribution of Sonoran pronghorn, and thus not appreciably reduce the likelihood of the survival and recovery of the species in the wild.

CUMULATIVE EFFECTS

No changes from the third reinitiation *SBI*net Ajo-I Tower Project Biological Opinion issued September 16, 2011 (File Number 22410-2009-F-0089-R3).

CONCLUSION

After reviewing the current status of the Sonoran pronghorn; the environmental baseline for the action area, the effects of the proposed activities, and the cumulative effects, we reaffirm our biological opinion that the proposed action is not likely to jeopardize the continued existence of the Sonoran pronghorn. No critical habitat has been designated for this species; therefore, none will be affected. Our conclusion is based on the rationale given in the original *SBI*net Ajo-I Tower Project BO and subsequent reinitiations, our discussion in this document found in the "Effects of the Action" section above, and the following:

- 1) The project will not affect Sonoran pronghorn habitat.
- 2) Although we anticipate that activities associated with the proposed restoration action may result in disturbance to pronghorn, the proposed conservation measures and BMPs will adequately reduce the potential for adverse effects to the pronghorn. The elimination of the need to construct, operate, and maintain a communication tower in designated wilderness on CPNWR provides an overall reduction of adverse affects to the species.

The conclusions of this biological opinion are based on full implementation of the project as described in the "Description of the Proposed Action" section of this document, including any conservation measures that were incorporated into the project design, as well as the appropriate conservation measures found in the original BO and subsequent reinitiations.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation 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 defined 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 (50 CFR 17.3). "Harass" is defined 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 (50 CFR 17.3). "Incidental take" is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

AMOUNT OR EXTENT OF TAKE

No changes from the original *SBI*net Ajo-I Tower Project Biological Opinion issued December 10, 2009 (File Number 22410-2009-F-0089).

EFFECT OF THE TAKE

No changes from the original *SBI*net Ajo-I Tower Project Biological Opinion issued December 10, 2009 (File Number 22410-2009-F-0089).

REASONABLE AND PRUDENT MEASURES

No changes from the original *SBI*net Ajo-I Tower Project Biological Opinion issued December 10, 2009 (File Number 22410-2009-F-0089).

TERMS AND CONDITIONS

No changes from the original *SBI*net Ajo-I Tower Project Biological Opinion issued December 10, 2009 (File Number 22410-2009-F-0089).

CONSERVATION RECOMMENDATIONS

No changes from the reinitiation *SBI*net Ajo-I Tower Project Biological Opinion issued September 16, 2011 (File Number 22410-2009-F-0089-R3).

REINITIATION NOTICE

This concludes formal consultation on the action(s) outlined in the reinitiation 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.

For further information, please contact Scott Richardson of our Tucson Suboffice at (520) 670-6150 (x 242) or Jean Calhoun (x 223). Please refer to the consultation number, 22410-2009-F-0089-R4 in future correspondence concerning this project.

Sincerely,

/s/ Jean Calhoun for
Steven L. Spangle
Field Supervisor

Enclosure: Figures 1-4

cc (hard copy):

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Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ
Refuge Manager, Cabeza Prieta National Wildlife Refuge, Ajo, AZ

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Figure 4 – *SBI*net Ajo Tower Project Action Area

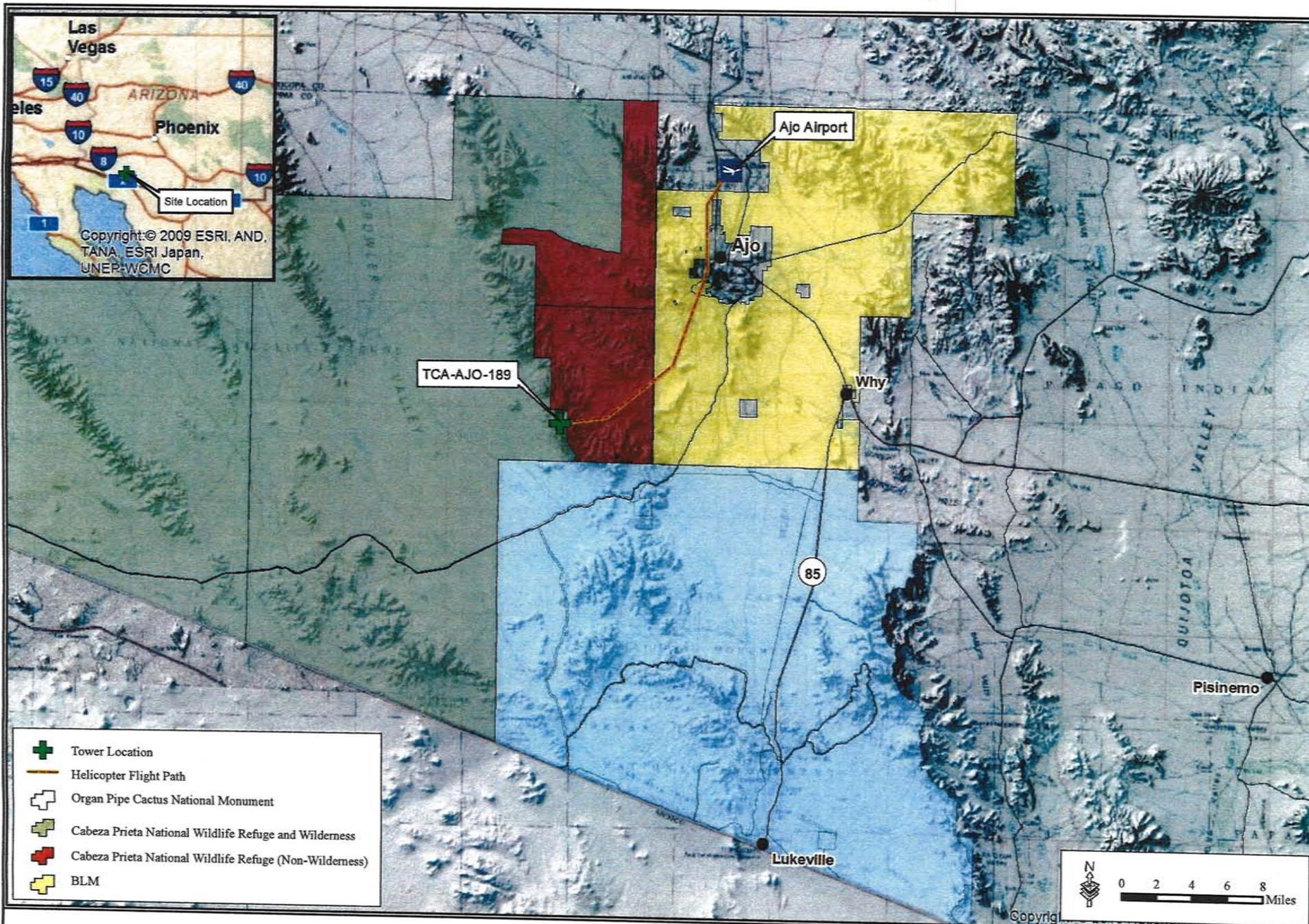


Figure 1 – Vicinity Map

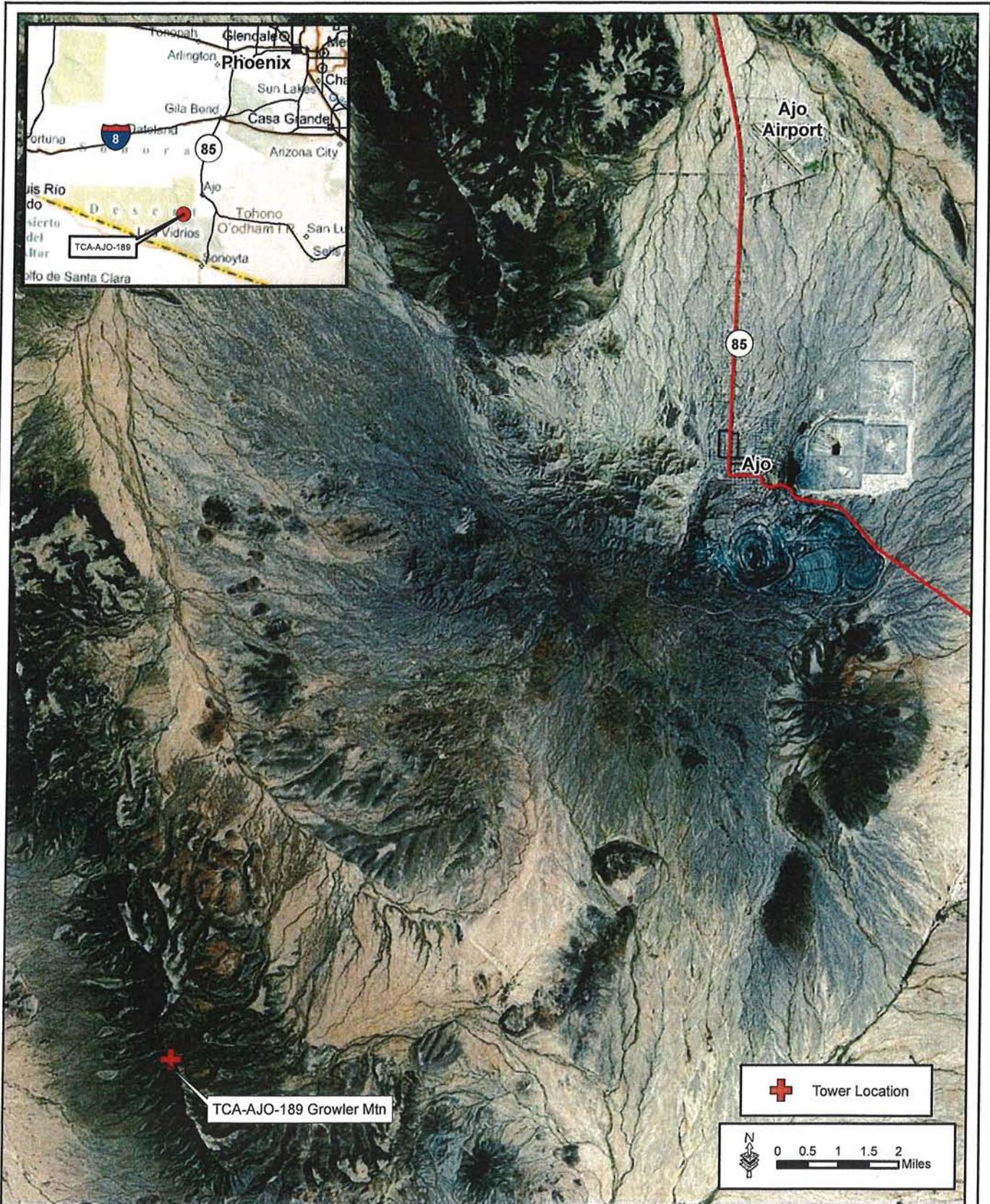


Figure 2 – Location Map

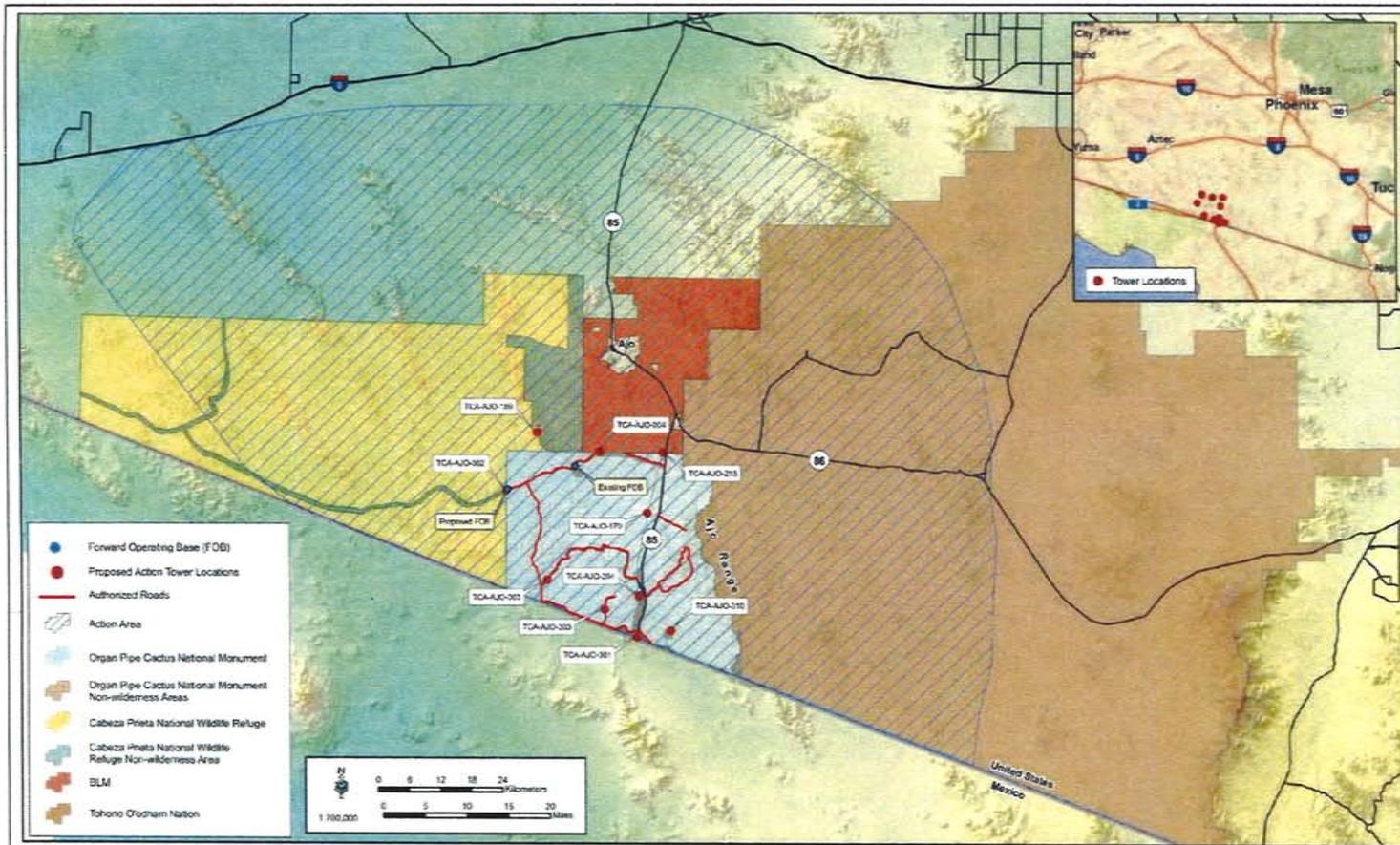


Figure 4 – SBinet Ajo Tower Project Action Area