3.3.2.5 Jaguar

There has been one official account of the jaguar within the Tucson AO. This account occurred within the Baboquivari Mountains in 1996 (Figure 3-3b). Southern Arizona exists along its northernmost historical range. By nature, this species is a reclusive nomad known to roam extensive areas of its range.

Patrol Road Activities

Patrol roads in the station's AO are located (b) (7)(E) of the Baboquivari Mountains where the jaguar sighting was reported. An encounter between the USBP and jaguar is highly unlikely. Therefore, no effects to the jaguar are anticipated.

Drag Road Activities

All drag roads are located (b) (7)(E) of the Baboquivari Mountains; therefore, no effects to the jaguar are expected.

Off-road Operations

Off-road activities include the use of 4-wheel drive vehicles, dirt bikes, and foot patrols and (b) (7)(E). Off-road activities might cause the jaguar to flee temporarily, but this response would not be expected to cause any detrimental effects.

Air Operations

Under certain emergency operation activities within the station's AO, it is possible that the jaguar could experience disturbances from helicopter overflights. However, due to the limited sightings and nomadic nature of the jaguar, any effects resulting from air operations should be infrequent and temporary; therefore, no adverse effects to the jaguar are anticipated.

Sensors

(b) (7)(E) no effects to the jaguar are anticipated as a result of this project.

Checkpoints and Observation Points

The Tucson Station currently (b) (7)(E) no impacts to the jaguar would occur from such activities.

3.3.3 Conclusions

The determinations of affects for each Federally protected species occurring in the Tucson Station's AO are discussed by operation in the following paragraphs and are summarized in Table 3-3.

Table 3-3
Effects Determination Matrix for Federally Protected Species
Within the Tucson Station's Area of Operations

Protected Species	USBP Activities/Operations					
	Patrol Roads	Drag Roads	Off-Road	Air	Sensors	Check Points
Cactus Ferruginous Pygmy-owl	NLAA	NE	NLAA	NLAA	NE	NE
Pima Pineapple Cactus	NE	NE	NLAA	NE	NLAA	NE
Masked Bobwhite Quail	NLAA	NE	NLAA	NLAA	NE	NE
Chiricahua Leopard Frog	NE	NE	NLAA	NE	NE	NE
Jaguar	NE	NE	NLAA	NLAA	NE	NE

Legend:
NE = no effect
NLAA = may affect, not likely to adversely affect
LAA = may affect, likely to adversely affect

Patrol road operations may affect, but are not likely to adversely affect the cactus ferruginous pygmy-owl or the masked bobwhite quail. Effects to the cactus ferruginous pygmy-owl would primarily result from disturbances to the species and are expected to be temporary or infrequent. It was determined that effects may occur to masked bobwhite quail as a result of a USBP vehicle/quail collision; however, a collision between a USBP vehicle and quail would likely be infrequent. Patrol road operations would not have an effect on the Pima pineapple cactus because (b) (7)(E). Patrol roads would have no effect on the Chiricahua leopard frog or jaguar because (b) (7)(E)

Drag road operations would have no effect on the cactus ferruginous pygmy-owl, Pima pineapple cactus, masked bobwhite quail, Chiricahua leopard frog, or the jaguar. Because dragging operations occur (b) (7)(E) it is unlikely that drag road operations would disturb an owl or quail, or that a USBP vehicle would collide with either during drag road preparation. Drag road operations would have no effect on the Pima pineapple cactus because activities (b) (7)(E)

Off-road operations may affect, but are not likely to adversely affect the cactus ferruginous pygmy-owl, Pima pineapple cactus, masked bobwhite quail, Chiricahua leopard frog, or the jaguar. These operations may disturb the four animal species listed for the Tucson Station; however, these disturbances should be temporary and infrequent. Off-road operations could degrade the habitat utilized by these four species. Off-road operations could directly harm an individual Pima pineapple cactus or degrade its habitat, but would not cause an adverse affect.

Air operations may affect, but are not likely to adversely affect the cactus ferruginous pygmy-owl, masked bobwhite quail, or the jaguar. Effects would result from disturbances to any of the species from helicopter overflights. Air operations would have no effect on the Pima pineapple cactus and Chiricahua leopard frog. Air operations would not create any ground disturbance; therefore, there is no potential for this operation to affect either of these species.

Because the Tucson Station currently (b) (7)(E) there would be no effect to the cactus ferruginous pygmy-owl, Pima pineapple cactus, masked bobwhite quail, Chiricahua leopard frog, or the jaguar.

3.4 Nogales Border Patrol Station

The Nogales Station's AO is located within Santa Cruz County. (b) (7)(E) . (b) (7)(E) In the southern portion of the Nogales Station AO, the Santa Cruz River Valley is the dominant geographical feature, which is bordered by the Tumacacori and Santa Rita Mountain Ranges.

In FY 1998, the Nogales Station apprehended 138,821 illegal aliens. In FY 1999 the number of apprehensions fell to 68,184, and in FYs 2000 and 2001 the number of apprehensions fell again to 63,899 and 53,044, respectively. The Nogales Station conducts approximately 30 SAR missions per year.

3.4.1 Nogales Station Activities

USBP activities within the station's AO are discussed below and presented in Figure 3-4a. Currently, 497 USBP agents are assigned to the Nogales Station. Nogales Station agents

patrol approximately 75 miles of semi-improved and unimproved roads (b) (7)(E) (b) (7)(E) .

(b) (7)(E) (b) (7)(E) Drag road preparation is conducted on (b) (7)(E) miles of road (b) (7)(E) The Nogales Station (b) (7)(E) . Off-road activities entail the use of horses, foot patrols, bike patrols, 4-wheel drive vehicles, and ATVs. Off-road activities are used in the pursuit of UDAs and SAR missions. Off-road pursuit by vehicles only occur when it is determined that the persons are likely to be in a specific area or their location is known. These activities can occur (b) (7)(E) in the Nogales Station. Vehicles and ATVs are (b) (7)(E) There are currently (b) (7)(E) sensors in use within the station's AO. Currently, (b) (7)(E) are operated in the Nogales Station's AO.

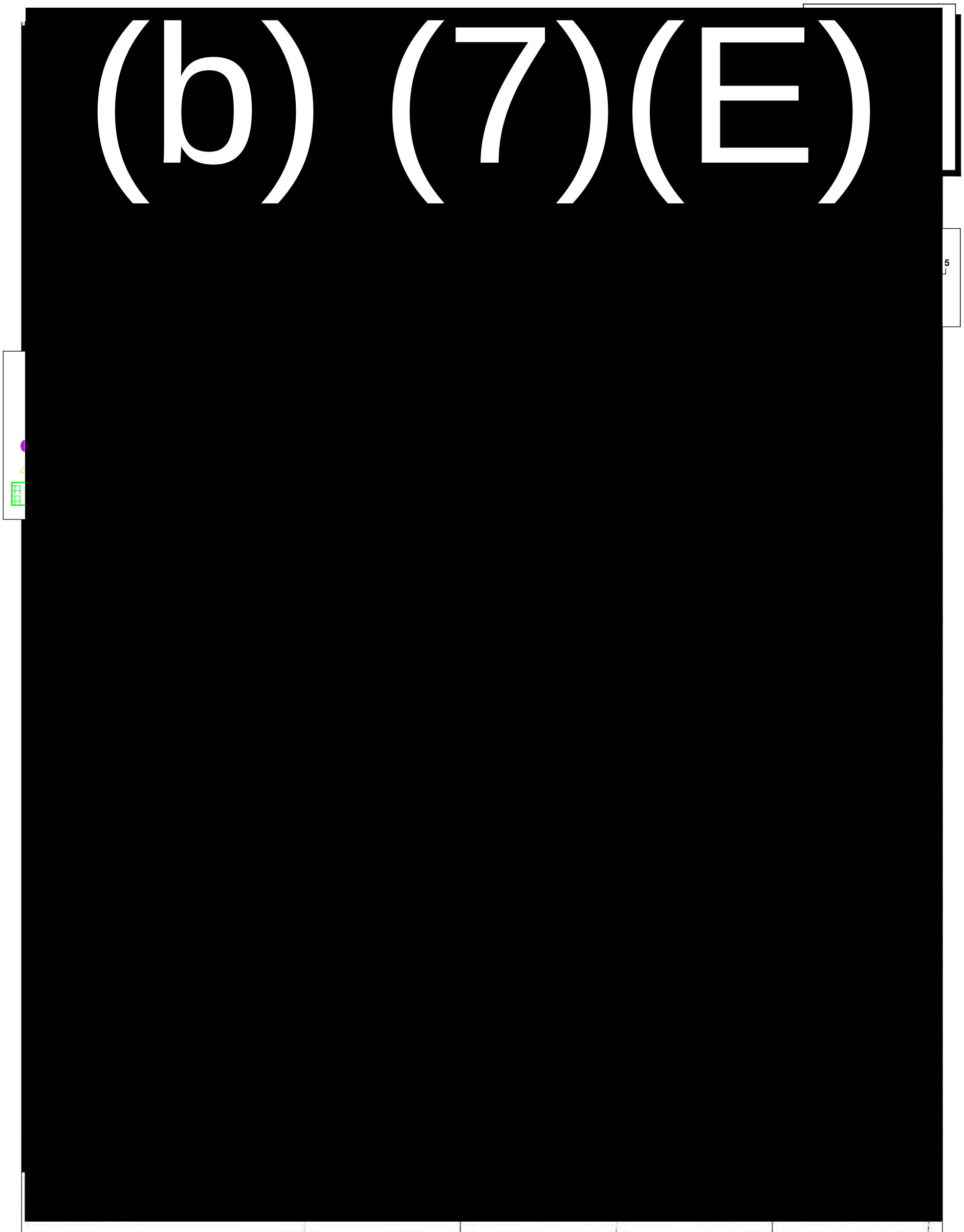
The Nogales Border Patrol Station has a helipad and refueling capabilities. In addition, the Nogales International Airport is utilized for air operations. The entire border within the station's AO is patrolled (30 miles) (b) (7)(E) Air operations are primarily reactive and aimed at deterring/interdicting illegal entries of aliens and contraband. Helicopters would fly outside of the general flight routes to assist ground patrols and conduct SAR missions.

3.4.2 Protected Species

3.4.2.1 Mexican Spotted Owl

Southern Arizona, including the Nogales Station's AO is in the Basin and Range–West Recovery Unit for the Mexican spotted owl. Within this recovery unit the Mexican spotted owl occupies primarily USFS lands within the Coronado National Forest, in isolated areas of the Atascosa, Pajapito, Patagonia, and Santa Rita Mountains (Figure 3-4b).

(b) (7)(E)



Source: Nogales (1969) USGS 1:250,000 Topographic Map

Figure 3-4a: U.S. Border Patrol Activities Within the Nogales Station Area of Operations.

Scale: on map

Date: August 2002

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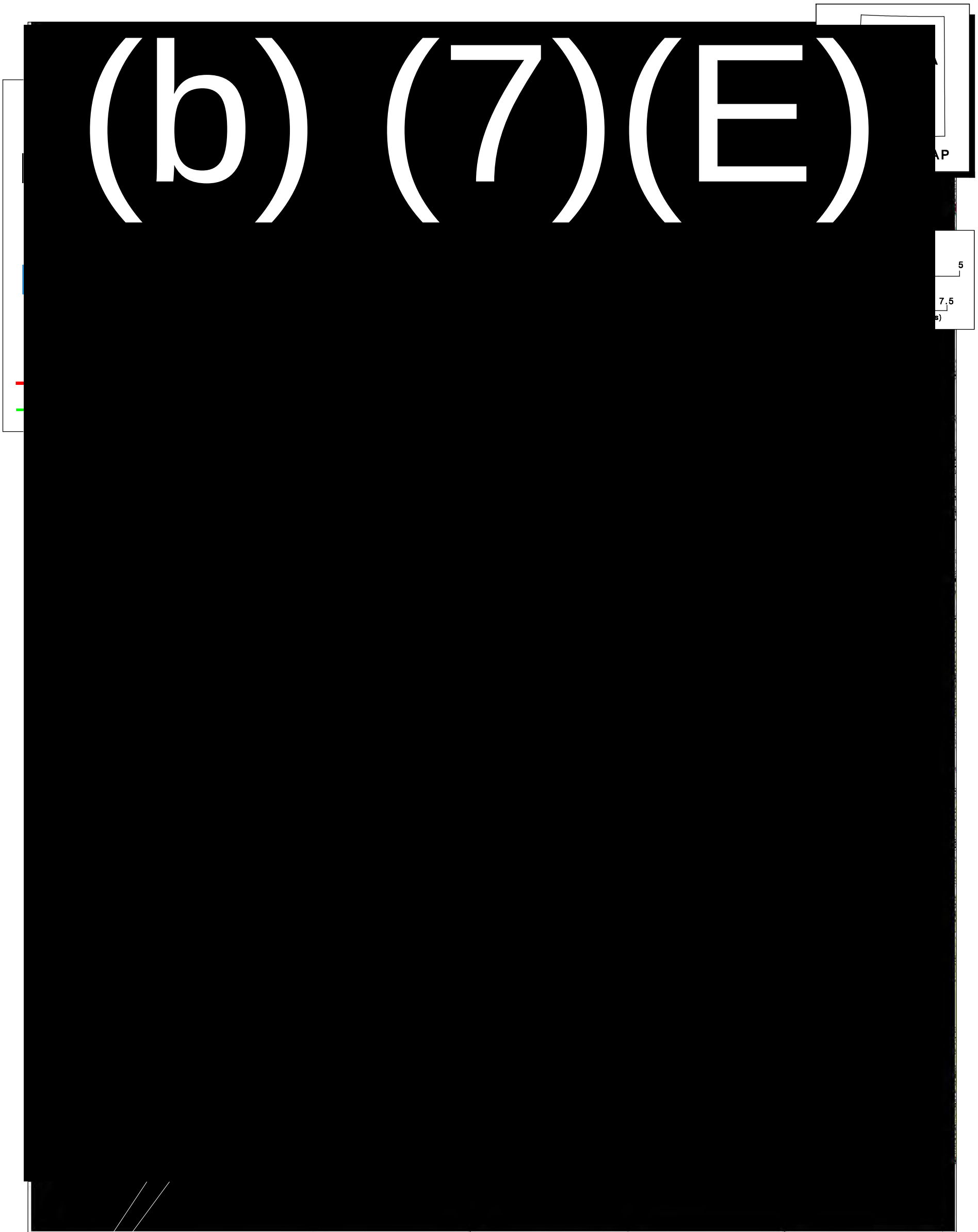

Figure 3-4b: General Location Map of Protected Species within the Nogales Station Area of Operations.

Scale: on map

Date: June 2002

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Patrol Road Activities

The majority of patrol roads within the station's AO (b) (7)(E) (Figure 3-4a). (b) (7)(E) Nogales Station agents. Currently, patrol roads (b) (7)(E) Figure 3-4a). However, since patrol road activities are (b) (7)(E) the only potential effects to this species would be disturbance (vehicle noise) or accidental vehicle strikes.

Drag Road Activities

Currently, drag roads are located along the border in the (b) (7)(E) within a protective activity center for the Mexican spotted owl (figures 3-4a and 3-4b). Since drag road activities are (b) (7)(E), the only potential effects to this species would be vehicle noise disturbance. (b) (7)(E) that a vehicle/owl collision is unlikely.

Off-Road Operations

Off-road operations within the station's AO are concentrated (b) (7)(E), and include the use of 4-wheel drive vehicles, ATVs, horses, and foot patrols. (b) (7)(E) impacts would be expected from these types of activities.

Air Operations

(b) (7)(E), a described previously, helicopter patrols are also conducted (b) (7)(E). In addition, helicopter overflights may occur over known Mexican spotted owl locations during tracking and SAR missions. Noise from these types of activities could disrupt the Mexican spotted owls nesting and/or caused them to flee. These responses would be occasional and temporary.

Sensors

(b) (7)(E)

(b) (7)(E) activities could cause an owl to flee the area

temporarily, but this response would not be expected to cause any detrimental effects to the Mexican spotted owl.

Checkpoints and Observation Points

(b) (7)(E) located near the Mexican spotted owl areas, therefore, no effect to this species would be expected from checkpoint operations within the station's AO. Currently the Nogales Station does not operate observation points; therefore no effect would occur to this species.

3.4.2.2 Cactus Ferruginous Pygmy-owl

Two sightings of cactus ferruginous pygmy-owls have been documented on the (b) (7)(E) of the Nogales Station's AO (Figure 3-4b). Both locations occur south of the (b) (7)(E) .

Patrol Road Activities

(b) (7)(E) pass near both known pygmy-owl locations, and there is some potential for agents to encounter this species while using these routes. However, since patrol road activities (b) (7)(E), the only potential effects to this species would be disturbance (vehicle noise) or accidental vehicle strikes. These are; however, highly unlikely.

Drag Road Activities

(b) (7)(E) there is no potential for USBP agents to encounter pygmy-owls during dragging activities. Therefore, no impacts would occur under the current level of drag road activities.

Off-Road Operations

(b) (7)(E) near the confirmed pygmy-owl locations might cause an owl to flee the area for a short time, but this response would not be expected to cause any detrimental effects to the pygmy-owl. Off-road activities occurring in riparian areas, such as (b) (7)(E), could disturb the pygmy-owl. Additionally, motorized off-road activities within the riparian areas could degrade the habitat.

Air Operations

(b) (7)(E) where two documented pygmy-owl locations occur; therefore, no impacts to this species would result from air operations within the Nogales Station's AO.

Sensors

(b) (7)(E) near the two confirmed pygmy-owl territories. (b) (7)(E) could cause an owl to flee the area temporarily, but this response would not be expected to cause any detrimental effects to the pygmy-owl.

Checkpoints and Observation Points

(b) (7)(E) no impacts to the cactus ferruginous pygmy-owls would occur from checkpoint operations within the Nogales Station's AO. In addition, no effect to the pygmy-owl would be anticipated (b) (7)(E)

3.4.2.3 Lesser Long-nosed Bat

Recent survey efforts indicate that thousands of lesser long-nosed bats roost and/or feed in Arizona seasonally (USFWS 1995b). Lesser long-nosed bats migrate to Arizona as early as April to bear young. After the young are weaned, the maternity colonies begin to disband in July and August, but some bats remain in these roosts into October (USFWS 1995b). Prior to mid-July, most of the bats known to be roosting in Arizona are concentrated in three major maternity roosts. The only known roost site (Cave of the Bells) within the Nogales Station's AO is located in Coronado National Forest near the Santa Rita Mountains, and is not characterized as a maternity roost site.

Effects to lesser long-nosed bat resulting from USBP activities can be characterized as both potentially adverse, attributable to noise, and potentially beneficial since an official presence is maintained reducing unauthorized access and illegal activities within known roosting areas. Information on the effect of military aircraft overflights of the Copper Mountain maternity roost found no major effects to roosting bats (Dalton and Dalton 1993). However, it is important to remember that lesser long-nosed bats are sensitive to disturbances in the roost, and a threshold level of what is tolerable and what is not, has yet to be established (USFWS 1995b).

It should also be noted that no studies have been conducted to assess the effects of helicopter noise on roosting bats.

The lesser long-nosed bat appears to be sensitive to human disturbance when day–roosting (USFWS 1995b). Observations by one scientist indicate that a single brief visit is sufficient to cause a high proportion of lesser long-nosed bats to temporarily abandon their roost (USFWS 1995b). Since many of these areas could be used by illegal aliens, the presence of the USBP reduces the potential for disturbance to this protected species.

Columnar cacti and agave, used by the lesser long-nosed bat as a food source, are protected by the State of Arizona under the Arizona Native Plant Law (A.R.S. Chapter 7, Article 1). The law does not provide protection from all threats, but does prevent illegal harvest and promotes salvage of specimens in areas where development is going to occur (USFWS 1995b). Section 7 requirements of the Endangered Species Act also provide a level of protection for these plants since their presence is required for the bats to maintain their population numbers (USFWS 1995b). This protection is limited by the lack of understanding of what is required in foraging habitat to support roosting populations.

Patrol Road Activities

The nearest patrol road to the Cave of the Bells roosting site is located o(b) (7)(E) [redacted] There is no potential for USBP agents to encounter the lesser long-nosed bats roost during their patrols activities; therefore, no impacts to the roost would occur under the current level of patrol activities.

U.S. Border Patrol agents may encounter foraging bats at night during patrol activities. Human activities (lights and sound) can cause bats to avoid a particular foraging area. However, for such disturbances to be significant, it would have to be present over much of the colony's foraging territory and occur on a regular basis (INS 2002c). Patrol road activities are (b) (7)(E) [redacted] columnar cacti and agave would not be disturbed or removed. Although patrol operations may affect foraging bats, these effects should be isolated incidences and not adversely the bat.

Drag Road Activities

(b) (7)(E) of the Cave of the Bells roost. There is no potential for USBP agents to encounter lesser long-nosed bats during their dragging activities; therefore, no effect would occur to the bat roosts under the current level of patrol activities.

Off-Road Operations

The Cave of the Bells roost site is in the (b) (7)(E) no effect to the roost site would be expected under the current level of off-road operations.

There is a possibility that a USBP agent could encounter a foraging bat during an off-road pursuit of illegal entries. However, columnar cacti and agave would not be destroyed during off-road operations. Although, there is the possibility of an USBP agent to encounter a foraging bat, these encounters would be temporary and infrequent. Therefore, off-road operations would not adversely affect foraging bats or the bat's foraging territory.

Air Operations

(b) (7)(E) no impacts to the lesser long-nosed bat roost would result from air operations within the Nogales AO. However, foraging bats may be encountered during a night SAR mission or apprehension. This could result in potential harassment of bats or a potential mid-air collision between the helicopter and a bat, however it is highly unlikely (INS 2002c).

Sensors

(b) (7)(E) of the roost site. ((b) (7)(E).) no impacts to lesser long-nosed bats would result from the operation and maintenance of sensors.

Checkpoints and Observation Points

(b) (7)(E) of the Cave of the Bells roost site. Therefore, no impacts to roosting lesser long-nosed bats would occur (b) (7)(E) Lights and noise from (b) (7)(E) within the lesser long-nosed bat foraging area may affect foraging bats; however, checkpoint operations would not create any additional effect on

the lesser long-nosed bat. (b) (7)(E) no effect to the lesser long-nosed bat would occur.

3.4.2.4 Gila Topminnow

As presented in the Revised Recovery Plan for the Gila topminnow, a portion of this species' distribution occurs within the Nogales Station's AO. The Gila topminnow is known to inhabit a portion of Sonoita Creek from the city of Patagonia south until it converges with the Santa Cruz River (Figure 3-4b).

Patrol Road Activities

Since patrol road activities in the Nogales Station's AO (b) (7)(E) activities should have no impacts on the Gila topminnow. Maintenance, such as road grading, of unimproved patrol roads may have a beneficial affect on the Gila topminnow by reducing erosion and sedimentation.

Drag Road Activities

(b) (7)(E) Dragging operations have the potential to increase erosion and sedimentation in the Santa Cruz. Therefore, drag road activities could potentially have an adverse affect on Gila topminnow habitat.

Off-Road Operations

Any off-road activities occurring near the creek could degrade the riparian and aquatic habitat of the area. Depending on the frequency of these activities, off-road operations in the Sonoita Creek area could adversely affect the Gila topminnow. Off-road operations could occur in the riparian habitat along Sonoita Creek during the pursuit of known illegal entries. There is a potential for these operations to occur daily depending on illegal entry traffic.

Air Operations

(b) (7)(E) no effect to the Gila topminnow would occur as a result of air operations within the Nogales AO.

Sensors

Sensor maintenance and installation would cause a minimal amount of ground disturbance; therefore, erosion and subsequent sedimentation would be minimal. No effects to the Gila topminnow are expected as a result of sensor activities.

Checkpoints and Observation Points

Since checkpoint operations occur (b) (7)(E), these activities would not affect the Gila topminnow. Because the Nogales Station (b) (7)(E), no effect to the Gila topminnow would occur.

3.4.2.5 Pima Pineapple Cactus

Pima pineapple cactus habitat within the station's AO is bordered by the Patagonia and Santa Rita Mountains in the east, and the Tumacacori Mountains in the west (Figure 3-4b). Limited range and sparse distribution appear to be the greatest potential threat to the Pima pineapple cactus. Other factors include loss of habitat due to urban development, off-road vehicle use, road construction, agriculture, and mining, habitat degradation due to livestock grazing, alteration of habitat due to aggressive non-native grasses, illegal collecting, and range management practices that cause surface disturbances (AGFD 1999).

Patrol Road Activities

(b) (7)(E) patrol roads located in the Nogales Station's AO are within Pima pineapple cactus habitat. However, (b) (7)(E), there would be no impacts expected from these types of activities.

Drag Road Activities

All drag roads in the station's AO with the exception (b) (7)(E) are within Pima pineapple cactus habitat (Figure 3-4a and Figure 3-4b). Since drag road activities (b) (7)(E), no effects are anticipated from these activities.

Off-Road Operations

Off-road horse and foot patrols conducted around the (b) (7)(E) could cause harm to this species by direct contact (destruction of existing cacti) and/or the degradation of it's habitat.

Air Operations

The only impacts air operations could have on the Pima pineapple cactus would be the remote possibility of a helicopter landing directly on a plant. Therefore, any effects to the Pima pineapple cactus from air operations are unlikely.

Sensors

The majority of sensors are placed between the U.S.-Mexico border and (b) (7)(E), or between the U.S.-Mexico border and (b) (7)(E) These sensors are placed at strategic locations along the U.S.-Mexico border (b) (7)(E) Agents walking to sensor sites to perform installation and/or maintenance activities could cause harm to this species by accidental direct contact. The installation and maintenance of these sensors does not involve the removal or disturbance of any vegetation, including cacti species. Therefore, these types of activities would not be expected to adversely affect the Pima pineapple cactus.

Checkpoints and Observation Points

(b) (7)(E) checkpoint locations are located within Pima pineapple cactus habitat, (b) (7)(E) Checkpoint operations would not directly affect the Pima pineapple cactus; however, illegal entries traveling cross country to avoid checkpoints could affect the species by accidental direct contact and habitat degradation. Therefore, checkpoints could indirectly have adverse effects on the cactus. Because the Nogales Station (b) (7)(E) no effect to the Pima pineapple cactus are expected.

3.4.2.6 Chiricahua Leopard Frog

The Chiricahua leopard frog has been known to occur in areas throughout the Santa Rita and Atascosa Mountains of the Coronado National Forest (Figure 3-4b).

Patrol Road Activities

Several patrol roads are located near areas of known occurrence of the Chiricahua leopard frog (Figures 3-4a and 3-4b). The potential exists for a USBP vehicle to hit a frog during patrol activities. These type of encounters are expected to be infrequent.

Drag Road Activities

None of the drag roads within the Nogales Station's AO are located within areas where Chiricahua leopard frogs occur; therefore, there would be no effect to this species from drag road activities (Figures 3-4a and 3-4b).

Off-Road Operations

Off-road activities conducted within riparian habitats of known Chiricahuan leopard frog occurrences could affect this species by increasing erosion and water turbidity. Conversely, off-road activities most likely benefit this species and it's habitat within the station's AO by limiting disturbances to the area by illegal alien traffic.

Air Operations

Air operations would not affect the Chiricahua leopard frog or it's habitat.

Sensors

(b) (7)(E) these types of activities would not affect the Chiricahua leopard frog.

Checkpoints and Observation Points

(b) (7)(E) checkpoint locations are not located near any known Chiricahua leopard frog sites. Since these checkpoints do not occur in riparian habitats, no impacts to this species are expected. (b) (7)(E)

3.4.2.7 Jaguar

The jaguar is known to be a solitary animal, frequently roaming its large home range. In December 2001, a jaguar was sighted just west of Nogales in the Pajarita Wilderness (Figure 3-4b).

Patrol Road Activities

There is a remote chance that USBP agents may encounter a jaguar during patrol activities, causing the individual to flee the area. Because a chance of an encounter is unlikely, it has been determined that patrol road operations would not affect this species.

Drag Road Activities

All drag roads in the Nogales Station's AO are located (b) (7)(E) of the known jaguar sighting. (b) (7)(E), the activities are not expected to affect this species.

Off-road Operations

Off-road operations are not expected to adversely affect this species, although there is a remote possibility that agents or personnel may encounter a fleeing jaguar.

Air Operations

(b) (7)(E)

(b) (7)(E) Helicopter flights within the station's AO usually occur (b) (7)(E) in response to alien traffic patterns. During SAR and tracking missions within the station's AO, it is possible that overflights could disturb a jaguar. However, any effects resulting from air operations would be infrequent and temporary; therefore, no adverse effects to the species are anticipated.

Sensors

Agents performing (b) (7)(E) maintenance activities on foot might physically encounter a jaguar; however, it is expected that any encounter would be brief and not cause any detrimental effects.

Checkpoints and Observation Points

The (b) (7)(E) checkpoints operated by the Nogales Station are located on (b) (7)(E) of the known jaguar sighting. Therefore, no effect to the jaguar would occur from such activities. No effect to the species would occur by the operation of observation points (b) (7)(E)

3.4.3 Conclusions

Effect determinations for each Federally protected species occurring in the Nogales Station's AO are discussed by operation in the following paragraphs and are summarized in Table 3-4.

Patrol road operations may affect, but are not likely to adversely affect the Mexican spotted owl, cactus ferruginous pygmy-owl, Chiricahua leopard frog, and lesser long-nosed bat. There is potential for patrol road activities to disturb the Mexican spotted owl, cactus ferruginous pygmy, or lesser long-nosed bat. In addition, the possibility exists for a USBP vehicle to collide with the Mexican spotted owl, cactus ferruginous owl, or Chiricahua leopard frog. Patrol road operations would have no effect on the Gila topminnow, Pima pineapple cactus, or the jaguar. Because patrol road operations (b) (7)(E), there is a minimal potential, due to erosion and sedimentation, for impacts to the Gila topminnow or Pima pineapple cactus. Although a jaguar could be encountered during drag road operations, it has been determined that these operations would have no affect on the species because an encounter is highly unlikely.

Drag road operations may affect, but are not likely to adversely affect the Mexican spotted owl and lesser long-nosed bat. There is a potential for drag road activities to disturb the Mexican spotted owl or a foraging lesser long-nosed bat. In addition, the potential exists for an accidental collision between a USBP vehicle and an owl. Drag road operations could have minimal effects on the Gila topminnow due to erosion and sedimentation, but no impacts are expected to occur regarding the cactus ferruginous pygmy-owl, Pima pineapple cactus, Chiricahua leopard frog, or jaguar. (b) (7)(E) there would be no effect to the Pima pineapple cactus, Gila topminnow, or Chiricahua leopard frog.

Off-road operations may affect, but are not likely to adversely affect the Pima pineapple cactus, Chiricahua leopard frog, jaguar, and lesser long-nosed bat. Off-road operations could directly impact an individual Pima pineapple cactus or Chiricahua leopard frog; however, these impacts would be infrequent. In addition, these operations could degrade habitat utilized by these species. There is a potential for USBP agents to encounter and disturb a jaguar during off-road operations. USBP agents could encounter and disturb a foraging lesser long-nosed bat. Off-road operations may affect, and are likely to adversely affect, the cactus ferruginous pygmy-owl and Gila topminnow. Cactus ferruginous pygmy-owl and Gila topminnow habitat could be degraded, as a result of off-road operations. Off-road operations could also disturb an owl causing it to flee the area. No effect would occur to the Mexican spotted owl (b) (7)(E)

Table 3-4
Effects Determination Matrix for Federally Protected Species
Within the Nogales Station's Area of Operations

Protected Species	USBP Activities/Operations					
	Patrol Roads	Drag Roads	Off-Road	Air	Sensors	Check Points
Mexican Spotted Owl	NLAA	NLAA	NE	LAA	NLAA	NE
Cactus Ferruginous Pygmy-owl	NLAA	NE	LAA	NE	NLAA	NE
Lesser Long-nosed Bat	NLAA	NLAA	NLAA	NLAA	NE	NE
Gila Topminnow	NE	LAA	LAA	NE	NE	NE
Pima Pineapple Cactus	NE	NE	LAA	NE	NLAA	NE
Chiricahua Leopard Frog	NLAA	NE	NLAA	NE	NE	NE
Jaguar	NE	NE	NLAA	NLAA	NE	NE

Legend:
NE = no effect
NLAA = may affect, not likely to adversely affect
LAA = may affect, likely to adversely affect

Air operations would not affect the lesser long-nosed bat, Gila topminnow, Pima pineapple cactus, cactus ferruginous pygmy-owl, or the Chiricahua leopard frog. Noise from air operations could disturb Mexican spotted owls during helicopter overflights. Therefore, air operations may affect, and are likely to adversely affect the Mexican spotted owl. Air operations may affect, but are not likely to adversely the lesser long-nosed bat and jaguar. These operations could disturb a foraging bat or jaguar; however, the disturbance would be temporary.

Sensor operations may affect, but is not likely to adversely affect the Mexican spotted owl, cactus ferruginous pygmy-owl, or the Pima pineapple cactus. Technicians accessing sensors during maintenance or installation activities could disturb either of the owl species or damage an individual Pima pineapple cactus. Sensor operations would not affect the lesser long-nosed bat, Gila topminnow, Chiricahua leopard frog, or jaguar.

No species would be affected by the operation of checkpoints in the Nogales Station's AO. (b) (7)(E) .

3.5 Sonoita Border Patrol Station

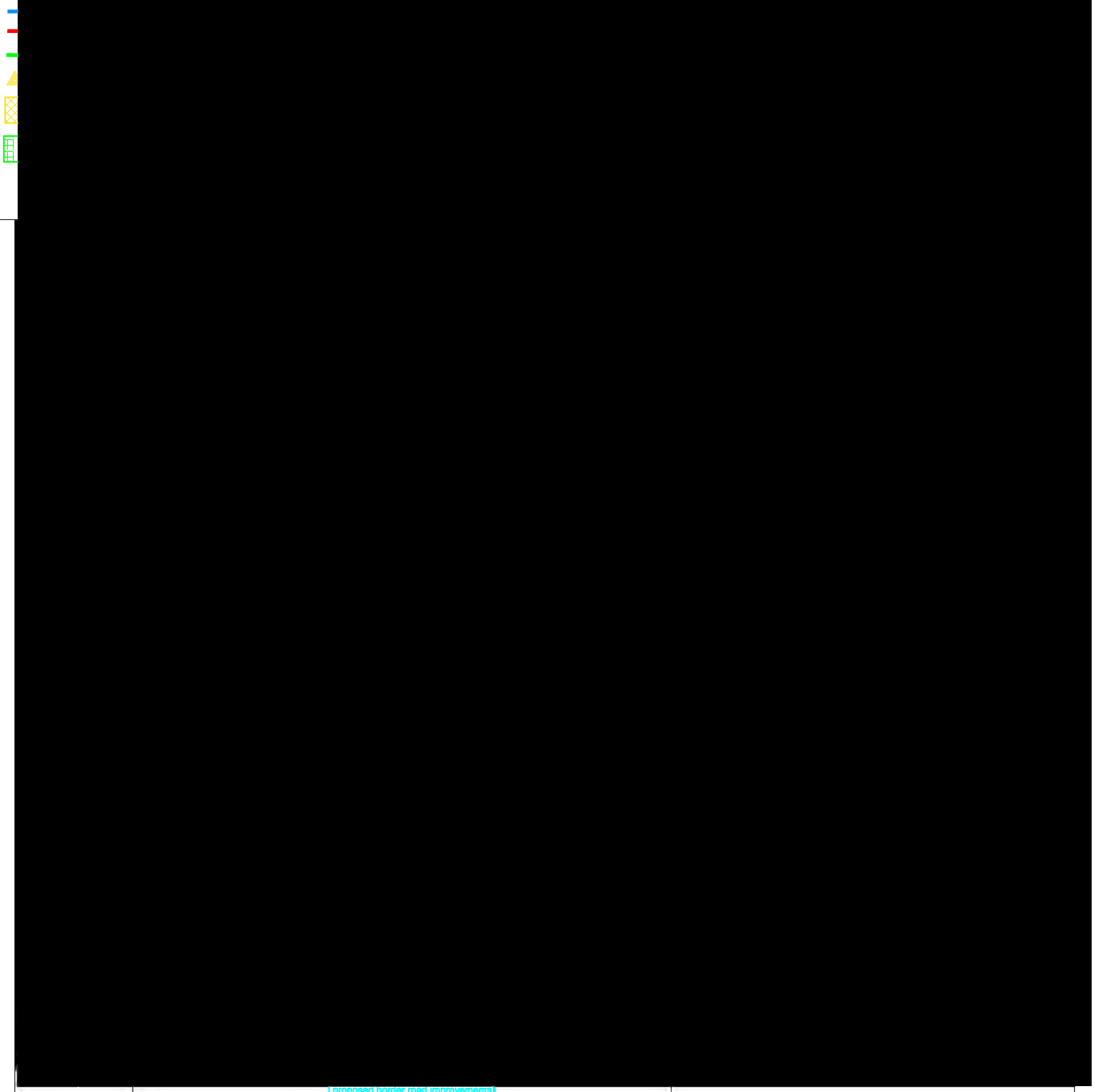
The Sonoita Station's AO encompasses approximately 25 miles of extremely remote international border within Santa Cruz County. The area extends from the (b) (7)(E) . The station's AO has a rough, rocky, mountainous terrain and rolling hills with deep canyons interspersed. Elevations within the station's AO range from 4,000 to 9,500 feet. The station's AO is largely rural with cattle ranches and private residences intermixed with national forest and state lands. The station has a 60-foot wide right-of-way easement along the international border except in some privately owned properties in the western section of the AO. A total of 14,901 illegal aliens were apprehended within the Sonoita Station between FYs 1998 and 2000. In 2001, a total of 14,282 illegal aliens were apprehended. Agents at the Sonoita Station conduct approximately 10 SAR missions per year.

3.5.1 Sonoita Station Activities

USBP activities within the station's AO are discussed below and presented in Figure 3-5a. Currently, there are approximately 56 agents assigned to the Sonoita Station. Agents at the Sonoita Station currently patrol approximately 391 miles of semi-improved and unimproved roads on a daily basis. The Sonoita Station operates (b) (7)(E) (b) (7)(E) Currently, the Sonoita Station (b) (7)(E) . There are approximately (b) (7) miles of drag roads within the station's AO. (b) (7)(E) Currently, the Sonoita Station (b) (7)(E) of the Santa Cruz riparian areas.

Off-road activities include 4-wheel drive vehicles, motorcycles, ATVs, horses, and foot patrols. Motorcycle and ATV use is (b) (7)(E) and are conducted (b) (7)(E) Off-road pursuit by vehicle or ATV (b) (7)(E) . Horseback ((b) (7)(E) , manpower allowing) and foot patrols (b) (7)(E) are conducted throughout the (b) (7)(E) (Figure 3-5a).

(b) (7)(E)



Source: Nogales (1969) USGS 1:250,000 Topographic Map

proposed border road improvements

Figure 3-5a: U.S. Border Patrol Activities Within the Sonoita Station Area of Operations.

Scale: on map

Date: August 2002

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Helicopter flights in the station's AO originate from either Nogales or Tucson and are used to assist agents patrolling for illegal aliens and narcotics. The Sonoita Station (b) (7)(E) Helicopter flights within the station's AO generally occur in (b) (7)(E) (b) (7)(E)

There are currently (b) (7)(sensors in use in the Sonoita Station's AO. Sensors are typically moved or undergo scheduled maintenance (b) (7)(E) .

3.5.2 Protected Species

The protected species that are known to be found within the Sonoita Station's AO are the Mexican spotted owl, Huachua water umbel, Gila topminnow and Chiricahua leopard frog.

3.5.2.1 Mexican Spotted Owl

Within the Sonoita Station's AO, the majority of spotted owls occur in isolated areas of the Patagonia, Huachuca, and Whetstone Mountains (Figure 3-5b). All three of these areas are located within the Coronado National Forest.

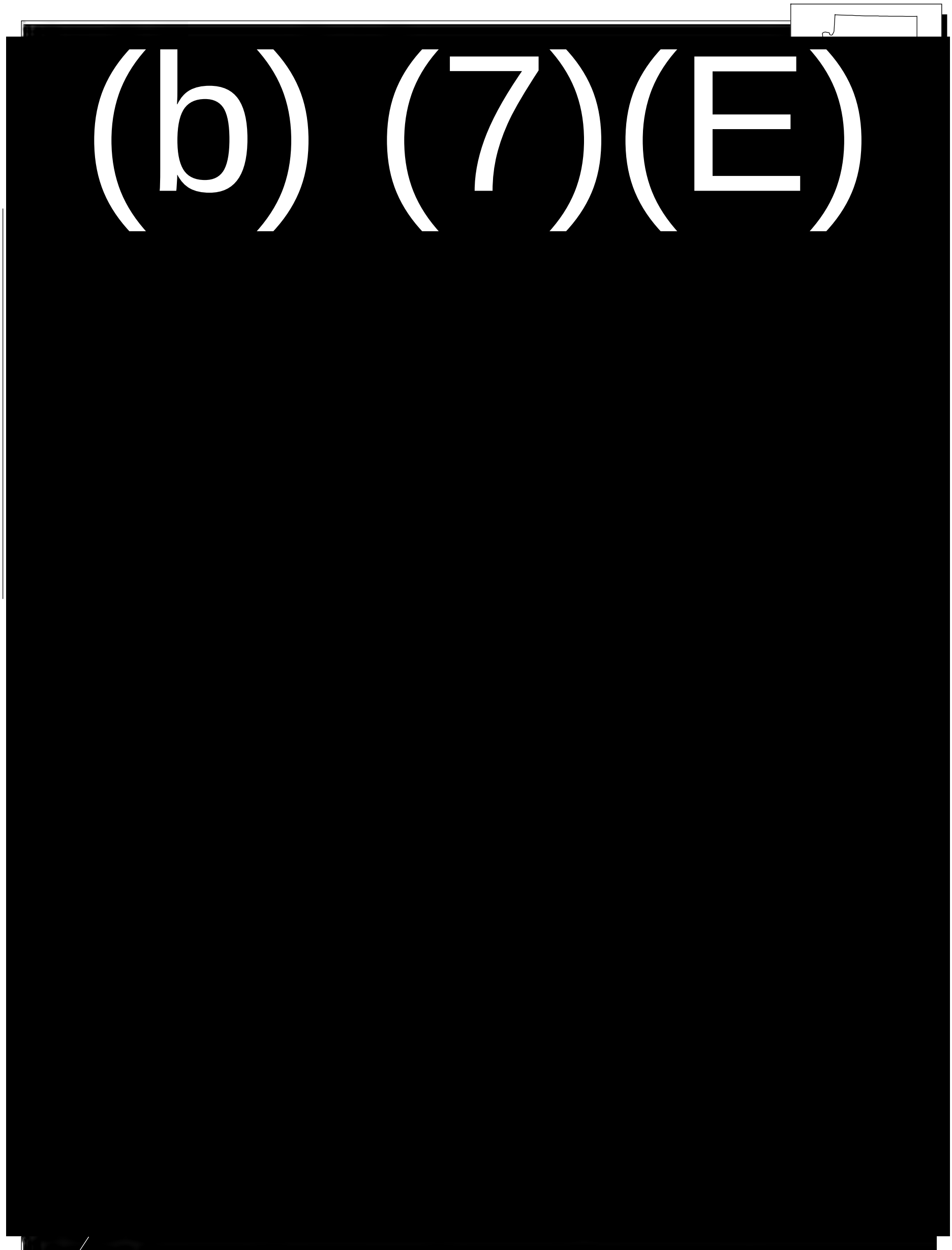
Patrol Road Activities

Currently, patrol roads are located (b) (7)(E) (Figure 3-5a). However, since patrol road activities (b) (7)(E) potential effects to this species would be disturbance (vehicle noise) or accidental vehicle strikes by USBP agents traveling patrol roads (b) (7)(E) located in the (b) (7)(E) (Figure 3-5b). Therefore, patrol road activities may affect but are not likely to adversely affect this species. Patrol roads could have a beneficial effect by providing the USBP with a means to detect and deter illegal entries. Foot and vehicle traffic from illegal entries degrade and destroy protected species habitat. In addition, fires set by illegal aliens destroys protected species habitat.

Drag Road Activities

Road segments within the (b) (7)(E) are utilized as drag roads (Figure 3-5a and Figure 3-5b). However, the nearest known Mexican spotted owl protected

(b) (7)(E)



Source: Nogales (1969) USGS 1:250,000 Topographic Map

Figure 3-5b: General Location Map of Protected Species within the Sonoita Station Area of Operations.

Scale: on map

Date: June 2002

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activity center is located approximately (b) (7)(E) from the closest drag road. Therefore, impacts to the spotted owl are not expected from drag road activities.

Off-Road Operations

Off-road operations within the station's AO include agents on foot, and the use of dirt bikes and horses. Dirt bikes are used (b) (7)(E) within the (b) (7)(E). (b) (7)(E) (b) (7)(E) . Foot patrols occur throughout the station's AO. Since horses are used in the (b) (7)(E) it is very likely that agents would encounter Mexican spotted owls during off-road operations. Such encounters could cause the owls to flee the area temporarily, but no short or long-term impacts would be expected. Therefore, off-road activities conducted within the (b) (7)(E) may affect, but are not likely to adversely affect this species.

Air Operations

(b) (7)(E) within the Sonoita Station's AO, it is possible that Mexican spotted owls within the Patagonia, Huachuca, and Whetstone Mountains could experience overflights. Noise from these types of activities could have an adverse effect on the Mexican spotted owls nesting within these areas. Because air operations allow the USBP to detect and apprehend illegal entries in remote regions of the station's AO, they could have a beneficial effect to the spotted owl and its habitat by decreasing the amount of foot traffic and disturbance by illegal UDAs.

Sensors

The sensors are placed at strategic locations along the U.S.-Mexico border (b) (7)(E) (b) (7)(E) . Agents walking to sensor sites to perform installation and/or maintenance activities could cause an owl to flee the area temporarily, but this response would not be expected to cause any detrimental effects to the Mexican spotted owl.

Checkpoints and Observation Points

(b) (7)(E) by the Sonoita Station (b) (7)(E) , no impacts to the Mexican spotted owl would be expected from checkpoint operations.

3.5.2.2 Lesser Long-nosed Bat

There are two known roost sites located within the Sonoita Station's AO (Figure 3-5a). The Patagonia Bat Cave is located east of the city of Patagonia in the Coronado National Forest. The Manila Mine is located north of Fort Huachuca. Neither site is characterized as a maternity roost site.

Patrol Road Activities

(b) (7)(E) within the vicinity of the Patagonia Bat Cave and Manila Mine (Figure 3-5a and Figure 3-5b). (b) (7)(E), patrol activities are (b) (7)(E) there is no potential for USBP agents to enter the roost site and encounter lesser long-nosed bats while on patrol. (b) (7)(E) patrol road activities would have no impacts on roosting bats.

There is a possibility that nighttime patrols may encounter foraging bats. This could result in potential harassment of bats causing them to flee the area. However, for such disturbances to be significant, it would have to occur frequently and throughout the foraging territory. (i.e., 50-mile radius). Although foraging bats may be disturbed, the disturbances would be infrequent and therefore should not have an adverse effect on the lesser long-nosed bat.

Drag Road Activities

All of the drag roads within the Sonoita AO in the station's AO are located (b) (7)(E) of the two roosting sites. There is no potential for USBP agents to encounter the lesser long-nosed bat roosts during dragging activities; therefore, no impacts to the known bat roosts would occur under the current level of patrol activities. However, drag road activities could have the same effect on foraging bats as patrol roads, as the drag roads are within the (b) (7)(E) foraging radius of the roost sites.

Off-Road Operations

During foot pursuits, it is likely that agents could track illegal aliens into the roost site. Such activities could cause disturbances to lesser long-nosed bats and disrupt normal behavior activities. (b) (7)(E) near the Whetstone Mountain roost site. It is possible for long range foot patrols to track aliens near this site. The magnitude of these effects would depend upon the proximity of these activities to roost sites, and the time (day/night and season) of the disturbance. Agents entering known roost sites during the day from April through October

would be expected to disturb, and most likely affect, this species. USBP agents should only enter these areas when aliens have been observed or tracked to the mine or cave and, in which case, human disturbance has most likely already occurred. The bats nor their roosting sites should be disturbed by any other type of off-road activity (b) (7)(E) (b) (7)(E) (Figure 3-5a). Off-road operations could have a beneficial impact by deterring illegal activities in and near known roost sites.

Air Operations

Helicopter flights within the station's AO usually occur in valley areas in response to alien traffic patterns and (b) (7)(E) within the Sonoita Station's AO, it is possible that both the Patagonia Bat Cave, Manila Mine, and Whetstone Mountain could experience helicopter overflights. If air operations are conducted near known roost sites, lesser long-nosed bats could be disturbed. This possibility would be magnified it overflights are conducted at dust and/or dawn when bats are entering or existing roost sites. There is the possibility of nightime helicopter patrols, with and including the use of lights, occurring within the foraging territory of one of the roost sites. This could result in potential harassment of bats.

Sensors

(b) (7)(E) no impacts to lesser long-nosed bats would result from the operation and maintenance of sensors.

Checkpoints and Observation Points

(b) (7)(E) no impacts would be expected from checkpoint operations. (b) (7)(E) no effect to the lesser long-nosed bat are expected.

3.5.2.3 Huachuca Water Umbel

In Arizona, the Huachuca water umbel has been found in three counties: Pima, Santa Cruz, and Cochise. Within the Sonoita Station's AO, it has been found in the Huachuca Mountains, Sonoita Creek, and San Rafael Valley (Figure 3-5b). Critical habitat for the Huachuca water umbel was designated in Federal Register 63 FR 71838. Critical habitat within the Sonoita Station's AO include a small portion of Sonoita Creek south of the city of Sonoita, the lower

portion of the Santa Cruz River, and three canyons on the west side of the Huachuca Mountains.

USBP operational activities do not involve the removal of vegetation and currently there are no plans for any type of construction activities within the designated Huachuca water umbel critical habitat areas. USBP activities are not likely to result in the adverse modification of the water umbel's critical habitat under the current level of effort. Any operational changes or future construction activities should be designed to avoid designated Huachuca water umbel critical habitat areas.

Patrol Road Activities

Currently, patrol roads are located throughout the station's AO and several patrol roads are located near confirmed Huachuca water umbel locations or designated critical habitat (Figure 3-5a and Figure 3-5b). (b) (7)(E) no impacts would be expected from these types of activities.

Drag Road Activities

(b) (7)(E) (b) (7)(E) Figure 3-5a). Existing bridges are utilized to cross the river, and (b) (7)(E) occur within the riparian area. (b) (7)(E) , no impacts to the water umbel would be expected from these types of activities in this area. However, a drag road does exist (b) (7)(E) . Therefore, drag road activity is likely to increase sedimentation, thus adversely affect the Huachuca water umbel in this area.

Off-Road Operations

Dirt bikes are used (b) (7)(E) . Horses are used . Foot patrols occur throughout the station's AO. Currently, (b) (7)(E) horse and foot patrols occur. Any off-road activities occurring in or near the Santa Cruz River could degrade the riparian and aquatic habitat of the area.

Depending on the location and frequency of these activities, off-road operations in the Santa Cruz River area could adversely affect the Huachuca water umbel.

Air Operations

Air patrols would not cause any ground disturbance or habitat degradation. Therefore, no effects to the Huachuca water umbel would occur as a result of air operations within the Sonoita AO.

Sensors

If sensors are used near (b) (7)(E) agents traveling to sensor sites to perform installation and/or maintenance activities could cause harm to this species by accidental direct contact. The installation and maintenance of these sensors does not involve the removal or disturbance of any vegetation (b) (7)(E) these types of activities would not be expected to adversely affect the Huachuca water umbel.

Checkpoints and Observation Points

(b) (7)(E) where the Huachuca water umbel has been documented (Figure 3-5b). Since the proposed checkpoint is located on existing road right-of-way, and away from the Huachuca water umbel habitat of Sonoita Creek, no impacts to this species would be expected from these activities.

3.5.2.4 Gila Topminnow

As presented in the Revised Recovery Plan and recent USFW's accounts, the Gila topminnow occurs in three areas of the Sonoita Station's AO. Sonoita Creek extends from the near city of Sonoita south to the city of Patagonia, Cienega Creek in the northern part of the station's AO, and the Santa Cruz River within the San Rafael Valley (Figure 3-5b).

Patrol Road Activities

Currently, patrol roads are located in all three topminnow locations (Figure 3-5a and Figure 3-5b). Patrol road activities (b) (7)(E); however, if any of the existing roads pass through Sonoita Creek, Cienega Creek, or the Santa Cruz River the Gila topminnow could be affected by water quality degradation (e.g., sedimentation, and other pollutants). Therefore, under the current level effort, patrol road activities could affect this species.

Drag Road Activities

(b) (7)(E) (Figure 3-5a). Existing bridges are utilized to cross the river, and (b) (7)(E) of the riparian area. Since the (b) (7)(E) of the riparian area and existing bridge crossings are used over the Santa Cruz River, no impacts to the Gila topminnow would be expected from these types of activities.

Off-Road Operations

Currently, (b) (7)(E). The Santa Cruz River however, is located within San Rafael Valley where off-road activities occur. Any off-road activities occurring in or near the Santa Cruz River could degrade the riparian and aquatic habitat of the area. Depending on the location and frequency of these activities, off-road operations in the Santa Cruz River area could adversely affect the Gila topminnow.

Air Operations

Air operations would not impact the Gila topminnow habitat. Therefore, no effect to the Gila topminnow would occur as a result of air operations within the Sonoita Station's AO.

Sensors

If sensors are placed within (b) (7)(E) agents crossing these waterways on foot would have no effect on the Gila topminnow.

Checkpoints and Observation Points

(b) (7)(E) the area of Sonoita Creek where the Gila topminnow occurs. Since the proposed checkpoint is located (b) (7)(E) away from the Gila topminnow area of Sonoita Creek, no impacts to this species would be expected from these activities.

3.5.2.5 Chiricahua Leopard Frog

As noted in Figure 3-5b, the Chiricahua leopard frog has been documented in scattered locations within or near riparian areas of the Sonoita Station's AO. Individuals exist within canyon streams leading from the Huachuca and Patagonia Mountains and into the San Rafael

Valley, as well as, the lower Santa Cruz River. Additionally, one is located just east of the Cienega Creek near North Canyon.

Patrol Road Activities

Currently, patrol roads are located near most of the Chiricahua leopard frog locations that exist along the (b) (7)(E) (Figure 3-5a and Figure 3-5b). Patrol road activities (b) (7)(E) (b) (7)(E) the Chiricahua leopard frog could be affected by water quality degradation and physical encounters. Therefore, under the current level of effort, patrol road activities could affect this species.

Drag Road Activities

Currently, (b) (7)(E) (Figure 3-5a). Since existing bridges are utilized to cross the river, (b) (7)(E) of the riparian area, no effects to the Chiricahua leopard frog are anticipated at these locations. However, drag road operations do occur (b) (7)(E) near a Chiricahua leopard frog location (b) (7)(E). Therefore, potential effects to this species could occur at this location. Effects could include direct physical harm, if a frog were on the road during dragging operations or indirect degradation of water quality resulting from siltation.

Off-Road Operations

Currently, (b) (7)(E). The (b) (7)(E) r however, is located within San Rafael Valley where off-road activities occur. Any foot patrols occurring in or near the (b) (7)(E) could degrade the riparian and aquatic habitat of the area. Depending on the location and frequency of these activities, off-road operations in the (b) (7)(E) area could adversely affect the Chiricahua leopard frog.

Air Operations

Air operations would not impact Chiricahua leopard frog habitat. Therefore, no impacts to the Chiricahua leopard frog would occur as a result of air operations within the Sonoita Station's AO.

Sensors

If sensors are placed within (b) (7)(E), agents crossing these waterways, on foot would have no effect on the Chiricahua leopard frog.

Checkpoints and Observation Points

Since (b) (7)(E) operated by the Sonoita Station (b) (7)(E) and the nearest Chiricahua leopard frog location (b) (7)(E), no impacts to this species would be expected from these activities.

3.5.3 Conclusions

The determinations for the effects for each operation on the protected species previously discussed are summarized in the following paragraphs and in Table 3-5.

Table 3-5
Effects Determination Matrix for Federally Protected Species
Within the Sonoita Station's Area of Operations

Protected Species	USBP Activities/Operations					
	Patrol Roads	**Drag Roads**	**Off-Road**	**Air**	**Sensors**	**Check Points**
Mexican Spotted Owl	NLAA	NE	NLAA	LAA	NLAA	NE
Lesser Long-nosed Bat	NE	NE	LAA	LAA	NE	NE
Huachuca Water Umbel	LAA	LAA	LAA	NE	NLAA	NE
Gila Topminnow	LAA	NE	LAA	NE	NLAA	NE
Chiricahua leopard frog	LAA	LAA	NLAA	NE	NLAA	NE

Legend:
NE = no effect
NLAA = may affect, not likely to adversely affect
LAA = may affect, likely to adversely affect

The patrol road operations (b) (7)(E) However, if any of the (b) (7)(E) the Huachuca water umbel, Gila topminnow and the Chiricahua leopard frog would likely be adversely effected.

The Huachuca water umbel and the Chiricahua leopard frog are the only species that may be adversely affected by the drag road operations. (b) (7)(E) crosses designated critical

habitat in the (b) (7)(E) of the Huachuca Mountains and thus, there may be adverse effects with this operation.

Off-road operations may adversely affect the lesser long-nosed bat, Huachuca water umbel and the Gila topminnow by degrading the riparian and aquatic habitats. The off-road activities are within the San Rafael Valley and the Santa Cruz River where the Huachuca water umbel and Gila topminnow are known to occur, therefore these operations could possibly degrade the riparian and aquatic habitat of the area. Off-road activities near the Patagonia Bat Cave and Manila Mine could cause disturbances to the lesser long-nosed bat and disrupt normal behavior activities. However, off-road activities could have a beneficial effect, as a result of reducing or deterring ilegal activities near or in the caves.

The air operations (b) (7)(E) . It is possible that the Mexican spotted owls and lesser long-nosed bats within the Patagonia, Huachuca, and Whetstone Mountains could experience noise disturbances, which may adversely affect these two species.

The placement of sensors or establishment of checkpoints and observation points within the Sonoita AO would not have adverse affects on any of the species previously discussed.

3.6 Naco Border Patrol Station

The Naco Station's AO is located within Cochise County and covers approximately 2,000 square miles. The station's AO includes 30 miles of international border and the communities of Naco, Bisbee, Tombstone, Sierra Vista, Warren, Hereford, Palominas and Huachuca, Arizona. The geographical terrain of the area is desert with rolling hills covered with brush thickets and numerous north-south trending washes. The approximate elevation of the station is 4,800 feet. In FY 1999 the Naco Station was responsible for apprehending 63,417 illegal aliens. The number of apprehensions rose in FY 2000 to 113,307, and fell in FY 2001 to 99,907.

3.6.1 Naco Station Activities

USBP activities within the station's AO are discussed below and presented in Figure 3-6a. There are currently 212 agents assigned to the Naco Station. Agents at the Naco Station patrol 47 miles of improved and semi-improved roads within their AO (b) (7)(E) There are

(b) (7)(E) The Naco Station maintains (b) (7)(miles of drag roads along the border. Frequency of drag road preparation (b) (7)(E). Off-road activity is limited to daily foot, ATV, and horse patrols.

There are landing pad and refueling facilities at the Naco Station. Helicopter flights within the station's AO usually occur on a (b) (7)(E); although they generally fly along the international border (b) (7)(E) Figure 3-6a). In addition, Joint Task Force 6 (JTF 6) conducts air operations in the Naco Station's AO (b) (7)(E) Aircraft used during the operation include (b) (7)(E) helicopters. Most of the flight missions are conducted a (b) (7)(E) Helicopters are restricted to a minimum elevation of (b) (7)(E) within (b) (7)(E) of the U.S.-Mexico border, (b) (7)(E).

Approximately (b) (7)(E) sensors are in use and are maintained or moved (b) (7)(E) The majority of sensors are located (b) (7)(E). Currently, (b) (7)(E) are operated in the Naco Station's AO. All observation stations are located (b) (7)(E) north of the U.S.-Mexico border.

3.6.2 Protected Species

The protected species discussed in this section include the Mexican spotted owl, lesser long-nosed bat, Huachuca water umbel and Chiricahua leopard frog.

3.6.2.1 Mexican Spotted Owl

Southern Arizona, including the Naco Station's AO, is in the Basin and Range – West Recovery Unit for the Mexican spotted owl. Mexican spotted owls have been documented within the (b) (7)(E) of the Naco Station's AO (Figure 3-6b). The (b) (7)(E) are a part of the Coronado National Forest.

Patrol Road Activities

Several patrol roads are located in the (b) (7)(E), within designated critical habitat and protected activity centers for the Mexican spotted owl. However, (b) (7)(E), the only potential effect to this species would be limited to disturbance (vehicle noise) or accidental vehicle strikes.

(b) (7)(E)

Source: Nogales (1969) & Douglas (1970) USGS 1:250,000 Topographic Maps

Figure 3-6a: U.S. Border Patrol Activities Within the Naco Station Area of Operations.

Scale: on map

Date: June 2002

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Drag Road Activities

(b) (7)(E) is utilized as a drag road. However, (b) (7)(E) the only potential effects to this species would be vehicle noise disturbance.

Off-Road Operations

Off-road activity in the Naco Station's AO is (b) (7)(E) All off-road activities are conducted (b) (7)(E) away from spotted owl habitat; therefore, no impacts would occur as a result of off-road activities within the Naco Station's AO.

Air Operations

The Naco Border Patrol Station has a helipad and refueling capabilities. (b) (7)(E) the flight route (b) (7)(E) . During SAR missions the helicopters may fly anywhere in the station's AO depending on the general location of the distressed person(s). The general flight route used by the USBP overlays Mexican spotted owl critical habitat. In addition, it is possible that SAR missions may fly over a protected activity center in the Huachuca Mountains. Air patrols conducted in the Naco Station's AO are likely to disturb nesting owls. The chance of a helicopter and owl mid-air collision is very remote, because helicopter patrols operate (b) (7)(E) Conversely, USBP air operations may benefit the Mexican spotted owl by limiting other human activities, such as illegal entry in the area that could adversely affect the owls or their habitat.

Sensors

The Naco Station currently uses approximately (b) (7)(E) sensors during their (b) (7)(E) operations. These sensors are placed (b) (7)(E) . The nearest sensor grid is located (b) (7)(E) , impacts to spotted owls are not expected from installation and maintenance of sensors.

Checkpoints and Observation Points

[redacted] operated by the Naco Station is located [redacted] (b) (7)(E) [redacted], no impacts to spotted owls would result from checkpoint operations.

3.6.2.2 Lesser Long-nosed Bat

Lesser long-nosed bats have been documented roosting in the State of Texas Mine within the Huachuca Mountains (Figure 3-6b). The State of Texas Mine located to the southeast of Fort Huachuca is the only known roost site located within the Naco Station's AO. This location is not considered a maternity roost site.

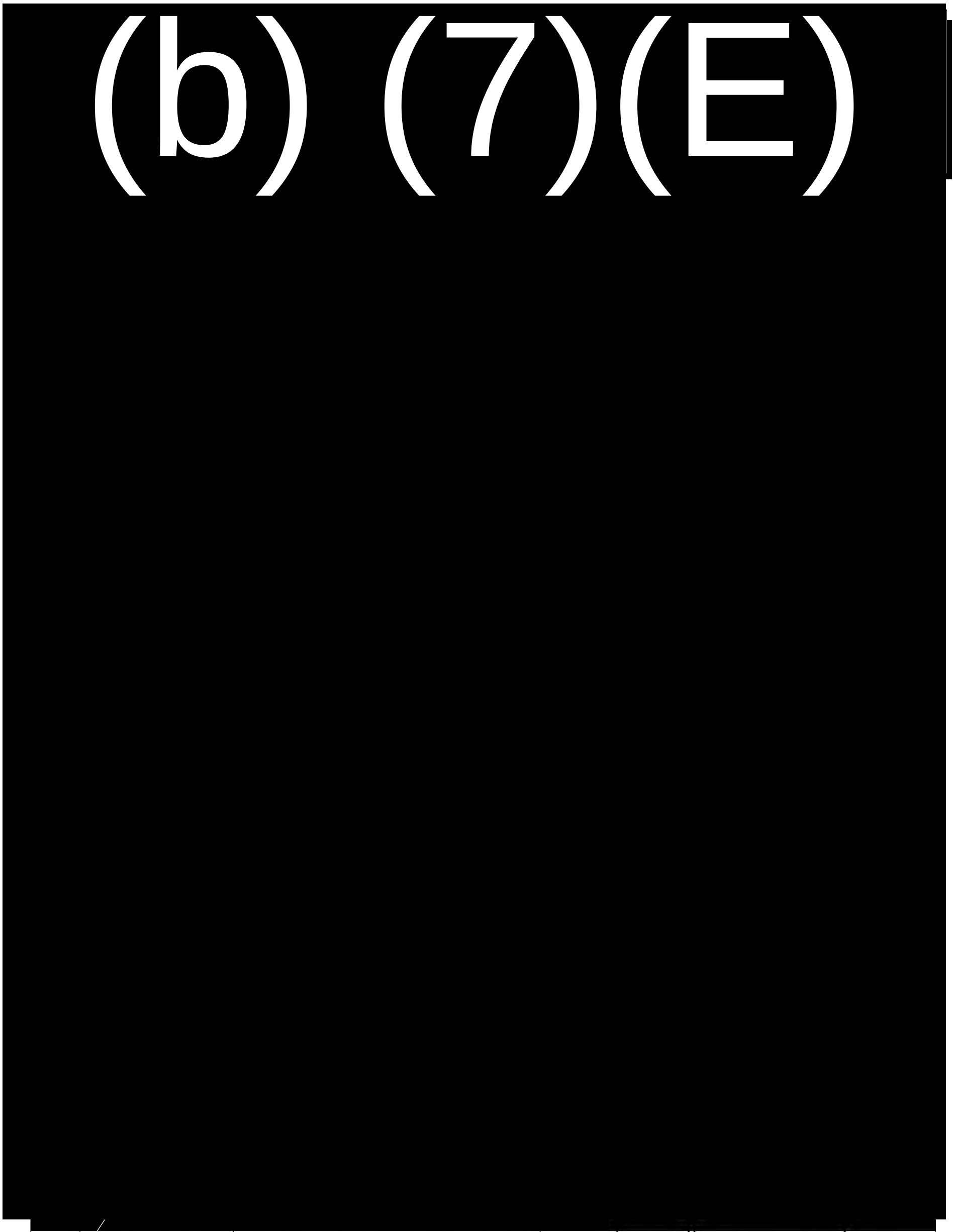
Patrol Road Activities

Patrol roads utilized by USBP agents are generally [redacted] (b) (7)(E) [redacted]. One patrol road is located [redacted] (b) (7)(E) [redacted]. While this road does pass relatively near the roost site, patrol activities [redacted] (b) (7)(E) [redacted] there is no potential for USBP agents to enter the roost site and encounter lesser long-nosed bats while on patrol. [redacted] (b) (7)(E) [redacted], patrol road activities would have no affect on roosting bats. However, patrol activities are located within the roosts foraging territory and bats could be harassed by noise and lights during night patrols. Although night patrols would likely cause bats to flee the immediate area, no long term or detrimental impacts to the foraging territory are expected.

Drag Road Activities

[redacted] (b) (7)(E) [redacted] is utilized as a drag road. The road is located [redacted] (b) (7)(E) [redacted]. [redacted] (b) (7)(E) [redacted] [redacted], patrol road activities would have no affect on the State of Texas Mine roost or roosting bats. Potential effects to the foraging territory would be similar to those stated for patrol road activities.

(b) (7)(E)



Source: Nogales (1969) & Douglas (1970) USGS 1:250,000 Topographic Maps

Figure 3-6b: General Location Map of Protected Species within the Naco Station Area of Operation

Scale: on map

Date: June 2002

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Off-Road Operations

(b) (7)(E), no impacts to lesser long-nosed bats would result from the current level of off-road operations conducted within the station's AO.

Air Operations

The Naco Border Patrol Station has a helipad and refueling capabilities. (b) (7)(E) ,the flight route (b) (7)(E). During SAR missions and tracking of illegal entries the helicopters may fly anywhere in the station's AO depending on the general location of the distressed person(s) or illegal entries. These operations could require the helicopter to hover or land. It is possible that SAR missions may fly over the State of Texas Mine roost site. If air operations were conducted near the known roost site, lesser long-nosed bats could be disturbed.

Helicopter flights occurring at night within a (b)(7) mile radius of the roost site could potentially harass foraging bats or a mid-air collision between a USBP helicopter and bat could occur. It is determined therefore that USBP activities may affect, but are not likely to adversely affect, the lesser long-nosed bat. Potential impacts to bats during roosting from helicopter patrols would not be physical (bodily harm) but sensory (hearing) in nature.

Sensors

These sensors are placed (b) (7)(E). The nearest sensor grid is located (b) (7)(E) No impacts to the lesser long-nosed bat roost at State of Texas Mine would result from the operation and maintenance of sensors (b) (7)(E). Maintenance operations are conducted (b) (7)(E) and maintenance activities would not remove any columnar cacti or agave; therefore, no impacts to the bat's foraging territory are expected.

Checkpoints and Observation Points

(b) (7)(E) operated by the Naco Station (b) (7)(E), no impacts to lesser long-nosed bats would be expected. Illegal entries attempting to avoid either checkpoint could potentially harass foraging

bats and disturb columnar cacti and agave. Although illegal entries may affect the lesser long-nosed bat, these effects are not expected to be long-term or detrimental to the species.

3.6.2.3 Huachuca Water Umbel

In Arizona, Huachuca water umbel has been found in three counties: Pima, Santa Cruz, and Cochise. Within the Naco Station's AO, it has been documented in the Huachuca Mountains and along the San Pedro River (Figure 3-6b).

Patrol Road Activities

Patrol roads utilized by USBP agents (b) (7)(E). The majority of the patrol roads are concentrated (b) (7)(E). Because patrol roads do not encroach on Huachuca water umbel sites or designated critical habitat, patrol road activities would have no effect on this species (Figures 3-6a and 3-6b).

Drag Road Activities

All drag roads within the Naco Station's AO are located (b) (7)(E) drag road activities would have no effect on the Huachuca water umbel.

Off-Road Operations

Off-road activity in the Naco Station is (b) (7)(E) foot and horse patrols. Horse patrols are conducted (b) (7)(E). Since these activities are conducted (b) (7)(E) of the confirmed water umbel locations, no impacts are expected and along the (b) (7)(E) in the vicinity of (b) (7)(E). Off-road activities (b) (7)(E) (b) (7)(E) are (b) (7)(E) of any known Huachuaca water umbel sites or critical habitat. The patrol near (b) (7)(E) is located in designated critical habitat for the Huachuca water umbel. Although horse patrols are (b) (7)(E) agents pursuing illegal entries (b) (7)(E) into the riparian area or San Pedro River could potential damage an individual plant or degrade critical (e.g., habitat sedimentation).

Air Operations

Air operations would not disturb any known Huachuca water umbel sites or designated critical habitat; therefore air operations would have no effect on this species.

Sensors

Sensors are placed at (b) (7)(E) . Sensors grids in the Naco Station's AO are (b) (7)(E) . There would be no effect to the Huachuca water umbel from sensor maintenance activities (b) (7)(E) .

Checkpoints and Observation Points

(b) (7)(E) located on (b) (7)(E) are outside of designated critical habitat and known locations for the Huachuca water umbel; therefore, checkpoint operations would not directly effect this species. However, illegal entries may travel along the (b) (7)(E) in an attempt to avoid (b) (7)(E) checkpoints. Illegal entry traffic could potentially impact known Huachuca water umbel sites or designated critical habitat. Impacts may include direct physical damage to an individual or habitat destruction or degradation.

Observation points are located (b) (7)(E) , observation points would not effect this species.

3.6.2.4 Chiricahua Leopard Frog

The Chiricahua leopard frog has been documented within the station's AO along the San Pedro River. Additionally, the species is known to occur within the (b) (7)(E) , as well as, in the (b) (7)(E) of the station and in the (b) (7)(E) (Figure 3-6b).

Patrol Road Activities

Patrol roads utilized by USBP agents are (b) (7)(E) . The majority of the patrol roads are concentrated (b) (7)(E) . (b) (7)(E) , is also considered a patrol road (Figure 3-6a). Patrol roads (b) (7)(of the most southern known Chiricahua leopard frog sighting. (b) (7)(E)

(b) (7)(E) under the current level of effort, patrol road activities would not impact this species.

Drag Road Activities

Drag roads in the Naco Station's AO are concentrated (b) (7)(E) Since drag road activities (b) (7)(E) no effect to the Chiricahua leopard frog would be expected from these types of activities.

Off-Road Operations

Off-road activity in the Naco Station is (b) (7)(E) foot and horse patrols. Both foot and horse patrols are conducted (b) (7)(E) Horse patrols (b) (7)(E) However, agents pursuing illegal entries on foot could directly impact an individual or degrade riparian habitat. Off-road patrols could potentially affect the Chiricahua leopard frog, but are not likely to adversely affect this species.

Air Operations

Air operations would not disturb the riparian habitat along the San Pedro River or any other tributary; therefore air operations would not affect the Chiricahua leopard frog.

Sensors

(b) (7)(E) personnel conducting sensor maintenance by foot could potentially degrade the riparian habitat or disturbed a leopard frog if it were present at the time of the visit. Due to the frequency of sensor maintenance (b) (7)(E) effects to the leopard frog are not expected to be detrimental to the species. Sensors could have a beneficial effect on the Chiricahua leopard frog by affording the USBP the ability to detect and deter illegal activity within the San Pedro riparian habitat.

Checkpoints and Observation Points

(b) (7)(E)

no effect from these operations are expected to the Chiricahua leopard frog.

3.6.3 Conclusions

The following paragraphs and Table 3-6 summarizes the potential effects of the operations within the Naco AO.

Table 3-6
Effects Determination Matrix for Federally Protected Species
Within the Naco Station's Area of Operations

Protected Species	USBP Activities/Operations					
	Patrol Roads	Drag Roads	Off-Road	Air	Sensors	Check Points
Mexican Spotted Owl	NLAA	NLAA	NE	NLAA	NE	NE
Lesser Long-nosed Bat	NLAA	NLAA	NE	NLAA	NE	NLAA
Huachuca Water Umbel	NE	NE	NLAA	NE	NE	NLAA
Chiricahua Leopard Frog	NE	NE	NLAA	NE	NE	NE

Legend:
NE = no effect
NLAA = may affect, not likely to adversely affect
LAA = may affect, likely to adversely affect

Patrol road activities within the Naco AO may affect the Mexican spotted owl and the lesser long-nosed bat. This operation is located within critical habitat for the Mexican spotted owl and could possibly disturb the foraging territory for the lesser long-nosed bat. However, these effects are not likely to be adverse to these species. Patrol road activities would not affect the Huachuca water umbel or Chiricahua leopard frog.

The drag road operations may affect, but are not likely to adversely affect, the Mexican spotted owl and the lesser long-nosed bat. The possibility of noise disturbances to the spotted owl could occur. The drag road operation affects to the lesser long-nosed bat are similar to those discussed for the patrol road activities. However, this operation is not likely to adversely affect these species. Drag road operations would not affect the Huachuca water umbel or Chiricahua leopard frog.

Off-road activities may affect, but are not likely adversely affect the Huachuca water umbel and the Chiricahua leopard frog. The patrol near (b) (7)(E) is located in designated critical habitat for the Huachuca water umbel. Foot patrols have the potential to affect an individual of the water umbel or degrade riparian habitat for the Chiricahua leopard frog, but would not adversely affect these species.

Air operations (b) (7)(E), general flight route (b) (7)(E) The general flight route used by the USBP overlays Mexican spotted owl critical habitat and would possibly disturb roost sites for the lesser long-nosed bat. The air operations may affect these species, but would not adversely affect these species. The sensor operations would not affect any protected species.

The lesser long-nosed bat and the Huachuca water umbel are both located near checkpoints in the Naco AO. The UDAs avoiding checkpoints could disturb or harass foraging bats and destroy an individual water umbel or its habitat. The illegal entrants may affect an individual but would not adversely affect these species.

3.7 Douglas Border Patrol Station

The Douglas Station is located within southeast Cochise County and includes approximately 30 miles of international border. There are currently 469 USBP agents assigned to the station. The communities of Douglas, (b) (7)(E) are within the station's AO. The City of Douglas shares the border with Agua Prieta, Mexico. The terrain of the area is relatively flat high desert, with numerous washes, and is bordered by the (b) (7)(E) . The approximate elevation of the high desert in this area is 4,000 ft. In FY 1999 apprehensions in the Douglas Station totaled 202,868. In 2000, the numbers rose to FY 289,387 and in FY 2001 the number of apprehensions decreased to 161,032..

3.7.1 Douglas Station Activities

USBP activities within the Douglas Station's AO are discussed below and are presented in Figure 3-7a. Activities are primarily concentrated (b) (7)(E) and patrols occur on 85 miles of improved and semi-improved roads. The Douglas Station maintains (b) (7)(E) located (b) (7)(E) north of the international border. (b) (7)(E) observation points are maintained in the Douglas Station's AO. Agents at the Douglas Station patrol approximately 85 miles of improved and semi-improved roads within their AO (b) (7)(E) . There are (b) (7) miles of drag road within the Douglas Station's AO that are prepared (b) (7)(E) Off-road activities entail the tracking of alien groups cross-country using horses or by foot, (b) (7)(E) , throughout the station's AO. ATVs

(b) (7)(E)

Figure 3-7a: U.S. Border Patrol Activities within the Douglas Station Area of Operations.

Scale: on map

Date: August 2002

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are also used (b) (7)(E) to patrol the U.S.-Mexico border. The station currently maintains (b) (7)(ATVs.

Douglas has helipad and refueling capabilities located at a local airport. (b) (7)(E) . When assistance is requested, helicopters generally fly (b) (7)(E) . Flights can occur (b) (7)(E) depending on the need. Deviations from this route are only made to follow tracks, persons, or vehicles that have entered the United States illegally.

There are approximately (b) (7)(E) sensors in use by the Douglas Station at this time. They are (b) (7)(E) . Sensors are moved in response to changes in alien traffic routes.

3.7.2 Protected Species

This section contains the discussion of the only protected species (Chiricahua leopard frog) known to occur within the Douglas Station AO.

3.7.2.1 Chiricahua Leopard Frog

The Chiricahua leopard frog is documented in several areas within the Douglas Station AO. Although, only one location is recorded in the (b) (7)(E) portion of the AO, all USBP activities currently occur in this area (Figure 3-7b).

Patrol Road Activities

All patrol roads utilized by USBP agents are (b) (7)(E) . The large majority of the patrol roads are (b) (7)(E) (Figure 3-7a), while a large majority of the known Chiricahua leopard frog sites are at least (b) (7)(E) the U.S.-Mexico border (Figure 3-7b). However, one known Chiricahua leopard frog site is located approximately (b) (7)(E) north of the U.S.-Mexico border in the vicinity of a patrol road. Patrol road activities are (b) (7)(E) no impacts to riparian habitat are expected. However, there is a potential for a USBP vehicle collision with a frog, if a frog was present on the road when a USBP vehicle was present. Although patrol road activities situation would impact an individual of the species, no adverse effect to the species is anticipated.

(b) (7)(E)

Source: Douglas (1970) USGS 1:250,000 Topographic Map

Figure 3-7b: General Location Map of Protected Species within the Douglas Station Area of Operation

Scale: on map

Date: June 2002

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Drag Road Activities

All drag roads are located (b) (7)(E) (Figure 3-7a). The nearest Chiricahua leopard frog location is (b) (7)(E) of this activity (Figure 3-7b). (b) (7)(E) no adverse impacts are expected to this species.

Off-Road Operations

Off-road activities entail the cross-country tracking of UDAs and illegal smugglers using horses or on foot, (b) (7)(E) throughout the station's AO. All-Terrain vehicles are used (b) (7)(E) to patrol the U.S.-Mexico border. Although the majority of the Chiricahua leopard frog sites are (b) (7)(E) of the concentration of USBP activities, there is the potential for off-road activities to impact one leopard frog location (b) (7)(E) of the U.S.-Mexico border. Off-road patrols could physically harm an individual of this species and/or degrade habitat along the drainage where the frog is located. Although off-road activities may affect an individual, they are not likely to adversely affect the species.

Air Operations

(b) (7)(E) air operations would not affect the Chiricahua leopard frog.

Sensors

Sensors in the Douglas Station's AO are concentrated (b) (7)(E) . Since the nearest documented Chiricahua leopard frog location is (b) (7)(E) (b) (7)(E) north of the border, no effects from sensor maintenance is anticipated.

Checkpoints and Observation Points

Currently, (b) (7)(E) is in operation within the station's AO. The closest known Chiricahua leopard frog location is (b) (7)(E) Operation of (b) (7)(E) would not affect the Chiricahua leopard frog.

3.7.3 Conclusions

The Douglas Station AO has only one protected species known to occur within its boundaries. The potential affects to the Chiricahua leopard frog due to the operations of the Douglas Station AO are discussed below. Table 3-7 summarizes these effects.

Table 3-7
Effects Determination Matrix for Federally Protected Species
Within the Douglas Station's Area of Operations

Protected Species	USBP Activities/Operations					
	Patrol Roads	Drag Roads	Off-Road	Air	Sensors	Check Points
Chiricahua leopard frog	NLAA	NLAA	NLAA	NE	NE	NE

Legend:
NE = no effect
NLAA = may affect, not likely to adversely affect
LAA = may affect, likely to adversely affect

A known Chiricahua leopard frog site is located near one of the patrol road operations. This increases the potential for a USBP vehicle/frog collision. There is a possibility that a frog could be present on the road at the same time as a USBP vehicle. Thus, there is a potential for a USBP vehicle to collide with an individual of this species present on the road. However, these collisions would be infrequent.

The drag road, air, sensors and checkpoint operations would not affect this species within the Douglas Station AO.

The off-road operation effects to the leopard frog are the same as previously discussed for the patrol road operation.

3.8 Willcox Border Patrol Station

The Willcox Station's AO begins at the (b) (7)(E) and extends west 20 miles along the international boundary and abuts the Douglas Station's AO. The Willcox Station's AO is located in Cochise County, Arizona. Currently there are 60 agents assigned to the Willcox Station.

The easternmost 4-mile border section of the station's AO is extremely remote and mountainous. The remaining 16 border miles are relatively flat desert terrain. Within this station's AO, (b) (7)(E) . There are no towns or villages along the border in this station's AO; (b) (7)(E) . Two private ranches and the San Bernardino NWR are located within the Willcox Station's AO. The Willcox

Station apprehended 18,950 illegal aliens in FY 1998, in FY 1999 the number of apprehensions increased to 28,962 illegal aliens, and in FY 2000 the number of apprehensions again increased to 36,000 illegal aliens.

3.8.1 Willcox Station Activities

USBP activities within the Willcox Station AO are discussed below and are presented in Figure 3-8a. There are approximately 165 miles of patrol road within the station's AO. The principal patrol road in this area is (b) (7)(E) . (b) (7)(E)) is also patrolled (b) (7)(E) . All other patrol roads are patrolled (b) (7)(E) (b) (7)(E) . The Willcox Station (b) (7)(E) . The Willcox station does operate (b) (7)(E) which is in the Naco station's area of responsibility. However, the (b) (7)(E) (b) (7)(E) in the Willcox Station's AO.

(b) (7)(E) . (b) (7)(E) sensors are being used and are (b) (7)(E) Sensors are moved when necessary based on changes in alien traffic patterns. Maintenance to sensors is needed approximately (b) (7)(E) .

3.8.2 Protected Species

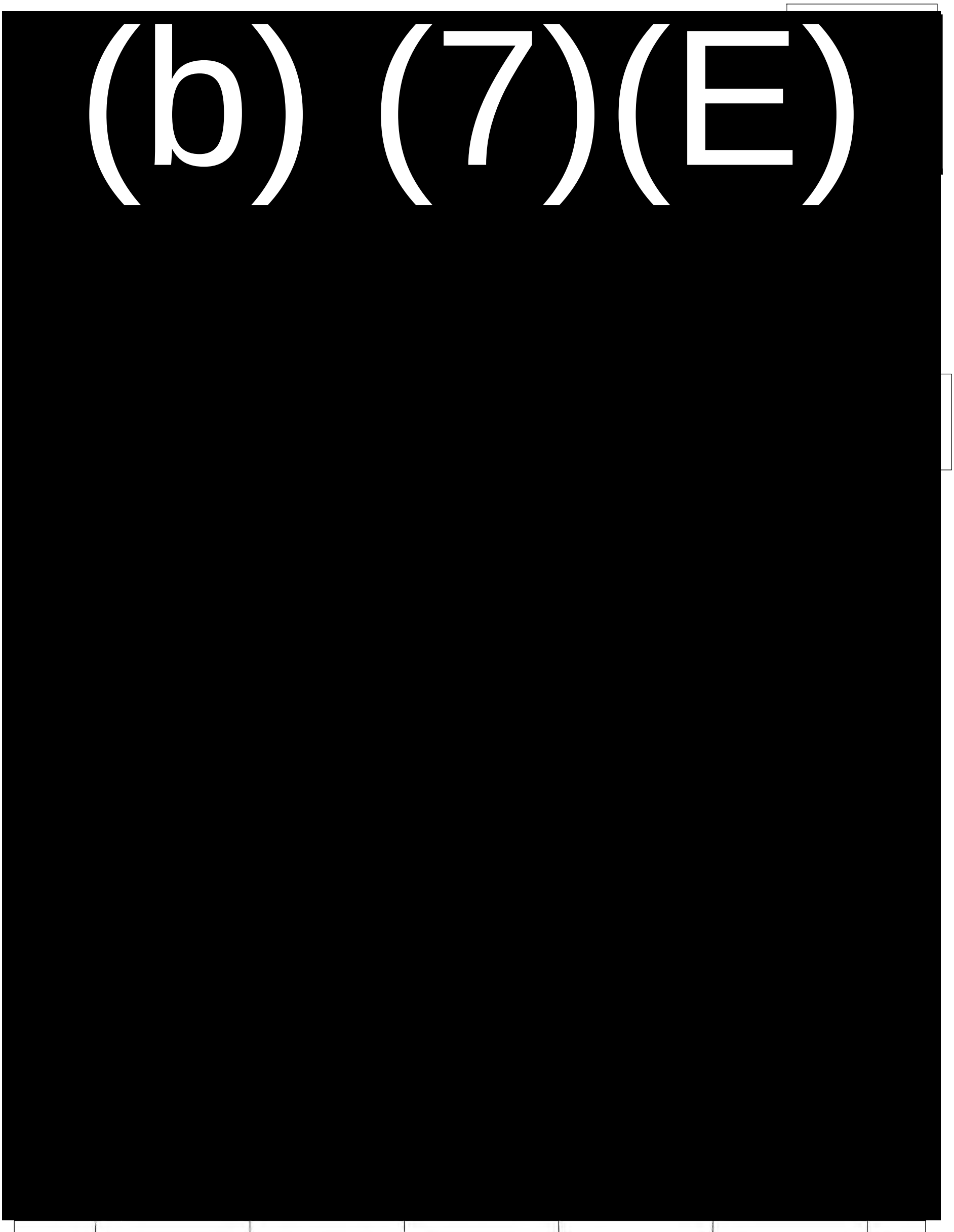
3.8.2.1 Cochise Pincushion Cactus

The Cochise pincushion cactus is known from the San Bernardino Valley, southwestern Cochise County, Arizona, and northern Sonora, Mexico. Three specimens have been confirmed near the border in the southeast corner of the Willcox Station's AO (Figure 3-8b).

Patrol Road Activities

There are approximately 165 miles of patrol roads utilized within the station's AO. (b) (7)(E) also utilized as a patrol road (Figure 3-8a). The majority of these roads are patrolled (b) (7)(E) r. Currently, one patrol road is located near a confirmed pincushion cactus location. (b) (7)(E) these activities would have no affect on the cactus.

(b) (7)(E)



Source: Douglas (1970) & Nogales (1969) USGS 1:250,000 Topographic Maps

Figure 3-8a: U.S. Border Patrol Activities within the Southern Willcox Station Area of Operations.

Scale: on map

Date: August 2002

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Drag Road Activities

The Willcox station (b) (7)(E) no effect from drag roads are anticipated.

Off-Road Operations

(b) (7)(E) no impacts to the Cochise pincushion cactus occur from off-road operations.

Air Operations

(b) (7)(E) impacts are not expected to the Cochise pincushion cactus.

Sensors

(b) (7)(E) sensor grids are in use within (b) (7)(E) In addition, (b) (7)(E), no impacts to the Cochise pincushion cactus would occur from the installation and maintenance of sensors.

Checkpoints and Observation Points

The Willcox Station operates (b) (7)(E) at the junction of (b) (7)(E) no impacts to the Cochise pincushion cactus would occur from checkpoint operations.

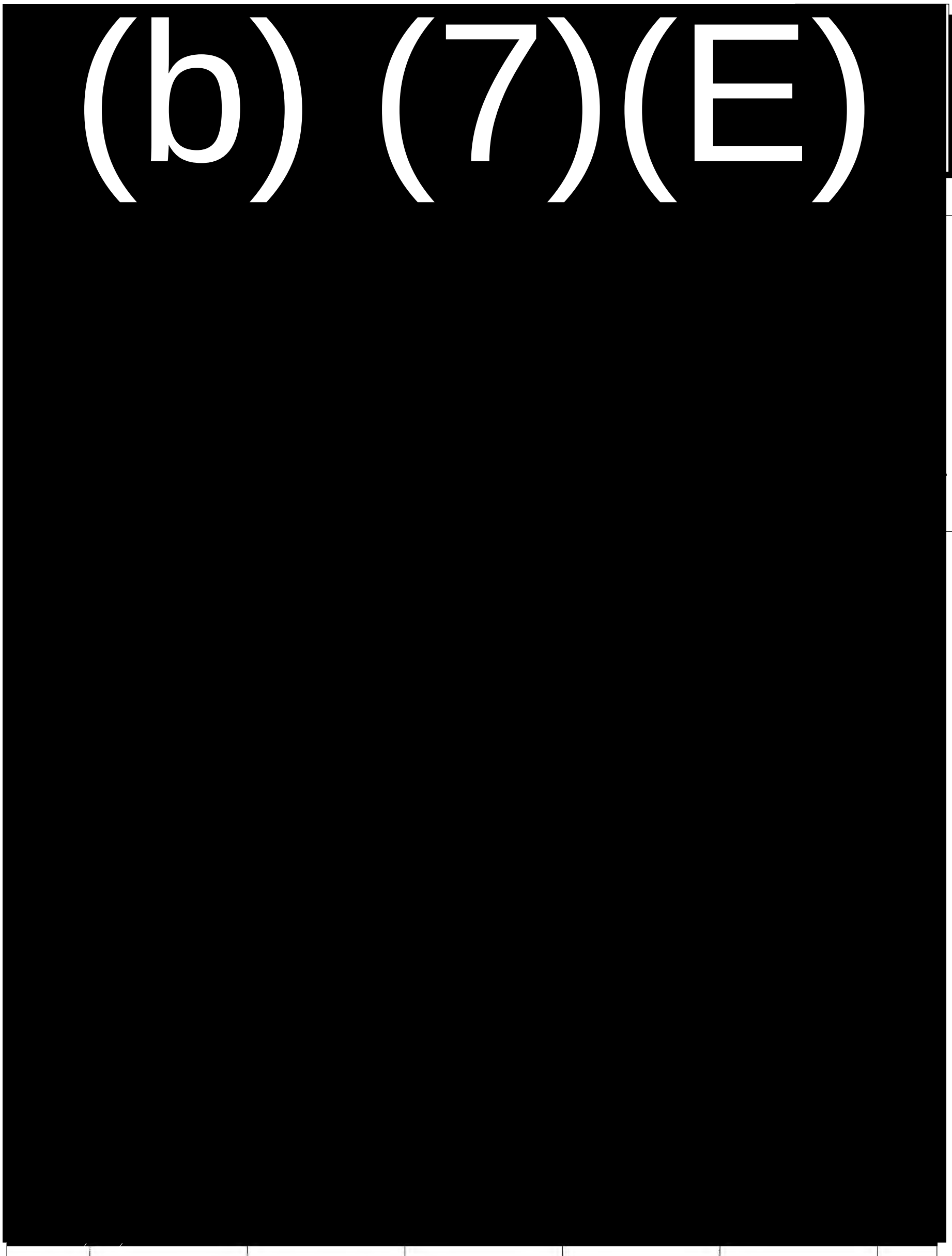
3.8.2.2 Mexican Spotted Owl

Mexican spotted owls occur within the Chiricahua Mountains in the northwest corner of the Willcox Station's AO (Figure 3-8b).

Patrol Road Activities

(b) (7)(E) there would be no impacts to the Mexican spotted owl from these types of activities (Figures 3-8a and 3-8b).

(b) (7)(E)



Source: Douglas (1970) & Nogales (1969) USGS 1:250,000 Topographic Maps

Figure 3-8b: General Location Map of Protected Species within the Wilcox Station Area of Operation

Scale: on map

Date: June 2002

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Drag Road Activities

The Willcox Station (b) (7)(E) no effect to the Mexican spotted owl are anticipated because no known owl locations are located near th (b) (7)(E)

Off-Road Operations

Currently, (b) (7)(E) in the Willcox Station's AO. Therefore, no impacts to the Mexican spotted owl would occur from off-road activities.

Air Operations

The Willcox Station's AO (b) (7)(E) within the station's AO, it is possible that Mexican spotted owls in the Chiricahua Mountains could experience overflights. Noise from these types of activities could have an adverse effect on Mexican spotted owls nesting within these areas.

Sensors

The only sensors grids used by the Willcox agents are located within the (b) (7)(E). The nearest sensor grid (b) (7)(E) (b) (7)(E), no impacts to spotted owls would result.

Checkpoints and Observation Points

The Willcox Station operates (b) (7)(E) Therefore, no impacts to the Mexican spotted owl would occur from checkpoint operations.

3.8.2.3 Huachuca Water Umbel

In Arizona, the Huachuca water umbel has been found in three counties: Pima, Santa Cruz, and Cochise. Within the Willcox Station's AO, the water umbel has been documented near the U.S.-Mexico border within the San Bernardino Valley (Figure 3-8b). Critical habitat for the Huachuca water umbel was designated in Federal Register 63 FR 71838; however, no critical habitat has been designated within the Willcox Station's AO.

Patrol Road Activities

(b) (7)(E)

confirmed water umbel locations. Although (b) (7)(E) does pass near the two locations, (b) (7)(E) , under the current level of effort, patrol road activities would not impact this species.

Drag Road Activities

The Willcox station (b) (7)(E) , no impacts to the Huachuca water umbel occur from these types of activities.

Off-Road Operations

(b) (7)(E) no impacts to this species would occur.

Air Operations

The Willcox AO (b) (7)(E) no impacts to the Huachuca water umbel would be expected within the Willcox Station's AO.

Sensors

(b) (7)(E) Agents walking to sensor sites to perform installation and/or maintenance activities could cause harm to this species by accidental direct contact. The installation and maintenance of these sensors involves minimal removal or disturbance of vegetation. (b) (7)(E) the installation and/or maintenance activities could impact, but are not likely to adversely affect this species.

Checkpoints and Observation Points

The Willcox Station operates (b) (7)(E) , no impacts to the Huachuca water umbel would occur from checkpoint operations.

3.8.2.4 Gila topminnow

Within the Willcox Station's AO, the Gila topminnow has been documented near the U.S.-Mexico border within the SBNWR (Figure 3-8b). Furthermore it is considered to potentially inhabit all aquatic habitat within the refuge.

Patrol Road Activities

(b) (7)(E) (b) (7)(E) therefore, no impacts are expected from these activities.

Drag Road Activities

The Willcox station (b) (7)(E) . Therefore, no impacts to the Gila topminnow would occur from these types of activities.

Off-Road Operations

(b) (7)(E) within the station's AO; therefore, no impacts to the Gila topminnow would occur as a result of this type of operation.

Air Operations

The Willcox AO (b) (7)(E) , no impacts to the Gila topminnow would be expected within the Willcox Station's AO.

Sensors

In the Willcox Station's AO (b) (7)(E) where the Gila topminnow occurs. Agents walking to sensor sites to perform installation and/or maintenance activities could impact the species by habitat degradation. The installation and maintenance of these sensors does not involve the removal or disturbance of any vegetation. However, since (b) (7)(E) , the installation and/or maintenance activities could impact, but are not likely to adversely affect this species.

Checkpoints and Observation Points

The Willcox Station operates (b) (7)(E) , no impacts to the Gila topminnow would occur from checkpoint operations.

3.8.2.5 Chiricahua Leopard Frog

The Chiricahua leopard frog has been documented near the U.S.-Mexico border within the (b) (7)(E) (Figure 3-8b), within the Willcox Station's AO, and is known to inhabit riparian areas.

Patrol Road Activities

The majority of these roads (b) (7)(E) (b) (7)(E) A potential exists for a USBP vehicle/frog collision if a frog was present (b) (7)(E) (b) (7)(E) at the same time as a USBP vehicle. However, the potential for a USBP vehicle/frog collision is unlikely; therefore, this activity is not expected to have an adverse effect on the Chiricahua leopard frog.

Drag Road Activities

The Willcox station (b) (7)(E) , no impacts to the Chiricahua leopard frog would occur from these types of activities.

Off-Road Operations

The Chiricahua leopard frog would not be impacted by off-road operations (b) (7)(E) in the station's AO.

Air Operations

The Willcox AO (b) (7)(E) no impacts to the Chiricahua leopard frog would be expected within the Willcox Station's AO.

Sensors

The Willcox Station currently uses approximately (b) (7)(sensors during their daily operations. (b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E) . Agents walking to sensor sites to perform installation and/or maintenance activities could impact this species by accidental direct contact and habitat degradation. The installation and maintenance of these sensors does not involve the removal or disturbance of any vegetation. (b) (7)(E) , the installation and/or maintenance activities could impact this species.

Checkpoints and Observation Points

The Willcox Station (b) (7)(E) , no impacts to the Chiricahua leopard frog would occur from checkpoint operations.

3.8.3 Conclusions

The Willcox Station has five known protected species within the AO. The operation potential affects to these species are summarized in Table 3-8.

Table 3-8
Effects Determination Matrix for Federally Protected Species
Within the Willcox Station's Area of Operations

Protected Species	USBP Activities/Operations					
	Patrol Roads	Drag Roads	Off-Road	Air	Sensors	Check Points
Cochise Pincushion Cactus	NE	NE	NE	NE	NE	NE
Mexican Spotted Owl	NE	NE	NE	LAA	NE	NE
Huachuca Water Umbel	NE	NE	NE	NE	NLAA	NE
Gila Topminnow	NE	NE	NE	NE	NLAA	NE
Chiricahua leopard frog	NLAA	NE	NE	NE	NLAA	NE

Legend:
NE = no effect
NLAA = may affect, not likely to adversely affect
LAA = may affect, likely to adversely affect

The patrol road operations have the potential for a vehicle/leopard frog collision, but would be very unlikely. This is the only species that would have the potential to be affected by this operation, however, the species would not be adversely affected.

The drag road, off-road and checkpoint operations would not affect any protected species located within the AO.

The air operations (b) (7)(E) , a potential exists to adversely affect the Mexican spotted owl in the Chiricahua Mountains with overflights.

Sensors (b) (7)(E) species could be potentially affected by this operation by direct contact with the USBP agents during maintenance activities. Although the species could be affected, these affects would not be adverse.

SECTION 4.0
CONSERVATION MEASURES

4.0 CONSERVATION MEASURES

The following conservation measures were investigated and should be incorporated to avoid, minimize, and/or mitigate potential impacts to protected species within the Tucson Sector. These measures were organized into categories based on USBP operations and activities including: patrol road activities, drag road activities, off-road operations, air operations, sensors, and checkpoint operations. Sector wide conservation measures that have been undertaken are discussed in the following paragraphs. Conservation measures specific to each station, will be addressed later in this section.

4.1 Management Responsibilities

The nature of the USBP's mission is such that unforeseen situations may arise that have never occurred in the past, and may never occur again in the future. Nevertheless, the USBP is required to be prepared for and be able to respond to all activities related to the prevention, detection, and apprehension of illegal aliens and/or persons smuggling contraband into the United States. Such situations may require the USBP to engage in activities not specifically described in this BA. However, the semi-annual protected species training sessions will provide agents the necessary awareness to conduct their activities with care in areas where protected species and/or designated critical habitat occur.

In 1987, INS entered into a Memorandum of Understanding (MOU) with the USFWS regarding permissible activities by the USBP within the CPNWR. The MOU was updated and signed on November 12, 1999. In addition, the USBP has maintained a high level of cooperation and communication with the AGFD.

Each station within the Tucson Sector will designate a management representative and a single point of contact with the responsibility to ensure compliance with the conservation measures. This representative will have the authority to redirect activities that may be in violation of such measures. The representative will be designated to receive and investigate reports or unauthorized activities and will be available to address USFWS concerns.

All USBP field agents, including helicopter pilots, will be trained regarding the physical characteristics and basic ecology of Federally protected species that could be encountered during

operations. The USBP management representative from each station will arrange for local USFWS personnel to conduct the initial training session. Protected species training will then be conducted biannually for all new field personnel. This training will be required for all USBP agents working in the field. As part of the overall operation, all personnel will be informed that intentional disturbance or harassment of protected species is a violation of the ESA and could result in prosecution.

Patrol Road Operations

To reduce the likelihood of vehicle strikes to protected species while agents are conducting patrol activities, vehicles must be kept at a safe rate of speed. A safe rate of speed must be observed (b) (7)(E)

Drag Road Operations

To minimize disturbance to protected species, drag road activities must remain within the currently established right-of-way. Every effort must be made to avoid expanding the current width of the existing drag roads.

Off-road Operations

(b) (7)(E) to the maximum extent possible. USBP vehicles are (b) (7)(E) . (b) (7)(E) . During off-road pursuits and SAR missions, every effort will be made to reduce impacts to the surrounding habitat. (b) (7)(E)

Air Operations

Minor flight path modifications will be made as recommended by the USFWS and AGFD as warranted by the location of Sonoran pronghorn, Mexican spotted owl protected activity centers, and lesser long-nosed bat and roost locations. To the maximum extent possible, any major changes in illegal entry patterns that require a significant change in the existing helicopter routes will be discussed with USFWS personnel prior to implementation. In addition, to the extent possible and with the understanding that the mission of the USBP will not be jeopardized, the

Sonoran pronghorn, Mexican spotted owl protected activity centers, and lesser long-nosed bat habitats will be avoided during breeding season.

Sensors

To the maximum extent possible, (b) (7)(E) (b) (7)(E) that do not require the removal of riparian vegetation, agave, or any cactus species.

Checkpoint Operations

No modification to checkpoint operations are necessary to avoid or minimize impacts to protected species within the Tucson Sector.

4.1.1 Ajo Border Patrol Station

Known concentrations of Sonoran pronghorn are, and will continue to be, avoided by USBP pilots to the maximum extent possible. In addition, USBP pilots helicopter pilots should maintain flight logs that will include observations of sightings of Sonoran pronghorn and other protected species, and details regarding the animals' behavior during the encounter. Encounters will be documented, and the USBP will consult with the USFWS, as warranted. Helicopters traveling within the pronghorn range, (b) (7)(E) to reduce the associated effects to Sonoran pronghorn in the area. As recommended in the Yuma Sector BA, USBP (b) (7)(E) (b) (7)(E) situations (INS 1999).

(b) (7)(E) Station's AO travels near a documented cactus ferruginous pygmy-owl location and two known lesser long-nosed bat roost sites. This flight route should be adjusted to avoid the (b) (7)(E) . Every effort will be made to avoid entering caves and mines used as day roosts by the lesser long-nosed bat. Additionally, if any lesser long-nosed bats or pygmy-owls are observed during USBP operations or activities, these encounters should be documented and the information made available to the USFWS and AGFD.

4.1.2 Casa Grande Border Patrol Station

The Casa Grande Station will implement the Sector-wide conservation measures discussed at the beginning of this section. No station specific conservation measures are required for the current level of operations.

4.1.3 Tucson Border Patrol Station

Currently, there are no established (b) (7)(E) Tucson Station's AO. Helicopters traveling through (b) (7)(E) could pass over documented pygmy-owl locations. Helicopter pilots will be instructed on where pygmy-owls occur, and what routes should be flown to avoid these areas, especially during the breeding season.

Off-road activities conducted in (b) (7)(E) could cause pygmy-owls to flee the area. To reduce these types of impacts, USBP agents will be instructed on where pygmy-owls have been confirmed, that these areas are to be avoided during off-road activities. Whenever possible, activities conducted away from improved or public roads should be restricted to existing unimproved roads and trails to avoid impacts to the Pima pineapple cactus.

4.1.4 Nogales Border Patrol Station

Noise from helicopter patrols within the (b) (7)(E) could have adverse effects on nesting Mexican spotted owls. (b) (7)(E) where there are no spotted owls or peregrine falcon nests. To the maximum extent possible, helicopters should also (b) (7)(E), to avoid impacts to these two species.

Off-road activities conducted near (b) (7)(E). Any off-road activities occurring in or near the creek could also degrade the riparian and aquatic habitat in the area. Depending on the frequency of these activities, off-road operations in the (b) (7)(E) area could impact the Gila topminnow. Off-road activities occurring in riparian areas could also disturb pygmy-owls in the area. Any activities near the confirmed pygmy-owl locations could cause the owls to flee the area for at least a short time. Therefore, (b) (7)(E) should be avoided during all off-road activities including foot patrols. Whenever possible, activities conducted away from improved or public roads should be restricted to existing unimproved roads and trails to avoid impacts to the Pima pineapple cactus.

4.1.5 Sonoita Border Patrol Station

(b) (7)(E) within the Sonoita Station's AO, it is possible that Mexican spotted owls nesting within the (b) (7)(E) could experience helicopter overflights. Two lesser long-nosed bat roosts, Manila Mine, and Patagonia bat cave, are also located within the (b) (7)(E). To avoid impacts to these two species, helicopter routes (b) (7)(E)

It is possible that USBP agents could track UDAs into the (b) (7)(E) bat cave causing disturbances to the lesser long-nosed bats and possibly disrupting normal behavior. The magnitude of these effects would depend upon the time (day/night and season), duration of the traffic, and the number of persons in the cave. Agents entering known roost sites during the day from April through October would be expected to disturb, and most likely affect this species. (b) (7)(E) in which case, human disturbance has most likely already occurred.

Currently, off road activities are conducted within the (b) (7)(E) where the Gila topminnow and Huachuca water umbel have been documented. Any off-road activities occurring in or near the (b) (7)(E) could degrade the riparian and aquatic habitat of the area. Depending on the frequency of these activities, off-road operations in or near the (b) (7)(E) could adversely affect the Gila topminnow and Huachuca water umbel. To avoid impacts to these species, as well as the Huachuca water umbel critical habitat area, the (b) (7)(E) area should be avoided during all off-road operations. Off-road vehicles should only cross the river at (b) (7)(E)

Patrol road activities are restricted to existing roads within the (b) (7)(E), roads passing through the (b) (7)(E) could affect the Gila topminnow. To avoid impacts to the Gila topminnow, the segments of primitive roads that pass through the (b) (7)(E) should no longer be utilized as patrol roads.

4.1.6 Naco Border Patrol Station

(b) (7)(E) within the Naco Station's AO, it is possible that Mexican spotted owls nesting within the (b) (7)(E) could experience helicopter overflights. Additionally, one lesser long-nosed bat roost, the (b) (7)(E), is located within the (b) (7)(E)

(b) (7)(E) To avoid impacts to these three species, helicopter routes should be adjusted to avoid the (b) (7)(E)

4.1.7 Douglas Border Patrol Station

The Douglas Station should implement the Sector wide conservation measures discussed at the beginning of this section. No station specific conservation measures are required for the current level of operations.

4.1.8 Willcox Border Patrol Station

(b) (7)(E) within the Willcox Station's AO, it is possible that Mexican spotted owls nesting in the (b) (7)(E) could experience helicopter overflights. To avoid impacts to these two species, helicopter routes should be adjusted to avoid the (b) (7)(E)

Horse patrols conducted within the (b) (7)(E) occur within documented Cochise pincushion cactus locations. Horse patrols could affect the cactus by direct accidental contact and through habitat degradation. To minimize impacts to the Cochise pincushion cactus, horse patrols (b) (7)(E)

(b) (7)(E) in the vicinity of confirmed Huachuca water umbel locations. The installation and maintenance of sensors does not involve the removal or disturbance of any vegetation; however, agents walking to sensor sites could cause harm to this species through accidental direct contact. (b) (7)(E) away from the confirmed water umbel locations to avoid any possible impacts.

4.2 Conclusions

The USBP has determined that, at their current activity level, some USBP activities may affect protected species within the Tucson Sector (Table 4-1). The protected species determinations are based on the USBP's current activity level; therefore, many of these determinations could be downgraded to a less severe category if the conservation measures, outlined above, are incorporated within the operational activities at each station within the Tucson Sector. The USBP has also determined that, at their current activity level, some activities may affect other listed

species identified within the Tucson Sector (Table 4-1). However, based on project limitations, effects to these species could not be determined at this time.

The USBP mission is critical, not only for National security, but to help reduce crime and the influx of illegal drugs and weapons into the United States. To achieve its mission, USBP must continue to use proven tactics such as patrol roads, drag roads, off-road operations, air operations, sensors, and checkpoints within the Tucson Sector.

Table 4-1
Effects Determination Matrix for Federally Protected Species Within the Tucson Sector

Protected Species	USBP Activities/Operations					
	Patrol Roads	Drag Roads	Off-Road	Air	Sensors	Check Points
Ajo Station						
Sonoran Pronghorn	NLAA	NE	LAA	LAA	NE	NLAA
Cactus Ferruginous Pygmy-owl	NLAA	NE	NLAA	NLAA	NE	NE
Lesser Long-nosed Bat	NNLA	NE	LAA	NLAA	NE	NE
Sonoyta Mud Turtle	UDE	UDE	UDE	UDE	UDE	UDE
Casa Grande Station						
Cactus Ferruginous Pygmy-owl	NE	NE	NLAA	NLAA	NE	NE
Jaguar	NE	NE	NLAA	NLAA	NE	NE
Tucson Station						
Cactus Ferruginous Pygmy-owl	NLAA	NE	LAA	LAA	NE	NE
Pima Pineapple Cactus	NE	NE	NLAA	NE	NLAA	NE
Masked Bobwhite Quail	NLAA	NE	NLAA	NLAA	NE	NE
Chiricahua Leopard Frog	NE	NE	NLAA	NE	NE	NE
Jaguar	NE	NE	NLAA	NLAA	NE	NE
Nogales Station						
Mexican Spotted Owl	NLAA	NLAA	NE	LAA	NLAA	NE
Cactus Ferruginous Pygmy-owl	NLAA	NE	LAA	NE	NLAA	NE
Lesser Long-nosed Bat	NLAA	NLAA	NLAA	NLAA	NE	NE
Gila Topminnow	NE	LAA	LAA	NE	NE	NE
Pima Pineapple Cactus	NE	NE	NLAA	NE	NLAA	NE
Chiricahua Leopard Frog	NE	NE	NLAA	NE	NE	NE

Table 4-1 continued

Protected Species	USBP Activities/Operations					
	Patrol Roads	Drag Roads	Off-Road	Air	Sensors	Check Points
Jaguar	NE	NE	NLAA	NLAA	NE	NE
Sonoita Station						
Mexican Spotted Owl	NLAA	NE	NLAA	LAA	NLAA	NE
Lesser Long-nosed Bat	NE	NE	LAA	LAA	NE	NE
Huachuca Water Umbel	NE	LAA	LAA	NE	NLAA	NE
Gila Topminnow	LAA	NE	LAA	NE	NLAA	NE
Chiricahua Leopard Frog	LAA	NLAA	NLAA	NE	NLAA	NE
Naco Station						
Mexican Spotted Owl	NLAA	NLAA	NE	NLAA	NE	NE
Lesser Long-nosed Bat	NLAA	NLAA	NE	NLAA	NE	NLAA
Huachuca Water Umbel	NE	NE	NLAA	NE	NE	NLAA
Chiricahua Leopard Frog	NE	NE	NLAA	NE	NE	NE
Douglas Station						
Chiricahua Leopard Frog	NLAA	NE	NLAA	NE	NE	NE
Willcox Station						
Cochise Pincushion Cactus	NE	NE	NE	NE	NE	NE
Mexican Spotted Owl	NE	NE	NE	LAA	NE	NE
Huachuca Water Umbel	NE	NE	NE	NE	NLAA	NE
Gila topminnow	NE	NE	NE	NE	NLAA	NE
Chiricahua Leopard Frog	NLAA	NE	NE	NE	NLAA	NE

Legend:
NE = no effect
NLAA = may affect, not likely to adversely affect
LAA = may affect, likely to adversely affect

SECTION 5.0
LIST OF PREPARERS

5.0 LIST OF PREPARERS

The following people were primarily responsible for preparing this Programmatic Environmental Impact Statement.

NAME	ORGANIZATION	DISCIPLINE/ EXPERTISE	EXPERIENCE	ROLE IN PREPARING EIS
(b)(6)(b)(7)(C)	Gulf South Research Corporation	Biology/Ecology	22 years NEPA and related studies	BA Review
	Gulf South Research Corporation	Forestry and Wildlife	14 years NEPA and related studies	BA Preparation and BA Review
	Gulf South Research Corporation	GIS/Graphics	7 years GIS analysis	Graphics and GIS
	Gulf South Research Corporation	Forestry and Wildlife	14 years NEPA and related studies	GSRC Project Manager, BA Preparation and BA Review
	Gulf South Research Corporation	Wildlife Conservation	9 years natural resource and 2 years NEPA Studies	BA Preparation and Effects Analysis
	Gulf South Research Corporation	Wildlife and Fisheries Management	7 years NEPA and Related Studies	BA Preparation and Effects Analysis

SECTION 6.0
ACRONYMS AND ABBREVIATIONS

6.0 ACRONYMS AND ABBREVIATIONS

Above Ground Level	AGL
All-Terrain Vehicles	ATV
Area of Operation	AO
Arizona Game and Fish Department	AGFD
Barry M. Goldwater Range	BMGR
Biological Assessment	BA
Biological Opinion	BO
Buenos Aires National Wildlife Refuge	BANWR
Bureau of Land Management	BLM
Cabeza Prieta National Wildlife Refuge	CPNWR
Code of Federal Regulations	CFR
Department of Defense	DoD
Endangered Species Act	ESA
Federal Register	FR
Fiscal Year	FY
Gulf South Research Corporation	GSRC
Immigration and Nationality Act	INA
Immigration and Naturalization Service	INS
Leslie Canyon National Wildlife Refuge	LCNWR
National Park Service	NPS
Organ Pipe Cactus National Monument	OPCNM
San Bernardino National Wildlife Refuge	SBNWR
Search and Rescue	SAR
U.S. Army Corps of Engineers	USACE
U.S. Border Patrol	USBP
U.S. Fish and Wildlife Service	USFWS
U.S. Forest Service	USFS
Undocumented Alien	UDA
United States Code	U.S.C.
United States	US

SECTION 7.0
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7.0 REFERENCES

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SECTION 8.0
LIST OF CONTACTS

8.0 LIST OF CONTACTS

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Cabeza Prieta National Wildlife Refuge
1611 North Second Avenue
Ajo, Arizona 85321

SECTION 9.0
AGENCY COORDINATION

THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT
2221 WEST GREENWAY ROAD, PHOENIX, AZ 85023-4399
(602) 942-3000 • WWW.AZGFD.COM

May 13, 2002

(b) (6)
Natural Resources
GSRC
PO Box 83564
Baton Rouge, LA 70884-3564

Re: Special Status Species Information for **Pima, Cochise, and Santa Cruz Counties: within 15 Miles of International Border; Tucson Sector of the INS.**

Dear (b) (6)

The Arizona Game and Fish Department (Department) has reviewed your request, dated April 24, 2002, regarding special status species information associated with the above-referenced project area. The Department's Heritage Data Management System (HDMS) has been accessed and current records show that the special status species listed on the attachment have been documented as occurring in the project vicinity (15-mile radius). In addition, this project occurs in the vicinity of designated Critical Habitats for the loachminnow, spikedace, southwestern willow flycatcher, Huachuca water umbel, Sonora chub, Mexican spotted owl, Quitobaquito pupfish, Yaqui shiner, Yaqui chub, and Yaqui catfish.

The Department's HDMS data are not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity.

Making available this information does not substitute for the Department's review of project proposals, and should not decrease our opportunities to review and evaluate new project proposals and sites. The Department is also concerned about other resource values, such as other wildlife, including game species, and wildlife-related recreation. The Department would appreciate the opportunity to provide an evaluation of impacts

to wildlife or wildlife habitats associated with project activities occurring in the subject area, when specific details become available.

If you have any questions regarding this letter, please contact me a (b) (6) General status information, county and watershed distribution lists and abstracts for some special status species are also available on our web site at http://www.azgfd.com/frames/fishwild/hdms_site/Home.htm.

Sincerely,

(b) (6)

Heritage Data Management System, Coordinator

(b) (6)

cc: (b) (6) Project Evaluation Program Supervisor
(b) (6) Habitat Program Manager, Region V

AGFD# 4-26-02(11)

TUSCON SECTOR BIOLOGICAL ASSESSMENT MEETING
US FISH AND WILDLIFE SERVICE MEETING
ARIZONA ECOLOGICAL SERVICES FIELD OFFICE
PHOENIX, ARIZONA
26 February 2002

Attendees:

(b)(6)(b)(7)(C)

The purpose of the meeting was to discuss the USFWS' comments on the March 2000 draft BA, which were provided in a letter dated January 17, 2002. The USFWS requested the meeting to discuss the comments provided and to coordinate the revisions to the Preliminary Draft Biological Assessment for the Tucson Sector (March 8, 2000).

(b) (6) indicated that all current and proposed USBP activities need to be clearly defined in the BA, especially the number of aircrafts, flight routes, and flight frequencies.

(b) (6) provided an updated list of species to be covered in the BA. (b) (6) suggested that the following species could be excluded from analysis: American Peregrine falcon, Acuna cactus, Blumer's dock, Lemmon fleabane, Nichol's Turk's head cactus, Sonoyta mud turtle, Huachuca springsnail, whooping crane, and jaguarundi. He indicated the beautiful shiner, Yaqui catfish, Yaqui chub, Yaqui topminnow, Kearney blue star, and bald eagle could be also be excluded if they do not occur in the project area. (b) (6) also suggested the flat-tailed horned lizard and Chiricahua leopard frog be included in future Section 7 consultation because they are both proposed for listing as threatened.

(b) (6) suggested updating species occurrence information with the Arizona Heritage Database Management System. They gave names and numbers to contact for this data. (b) (6) will take the lead on contacting Natural Heritage. (b)(6)(b)(7)(C) (b) (6) on 28 February 2002 and told them GSRC would be contacting them regarding species occurrence data].

(b) (6) indicated critical habitat needed to be updated for the spikedace and loach minnow in the BA. He said we do not need to discuss critical habitat issues that were recently thrown out by the courts.

(b) (6) indicated low level; night flights in the vicinity of lesser long-nosed bat roosts need to be addressed in the BA. The Marines have done some research on these types activities in regards to the bat.

The description of the action area needs to be updated in the revised BA. (b) (6) suggested using the five existing revised BOs as examples. The action area would include all areas where direct and indirect effects could occur.

80306043

United States Department of the Interior

Fish and Wildlife Service

Arizona Ecological Services Field Office
2321 W. Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951

(b) (6) FAX (602) 242-2513
E-mail: (b) (6)

FACSIMILE TRANSMISSION

January 17, 2002

TO: (b) (6)

AGENCY: GSRC

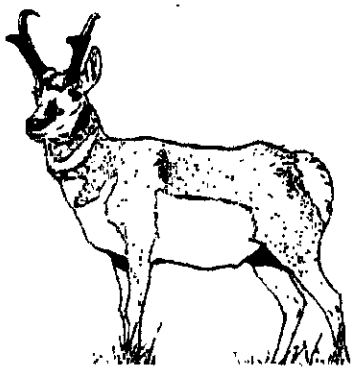
FAX #: 225-761-8077

FROM: (b) (6)

SUBJECT: Tucson BA comments and letter

 # PAGES (including this page): 9

COMMENTS: Attached is a copy of the final letter that is being mailed today. The next step is to set up a meeting with Yuma Sector and separately with the Tucson office. We would like to have (b) (6) there for the Tucson meeting. (b) (6) for Yuma for sure. We feel that is very important to have local BP personnel involved who will be involved in the negotiations and final terms of the consultation.



Problems with copy quality? Please contact the person who sent the document.

AESO/SE
2-21-99-I-138

January 17, 2002

(b) (6) Acting Director
Headquarters Facilities and Engineering Division
U.S. Department of Justice
Immigration and Naturalization Service
425 I Street NW
Washington, D.C. 20536

Attention (b) (6)

Dear (b) (6)

This letter is in response to your request of October 12, 2001, for a Fish and Wildlife Service (Service) review of the March 8, 2000, second preliminary draft of the biological assessment (BA) of field activities by the nine U.S. Border Patrol (USBP) stations within the Tucson Sector, Arizona, pursuant to ongoing informal consultation under the Endangered Species Act (16 U.S.C. 1531-1544), as amended, with the Immigration and Naturalization Service (INS).

On April 25, 2000, personnel of this office met with nine representatives of the INS, USBP, and the consulting firm, Gulf South Research Corporation (GSRC), to continue informal discussions on the Tucson consultation and review the second preliminary draft of the BA. The Service requested, as was done in the Yuma consultation, that INS select a primary contact from among the contractors and the Army Corps of Engineers. A local Border Patrol employee should be similarly designated so that we have a local contact as we did with the Yuma Border Patrol. The Service was told in the meeting that GSRC (b) (6) would be the point of contact (POC) for unofficial or informal contacts and correspondence. Formal correspondence would still go through INS (b)(6)(b)(7)(C). In a subsequent phone conversation, Agent (b)(6)(b)(7)(C) identified (b)(6)(b)(7)(C) as the USBP local POC for the Tucson Consultation. In subsequent e-mail and phone conversations, the Service informed GSRC that actions on the consultation would be delayed because of the Federal lawsuit with Defenders of Wildlife, et al., v. Bruce Babbitt, et al. (CA# 99-927 ESH).

Service comments on the March 8, 2000, preliminary draft biological assessment for the U.S. Border Patrol Tucson Sector operations are enclosed in an Excel spreadsheet.

In 50 CFR§ 402.14(c)(6) it states that the formal consultation process shall not be initiated by the Federal agency until the required biological assessment has been completed. The Service will notify you when we receive the final biological assessment; our notification letter will also outline the dates within which the formal consultation should be completed and the biological opinion delivered on the proposed action.

Please note that in response to Secretarial Order # 3206, dated June 5, 1997, the American Indian Tribal Rights, Federal Tribal Trust Responsibilities, and the Endangered Species Act, the Service provides with this letter timely notification to the Tohono O'odham Nation of an upcoming formal consultation with a proposed Federal agency action that may affect tribal rights or tribal trust resources. Furthermore, once the Border Patrol enters into formal consultation on this proposed action that may affect tribal resources, the Service shall notify the affected tribe (Tohono O'odham Nation) and the BIA and encourage you, the action agency, to invite their participation in the consultation.

The Service appreciates the opportunity to review this second preliminary draft and looks forward to working with the Border Patrol and its consultants on the Tucson Sector consultation. We request a meeting with your staff to discuss our comments and the completion of a consultation package. In all future correspondence on this project, please refer to the consultation number 2-21-99-I-138. We request a meeting with your staff to discuss our comments and completion of a consultation request package. If you have any questions or concerns about this consultation process, please contact (b) (6) (b) (6)

Sincerely,

(b) (6)
Field Supervisor

Enclosure

cc's w/enclosure:

Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ
Refuge Manager, Cabeza Prieta National Wildlife Refuge, Ajo, AZ
(b) (6) Arizona Game and Fish Department, Tucson, AZ
Park Superintendent, Organ Pipe Cactus National Monument, Ajo, AZ
Director, Arizona Game and Fish Department, Phoenix AZ
(b)(6)(b)(7)(C) Sector AT, USBP, Tucson, AZ

Tribal Chairman, Tohono O'odham Nation, Sells, AZ
Director, Bureau of Indian Affairs, Phoenix, AZ
(b) (6) Office of the Regional Solicitor, Albuquerque, NM

(b) (6)

#	Page	Section	Comment
1	pg.10-14	Table 2-1	The descriptions of the habitats need more detail and are incorrect for the Gila topminnow and desert pupfish. Remnant habitat is described and not what is really habitat for the species.
2	pg.10-14	Table 2-1	Spikedace and loach minnow are missing -- understandable because the critical habitat became final after the BA was drafted.
3	pg. 25	Habitat	Gila topminnow A number of occupied sites are missing. Some of these are in the text, some on the maps, and some not at all: Cottonwood Spring (on upper Sonoita Creek) Monkey Spring (just off upper Sonoita Creek) Redrock Canyon (tributary of Sonoita Creek at Patagonia) Fresno and Coalmine Canyons (tributary of lower Sonoita Creek) Santa Cruz River below the International Water Treatment Plant a side canyon off the Santa Cruz near Rio Rico Santa Cruz River in the San Rafael Valley Sharp Spring (just off Santa Cruz in San Rafael) Sheehy Spring (just off Santa Cruz in San Rafael) Heron Spring (just off Santa Cruz in San Rafael) Cienega Creek, including Matty Canyon There may also be several reintroduction sites that are still considered extant or suitable for augmentation stocking. Schoenherr is misspelled throughout the document. Errors have also been made in the description of the fish. Schoenherr (1974), whom they cite, says the mouth is "wide", not small. Schoenherr (1974) says that the gonopodium "is pale yellow at its base, becoming blood red in some cases", not "a blood red gonopodium", as stated there only the base gets colored and -- it's usually yellow or yellow-orange. We question the April through November reproductive season. Topminnow reproduce all year round in thermal waters, like Monkey Spring, and usually January through August (according to the recovery plan) elsewhere. Depending upon the site and year, fry can be found most of the year, except for the middle of winter in non-thermal waters. The historic range as presented is incorrect. The BA states: .."most perennial springs, streams, and vegetated margins of rivers" in 10, AZ counties is incorrect. They don't occur above 1500 meters in elevation and don't inhabit high-gradient streams. Regarding the most current info on how many natural and how many stocked locations there are extant -- the last count we have was 12 natural and 18 stocked. The "associate plant community" is incomplete and may include more than just two types.
4	pg. 26	Threats	There is no single "main threat." It can be from dewatering, non-native introductions, etc.
5	pg. 88	Nogales BP Station	Nogales Station -- They have some horse patrols on lower (b) (7)(E) and "high vehicle entry" along the (b) (7)(E) The horse patrol effects on (b) (7)(E) are probably pretty benign, but there need to be a few more details, like locations and whether they patrol right along the creek. The BA states that their off-road activities on middle (b) (7)(E) may adversely affect Gila topminnow -- but activity descriptions are needs so the Border Patrol can analyze what those effects are.
6	104	Sonoita BP Station	Sonoita Station -- In the (b) (7)(E) they show the main road (b) (7)(E) There's a bridge over the (b) (7)(E) (b) (7)(E) (b) (7)(E) that may impact the river and/or (b) (7)(E) and one going south that intersects with (b) (7)(E) In the past these roads have not been a problem -- the landowner didn't allow anyone but themselves and the Border Patrol on them. However, the land south of the main road is now State Parks and access to (b) (7)(E) is a major issue. Anything that increases public access, either authorized or along inviting tracks made obvious by Border Patrol use, is a significant threat to (b) (7)(E) (b) (7)(E) from increased recreation damage and increased probability of introduction of nonnative species. North of the main road it's still private and there needs to be more information on the effects on the Border Patrol using the roads.
	104 continued		The BA also shows a (b) (7)(E) and the report states that the (b) (7)(E) of which we are not aware. At least as of a few years ago, the landowner had not allowed Border Patrol to put a road along the border on their property. If the State Parks is allowing it to be put in -- or even maintained, then that is a serious problem. Border roads in other areas tend to be highly eroded and open access to areas where access can be a serious concern. (b) (7)(E) these roads may still impact the stream. The BA also emphasizes Border Patrol (b) (7)(E) (b) (7)(E) in the conservation measures they say they'll try to avoid the river, but there's no real context for understanding what that means. Given these off-road and road/access problems, we believe serious adverse effects to Gila topminnow may occur in the (b) (7)(E)
	104 continued		In (b) (7)(E) the BA shows use on the main road into the lower canyon, except that the use extends quite (b) (7)(E) The main road was closed at (b) (7)(E) as a result of the USFS (b) (7)(E) on which there was a BO. Their map shows Border Patrol use (b) (7)(E) That may explain the fact that (b) (7)(E) (b) (7)(E) (b) (7)(E) where we are not aware there was a road. Please supply the Service with a better map so we can see where vehicles are actually going. In addition, the private landowners closed the road at (b) (7)(E) so there is about another mile of road they show using that is closed.

	104 continued		Driving on the (b) (7)(E) road keeps open a road that would disappear if BP didn't use it. The map also (b) (7)(E) (b) (7)(E) In addition, (b) (7)(E) will be closed by next January under the terms and conditions of the 1999 Coronado grazing opinion. Use of this road and other closed roads on the Forest compromises previous consultations.
	104 continued		Border Patrol mentions proposed (b) (7)(E) (b) (7)(E) More information, particularly location, is needed to determine effects.
			Border Patrol apparently uses the road (b) (7)(E) it is unclear if any activity is occurring at (b) (7)(E) We need more information about the activities at (b) (7)(E) to determine effects.
			In the Sonoita Station findings (table 3-6), we believe the appropriate determination is that drag roads are likely to adversely affect Gila Topminnow. We need more information about placement and maintenance of sensors to determine possible effects.
7	pg.112	Figure 3-6b	Spikedace and Loach Minnow -- understandable because the critical habitat became final after the BA was drafted. Border Patrol needs to analyze possible effects to skipedace and loach minnow critical habitat.
			Naco Station - The critical habitat for spikedace and loach minnow goes to the border. The activities that are likely to have adverse effects are the drag road (there's some major erosion coming off the road west of the (b) (7)(E) the off-road use, possibly horse patrols, and possibly the sensors (b) (7)(E) We need more information about these activities to evaluate effects.
8	pg. 51	Figure 3-1b	Desert Pupfish - There are now 2 listed species -- desert pupfish, *Cyprinodon macularius*, and Quitobaquito pupfish, *Cyprinodon eremus*, (which includes the Rio Sonoyta, too). Both need to be addressed in the BA. Quitobaquito is critical habitat, but it is also occupied by the Quitobaquito pupfish. Effects of proposed activities on Quitobaquito and the Rio Sonoyta need to be better described. If any adverse effects occur that are not insignificant or discountable, the appropriate determination is that the proposed action may adversely affect the species, regardless of net effects (which could be beneficial).
			"Unable to determine effect at this time" is not an acceptable section 7 finding.
			Sonoita Station -- Desert pupfish in (b) (7)(E) should be considered in the analysis. Border Patrol apparently uses the (b) (7)(E) could result in adverse effects.
9	pg.96	Figure 3-5b	Gila chub is presently in the San Pedro River basin in Mexico. The "main threat" term is used again. Habitat loss and nonnatives are inextricably interrelated.
10	pg.36	2.10.14 Gila Chub	Sonoita Station -- Border Patrol should consider potential effects of their activities on Gila chub at (b) (7)(E) (b) (7)(E) They should also think about Gila chub critical habitat potential in the (b) (7)(E) etc.
11	pg.96	Figure 3-5b	Sonora Chub - not Sonoran. (b) (7)(E) (which is normally called (b) (7)(E) , and is a tributary of the (b) (7)(E) Sonora chub is also found in Arizona in California Gulch, a tributary to the (b) (7)(E) The critical habitat is not 40 feet wide -- it's 12 meters. In regards to the statement: "This species appears to be locally abundant and should remain secure." The first part is true, the second part is not.
12	pg.79	Figure 3-4a	Nogales station -- The finding is that a detailed analysis was not conducted and they can't determine effects. There are Sonora chub in (b) (7)(E) also. There are three things on the maps that make us think there may be effects to Sonora chub. One is the horseback patrols throughout the (b) (7)(E) These probably aren't a problem assuming that they don't (b) (7)(E) (b) (7)(E) The road was recently rerouted. If Border Patrol is using the road for patrols, this constitutes off-road activities in (b) (7)(E) And the third is the map shows a drag road (b) (7)(E) (including the wilderness). We assume that is a mistake -- the USFS should not allow a road through the wilderness area. If it's not a mistake, the effects of the drag road have to be considered, including erosion, access, and road crossings of the stream.
12		continued	
13	pg.39	2.10.18	The Yaqui topminnow is found elsewhere other than the San Bernardino NWR. It occurs extensively in Mexico and is at (b) (7)(E) Chiricahua Mountains.
14	pg.39	Yaqui Topminnow	Naco Station -- Listed fish species occur in (b) (7)(E) Are there downstream sediment/erosion effects to the Rio Yaqi from the Douglas area activities -- or are any effects masked by Douglas and Agua Prieta?
15	pg.112	Yaqui Topminnow	Wilcox Station -- Fish and other listed species at San Bernardino NWR need to be recognized on the map. And again there is that finding of unable to determine effect. In the text they say that the activities will benefit the fish. Again, net effects are not used in Section 7 effects determinations.
16	pg.18	2.3.2 Habitat	Spotted Owl: first paragraph, insert before last sentence: "Foraging and juvenile dispersion corridors are often in more open, oak - dominated, habitat."
17	pg.18	2.3.2 Habitat	first paragraph, add at end of last sentence:" for nesting."
18	pg.18	2.3.2 Habitat	At end of second paragraph add sentence: Now, by court order, critical habitat was designated and became effective on March 5, 2001.
19	pg.19	2.3.3 Current Status	top of the page. first sentence, after "inhabits" add -" and have been found nesting in"

20	pg.19	2.3.3 Current Status	In third sentence, capitalize "Recovery Units".
21	pg.19	2.3.3 Current Status	In fourth sentence, after "owls" add "are known to"
22	pg.19	2.3.3 Current Status	In second from last sentence, capitalize "Recovery Unit.".
23	pg.19	2.3.4 Threats	Add new sentence at end-" Newer information suggests catastrophic fire, recreational and developmental effects as new threats to MSO."
24	pg.19	2.4 Peregrine	Delete whole section. The American Peregrine Falcon was removed from the endangered species list on August 25, 1999. (50 CFR Pt.17, vol. 64(164).
25	pg.41	2.10.20 Masked Bobwhite	In the third paragraph, the 6th sentence, add after "1995", and between 800-1000 in 1997.
26	pg.41	2.10.20 Masked Bobwhite	At the bottom of the page change "..by grazing, periodic draughts.." to .."by livestock grazing, periodic to severe droughts.."
27	pg.42	2.10.20 Masked Bobwhite	At the top of the page, after buffel grass change to "..(Pennisetum ciliare), which does not provide a utilizable food source.."
28	pg.43	2.10.22 Northern Aplomado Falcon	Change the third paragraph to the following: "The northern aplomado falcon is declining because of habitat degradation and habitat-type conversion due to brush encroachment fostered by decades of livestock overgrazing and fire suppression, overcollecting, and reproductive failure of the species caused by organochlorine pesticide use (Kiff, 1978). These pesticides are still in use today in Central and South America where the falcon winters."
29	pg. 1	1.0 Introduction	In this section the Border Patrol states that because of project restrictions they are not going to determine the effects of the project on all the species present in the project area. To not adequately review the actions of the Border Patrol and determine whether any action may affect listed species violates 50 CFR part 402.14(a).
30	pg. 1	1.1 Overview	In the last sentence of the first paragraph, add "for completeness" after "upon review of the BA".
31	pg. 6	1.3 Purpose	In this section the Border Patrol does not mention their interrelated and interdependent actions with U.S. Customs, D.E.A., and the National Guard.
32	pg.7	1.4 Operations	In the last sentence at the bottom of the page, this appears to minimize effects of the B.P. air operations. It does not include the aircraft used by agencies listed in #32 nor special operations like Operation Skywatch which has been done twice since March, 2000.
33	pg.8	1.4 Operations	At the top of page 8 checkpoints are mentioned but their interrelated effects are not adequately discussed. When B.P. puts a checkpoint on a paved highway there is very little interference to the traffic flow but there is a considerable effect to the surrounding area as illegals start to attempt to avoid the checkpoint. A recent example of this occurred when the B.P. put a (b) (7)(E) and a dramatic increase in illegal migrant traffic through the (b) (7)(E)
34	pg. 8	1.4 Operations	The last sentence should say Section 3, not Section 5.
35	pg. 9	2.1.1 SOPH -G.D.	In the last paragraph on this page note that the Core Working Group was reorganized into the Recovery Team for the Sonoran pronghorn in January of 2000. The paragraph also comments on SOPH genetics and the status of the subspecies. The SOPH is currently listed as a subspecies of the American pronghorn. If genetic studies currently underway do show that the subspecies is invalid, the population will be considered for protection under the distinct vertegrate population segment policy under the ESA. That designation has yet to be made because the SOPH is still considered a subspecies.
36	pg. 15	2.1.4 Threats etc.	This section needs to be updated in light of the state SOPH population survey done in December, 2000, and the Krausman report done in 2001 on the noise effects of military overflights on SOPH on the BMGR. The state population survey report showed us that in the previous two years, the SOPH had undergone a serious decline and only 99 animals were left. The Krausman report showed that military jets operating at (b) (7)(E) and above had little behavioral effect on the SOPH. However, the effect of helicopters is still shown in the literature as a strong disturbance for pronghorn, as do vehicles and people walking through an area.
37	pg. 22	2.6.1 LLNB	In the fifth sentence add "and overnight foraging flights of up to 40 miles from roosts."
38	pg. 49	3.1.1 Ajo Station	The Ajo Station area of operation covers all of the remaining Sonoran pronghorn habitat not already covered in the Yuma Sector consultation. As such we suggest that this section needs more detail so that a clear determination of the effects of the operation can be made. When terms like (b) (7)(E) and "only (b) (7)(E) with any regularity" are used, those qualifications give the Service nothing upon which to base an analysis of the impacts. The number of flights per year are needed, whether any changes are planned, is the BP budgeting for more helos, etc. The flight route through (b) (7)(E) passes by a lesser long-nosed bat maternity roost and the pass to the north is heavily used by SOPH. We suggest that you need to use the SOPH sighting data base prepared by Luke AFB in 2001 to analyze your impacts on SOPH since this was the subject of the recent N.O.I.
39	pg.49	continued	Also concerning air operations over (b) (7)(E) we have several letters in our files from the last year that indicate helicopter operations by law enforcement agencies that are not mentioned in this assessment.
39	pg. 57	3.1.2.3 LLNB	In the second paragraph of this section, we agree that helicopter noise at maternity roosts would have very little effect but there is a more likely direct physical effect to lesser long-nosed bats if a low flying helicopter operates near a maternity roost when the bats are exiting.
40	pg. 22	2.5.2 CFPO	In the second paragraph, fourth sentence, change to the following: The USFWS critical habitat proposal was finalized, then remanded by a Federal court order. Currently there is no critical habitat.
41	pg. 28	2.10.1	Acuna Cactus is a candidate species, it is not listed.
42	pg. 28	2.10.2	Blumer's Dock is not listed.
43	pg. 31	2.10.5	Lemmon Fleabane is not listed, it is a candidate species.
44	pg. 32	2.10.7	New Mexico ridgenose rattlesnake (note the spelling) - in the fifth sentence change it to: "This species has been documented in Arizona in the Peloncillo Mountains.

45	pg. 32	2.10.8	The Sonoyta mud turtle is not a listed species, it is a candidate.
46	pg. 33	continued	In the second paragraph, in the second from the last sentence: "The Sonoyta mud turtle is restricted to (b) (7)(E) n Organ Pipe Cactus National Monument and the Sonoyta River, Sonora." In the last sentance in the paragraph, remove the word "intermittent". In the last paragraph, second sentence, add "in the U.S." after population. In the last sentence change it to read. "Extremely limited distribution, predation by non-native species, and habitat loss, appear to be major threats to this species."
47	pg.33	2.10.9	Chiricahua Leopard frog is a species proposed for listing thus we recommend the Border Patrol request conferencing on this animal (50 C.F.R. 402.10). The species may be listed in the near future.
48	pg. 33	continued	In the second paragraph, first sentence, change "Western Jalisco" to "Chihuahua and Durango". Change the last sentence to ..."parts of western New Mexico; and south eastern Arizona, southwestern New Mexico, and portions of Mexico." In the fourth paragraph, change the first sentence to "The Chiricahua leopard frog was proposed as a threatened species without critical habitat on June 14, 2000."
49	pg.34	2.10.10	Sonora tiger salamander - In the first paragraph change the third and fourth sentences as follows: "It inhabits the San Rafael Valley and adjacent portions of the Huachuca and Patagonia Mountains. Its habitat varies from rolling grassland to mountain forests." In the second paragraph, eliminate the third sentence.
50	pg. 34	2.10.11	The Huachuca springsnail is not listed, it is a candidate species.
51	pg.44	2.10.23	Southwestern willow flycatcher - the first paragraph on this page should be changed to show that there is no critical habitat because of a current Federal court decision. Also the Service believes that this species is adversely affected by the Border Patrol policies. Border Patrol policies have driven undocumented migrants into the San Pedro River area where they start fires that destroy critical habitat.
52	pg.55	3.1.2.2	Cactus Ferruginous Pygmy-owl - In the first paragraph the data in the last sentence has changed. Recent sightings of CFPOs have occurred near Papago Well on Cabeza Prieta National Wildlife Refuge.
53	pg. 56	continued	In the Off-road Operations paragraph at the top of the page, we are quite concerned that off-road operations by 4 wheel drive vehicles are not mentioned. Also we believe that the effects to habitat by vehicles are adverse and could disturb/harass birds on CPNWR or elsewhere during normal operations or rescues.
54	pg. 57	3.1.2.3	Lesser long-nosed Bat - the Service would like the Border Patrol to know that in the recent reinitiated formal consultation with the Marine Corps, the Service has formally consulted with the Marines as a result of their low-level helicopter flights. We recommend similar consultation on Border Patrol flights.
55	pg. 58	continued	Again the off-road operations section does not mention ORVs used in pursuits or rescues. ORVs will disturb habitat including smashing seedlings, nurse plants, and young saguaros.
56	pg.68	figure 3-3a	Tucson Station Area - In figure 3.3a, a least Service three biologists have encountered border patrol units on the (b) (7)(E) We do have numerous reports from ranchers in this area of considerable Border Patrol activity, including off-road, 4 WD activity. Additionally there is a (b) (7)(E) on this road that we are told is used as an (b) (7)(E) or border patrol but there is no information on how personnel are taken to the site.
57	pg.69	figure 3-3b	Remove the CFPO critical habitat from this map, also the peregrine falcon eyries as the species is no longer listed. These should also be changed on the other station maps.
58	pg. 70	3.3.2.1	American Peregrine Falcon - we would recommend deleting all discussion of peregrine falcons since they have been delisted.
59	pg.71	3.3.2.2	Cactus Ferruginous Pygmy-owl - The information in this section is very outdated, there are many more locations and critical habitat has been remanded.
60	pg.75	3.3.2.4	Other Listed Species - this section is an inadequate analysis. There are additional species such as the endangered Kearney's Blue Star (*Amsonia kearneyana*) and the Chiricahua leopard frog, a proposed species, in the Tucson Station AO.
61	pg.75	3.3.3	Conclusions - The Service does not agree with the MANLAA determination on the CFPO concerning the Tucson Station AO activities in the first paragraph. We would suggest that the B.P. not request initiation of consultation station by station. If an adverse effect occurs in one station the entire Sector should initiate for that species.
63	pg.76	3.3.3	At the top of the page, delete the peregrine falcon section. In the last paragraph at the bottom of the page, the Service does not agree with the lack of analysis on the masked bobwhite quail. The B.P. needs to do an analysis.
64	pg.77	table 3-3	The lesser long-nosed bat does occur in the Tucson Station's AO.
65	pg. 78	3.4.1	Nogales Station Activities - At the bottom of the page, there is a list of planned actions but the Service is unsure of where they are being located, if they are part of the proposed action and thus to be included in this consultation. The firing range is not shown on the map and there is no analysis of effects for these features.
66	pg.80	figure 3-4b	On the protected species general location map for Nogales Station AO, peregrine falcon needs to be removed. gila topminnow needs to be shown in the (b) (7)(E) the lesser long-nosed bat foraging area around roosts is 40 miles and needs to be changed on the maps, as do additional roost locations. Chiricahua leopard frog locations need to be added.
67	pg. 85	3.4.2.4	Lesser long-nosed bat - foraging bats from roosts not shown on figure 3-4b cover almost the entire area.
68	pg. 96	figure 3-5b	On the protected species general location map for Sonoita Station AO, the Sonora tiger salamander, Chiricahua leopard frog, and the southwestern willow flycatcher (a (b) (7)(E) are all missing. Concerning the lesser long-nosed bat there are a couple of small roosts and one new large summer roost that need to be on the map as do the 40 mile foraging circles. The new summer roost is in the Mustang Mountains at T20S R18E Sec.13 on private land. There is also a second large roost in the north end of the (b) (7)(E)
69	pg. 97	3.5.2.1	Mexican spotted owl - In the fourth paragraph, under off-road operations, we would note again that the information on the use of four wheel drive vehicles by border patrol agents is not adequate. Our staff for example has received reports from the (b) (7)(E) staff that Border Patrol is creating four wheel drive roads on the ranch.

70	pg. 100	3.5.2.3	Lesser long-nosed bat - Additional roosts are found in the (b) (7)(E)
71	pg.100	continued	At the bottom of the page, change the (b) (7)(E)
72	pg. 102	continued	Under air operations, there should be some mention of night operations, either those done directly by the B.P. or in conjunction with the Army National Guard, U.S. Customs, or Drug Enforcement Administration. Also there is no mention of the flight level of the operations which is the determining factor in analyzing the effects of helicopter flights.
73	pg. 103	3.5.2.4	Huachuca Water Umbel - again, off-road operations should mention the use of 4 wheel drive vehicles. If off-road or horse patrol activities occur in or near the habitat of this plant, the species will be adversely affected.
74	pg. 106	3.5.3	Conclusions - In the first paragraph, the statement is made that encounters with MSOs are likely but then a MANLAA call is made. Some basis for this call needs to be made as to why the effects are insignificant or discountable.
75	pg. 112	figure 3-6b	In this map the Sonora tiger salamander and the Chiricahua leopard frog are missing.
76	pg. 117	3.6.2.3	Again we question why four wheel drive vehicles have been left out of the off-road operations discussion. The habitat foraging area for lesser long-nosed bats extends out for 40 miles not just near the roost.
77	pg. 119	3.6.2.4	Indirect effects are not being considered in this section. Border Patrol actions have forced more and more UDAs into the (b) (7)(E) which has resulted in more and more habitat damage.
78	pg. 124	figure 3-7b	Add LLNB foraging areas, mountain plover, Chiricahua leopard frog, and the listed fish in Turkey and Leslie Creeks to the Douglas Station AO map.
79	pg. 124	continued	Add the Chiricahua leopard frog and the listed fish to the determination matrix for the Douglas Station.
80	pg. 126	table 3-7	This table needs to include the listed fish mentioned in the comments and the Chiricahua leopard frog. Also lesser long-nosed bat foraging habitat is in the AO.
81	pg. 130	figure 3-8b	This map does not show the listed fish in the area, the Chiricahua leopard frog, or the lesser long-nosed bat roosts and their associated habitat.
82	pg. 129	table 3-8	The lesser long-nosed bat foraging areas need to be included in this table.

Literature Cited:

Kiff, L.F., D.B. Peakall, and D.P. Hector. 1978. Egg shell thinning and organochlorine pesticide residue in the bat and Aplomado falcon in Mexico. Proceedings of the 17th International Ornithological Congress, pp. 949-952

Krausman, P.R. et.al. 2001. Long-term study of the noise effects of military overflights on the Sonoran pronghorn, Barry M. Goldwater Range, Luke Air Force Base, Arizona. U.S. Air Force Contract F41624-98-C-8020-P00003.

United States Department of the Interior
U.S. Fish and Wildlife Service
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Phoenix, Arizona 85021-4951
(602)640-2720 FAX (602)640-2730

In Reply Refer To:
AESO/SE
2-21-99-I-138

June 24, 1999

[redacted] Diefenbeck, Director
Headquarters Facilities and Engineering Division
U.S. Department of Justice
Immigration and Naturalization Service
425 I Street NW
Washington, D.C. 20536

RECEIVED
FACILITIES & ENGINEERING
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Attention: [redacted]

Dear [redacted]

This letter is in response to your request for a Fish and Wildlife Service review of the May 27, 1999, working draft of the biological assessment (BA) of the field activities of the nine U.S. Border Patrol (USBP) stations within the Tucson Sector, Arizona, pursuant to ongoing informal consultation under the Endangered Species Act, as amended, with the Immigration and Naturalization Service (INS).

On June 10, 1999, personnel of this office met with three representatives of consulting firms to continue informal discussions on the Tucson consultation and review the working draft of the BA. The Service is requesting that, as was done in the Yuma consultation, the INS select a primary contact from among the contractors and the Army Corps of Engineers. A local Border Patrol employee should be similarly designated so that we have a local contact as we did with the Yuma Border Patrol. We believe that this will facilitate future exchanges of documents and communications.

The second item that the Service was concerned about was the focus of the BA on only four species: Sonoran pronghorn (*Antilocapra americana sonoriensis*), American peregrine falcon (*Falco peregrinus anatum*), Mexican spotted owl (*Strix occidentalis lucida*), and Cochise pincushion cactus (*Coryphantha robbinsorum*). In our letter of March 4, 1999, to the Corps, concerning the species list, we cautioned that limiting the focus to only the four species was a problem, and in our meeting with the contractors, we mentioned that the cactus ferruginous pygmy-owl and its proposed critical habitat, lesser long-nosed bat, Huachuca water umbel and its proposed critical habitat, Gila topminnow, and Pima pineapple cactus should be addressed. The BA should address effects to these and perhaps other listed species and proposed or designated critical habitat.

During the June 10th meeting, the Service supplied to the contractors a copy of the Coronado National Forest Grazing BA, a copy of the Biological Opinion for the Safford Grazing consultation, additional copies of the 1998 Service consultation handbook, and a copy of the Saguaro National Park BA as an example of a completed BA. We then discussed sections of the working draft of the Tucson Border Patrol BA and agreed to review the document further.

BA Working Copy Review

-The Service is pleased that the INS consultants have pushed ahead and prepared a draft working BA for the first meeting with the Service in Phoenix on the informal consultation of the Tucson Border Patrol activities. It was agreed in the June 10th meeting that the working draft BA needs considerable revision. The document needs clarification on effects determinations, a better description of the proposed actions (what, when, where, for how long?), a better species occurrence and effects analysis. Also, several other species should be evaluated, including but not limited to: the cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), Pima pineapple cactus (*Coryphantha scheeri robustispina*), Huachuca water umbel (Lilaeopsis schaffneriana recurva), Gila topminnow (*Poeciliopsis occidentalis occidentalis*), masked bobwhite (*Colinus virginianus ridgewayi*), Sonoran chub (*Gila ditaenia*), Yaqui fishes (*Ictalurus pricei, Gila purpurea, Poeciliopsis occidentalis sonoriensis*), New Mexico ridge-nosed rattlesnake (*Crotalus willardi obscurus*), lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*), Nichol's Turk's head cactus (*Echinocactus horizonthalonius nicholii*), etc.

-Page i, The legal authorities for the Border Patrol to operate and conduct its mission need to be stated in the body of the BA. Under "Operations" please state any interagency actions in which the BP in Tucson is involved. Also in section 3 of the outline, most of these are environmental assessment (EA) headings and are not necessary.

-Page iii, Under Agency Coordination Letters, please clarify if the BP has any memoranda of agreement or memoranda of understanding with the National Park Service or National Wildlife Refuges (Cabeza Prieta, Buenos Aires, San Bernardino), including drafts or plans to develop such agreements.

-Page 1, In the first sentence remove "1978" and replace with "as amended." There have been seven amendments to the Endangered Species Act (Act) and 1978 is only one. Rewrite the first sentence to read... "The Endangered Species Act of 1973, as amended, requires that any action authorized, funded, or carried out by a Federal Agency is not likely to jeopardize the continued existence of any endangered or threatened species, or result in the destruction or adverse modification of critical habitat". Add the Act further states ..."agencies shall seek to conserve endangered and threatened species and shall utilize their authorities in the furtherance of the purposes of the Act." In the third sentence, delete the words "the magnitude of."

-Page 4, In the first paragraph the species list (Appendix A) is mentioned. The county species list sent to the Corps on March 4, 1999, and forwarded to the consultants is effective for 90 days.

Prior to submitting a request for formal consultation, the consultant should verify the status of the species and request another species list if needed. For example, the information on the mountain plover mentioned in Appendix A needs to be corrected to show that it is now a proposed species.

-Page 5, In the last sentence of the third paragraph we note the use of motorbikes and all-terrain vehicles is mentioned. Please elaborate on how and where this equipment is used. They were not mentioned in the Yuma BA and may present additional impacts to species.

-Page 6, In the last sentence of the first paragraph the authors mention USBP activities that are sometimes required. Please expand this discussion to show how much is actually being done; the percent of time off-road, type of vehicles, etc. While a law enforcement agency has to remain flexible in their future actions, a study of their past activity areas will at least give an indication of their impacts. In the third paragraph, the document mentions USBP traffic and total volume. We request elaboration of where and which roads are being used. For example, on the U.S. Forest Service lands, does this include the illegal (social) roads.

-Page 7, In the second paragraph, please clarify USBP helicopter usage. Flights over the Cabeza Prieta NWR and the Tohono O'odham Nation a(b) (7)(E) used by Luke AF jets over those two areas and may violate regulations governing overflights of wilderness. Also, please elaborate on where and to what degree helicopters fly at night.

-Page 9, In the first paragraph the document states that "... preliminary discussions with the USFWS, it was determined that this BA would focus primarily on four protected species...". As we have discussed, this is in error. The BA needs to be expanded to evaluate effects to a number of other species and critical habitats.

-Page 16, In the first paragraph at the top of the page there is an error on critical habitat for Mexican spotted owls (MSO). Critical habitat was revoked in March 25, 1998 (50 CFR 14378). The second paragraph under "Current Status," needs considerable revision because it refers to the "East" Recovery Unit. The project is in the West Recovery Unit. Also 5 of the 11 recovery units are in Mexico. Please provide a location map showing the MSO/protected activity centers (PACs) in the project area.

-Page 19, At the top of the page there is only a discussion about a general location map for peregrine falcons. Please expand on the status of the species in your project area. There are several territories in the project area as well as nests. The BA should include analysis of potential impacts to nesting peregrines. In the second paragraph under "Threats" site-specific discussions of potential impacts to peregrines during breeding and egg-laying. At the bottom of the page the document mentions the USFWS species lists again. We suggest including copies of the county species lists sent to the contractors as an appendix.

-Page 25, On this page and a number of the following pages are sections that are more appropriate for NEPA documents, not ESA documents. They are not necessary for a BA.

-Page 28, Service personnel have occasionally observed USBP helicopters that appeared to be (b) (7)(E) Please provide a discussion on why or when that level may be decreased.

-Figure 4-1, Please consider following revisions: 1) the legend for the maps for the various stations should be changed to reflect the different resources present and not kept the same on each map. 2)The sensor grid was not displayed on the maps for the previous consultation with the Border Patrol in the Yuma BA. Locations should be described in relation to roads and discussed in more detail at the meetings. 3) Sonoran pronghorn distribution outside the station boundary should be shown, as personnel from the Ajo Station interact with the Wellton Station. 4)Additional listed species range should be added to this map. Habitat and location of cactus ferruginous pygmy-owls and lesser long-nosed bats need to be clearly displayed. 5)Areas of off-road activity, possibly by levels of activity, should be displayed.

-Page 46, In the second paragraph on this page, please clarify the discussion on the sensors. Are all the (b) (7)(E) sensors all maintained (b) (7)(E) r are only a few checked and moved? For example, in the Yuma Sector, sensors are maintained (b) (7)(E) (b) (7)(E)

-Page 47, Please expand the discussion concerning roads, road construction, dragging, and use by patrol vehicles; it is inadequate and should be expanded as in the USBP Yuma BA. It should be recognized that the key Sonoran pronghorn habitats with the highest densities are in the eastern portion of the range, which are located in the Ajo Station area.

-Page 48, The discussion at the top of the page on off-road activities in Sonoran pronghorn habitat should be expanded. The BA should discuss magnitude, location, and types of impacts to Sonoran pronghorn and its habitat. Concerning the sensor locations, please explain why the effects are temporary and negligible. If the (b) (7)(E) significant disturbance of pronghorn could occur. Some analysis of the heavy use o (b) (7)(E) (b) (7)(E) Arizona should be included. There is considerable high speed Border Patrol vehicle activity on this highway and there are recent pronghorn sightings in the area.

-Page 49, At the bottom of the first paragraph, we believe there may be a mis-quote from two employees from Luke AFB.

-Page 50, At the top of the page there should be a more detailed discussion detailing helicopter flight levels elevations, how ground vehicles interact with helicopters, whether foot tracking occurs, whether officers are moved by helicopters, and the number of Search and Rescue (SAR) actions. In the last section on helicopter operations, please describe any interactions with U.S. Customs and the National Park Service law enforcement personnel. In the next section on

peregrine falcons, the analysis needs to make a statement about their presence or absence in the area.

-Figure 4-2, This map or another map should show additional resources for lesser long-nosed bats, cactus ferruginous pygmy-owls, and other listed species that may occur in your project area.

-Page 53, Please include the number of flight hours by helicopters and flight elevation which are needed for the analysis with the Casa Grande Station area. A table showing flight hours for the sector and arrests as was done in the Yuma consultation would be helpful for the analysis of potential impacts analysis.

-Figure 4-3, Our comments on this map are similar to the others above. Also, it shows no (b) (7)(E) but personnel from this office have been stopped by border patrol agents in that area.

-Page 56, The paragraph at the top of the page mentions drag roads in the Tucson station area. These roads should be shown on Figure 4-3. These roads should be named, possibly in a separate table. Again, the helicopter flight activities need to be detailed better. How many hours are flown and to where, how many ground vehicles do they potentially interact with--ten or a hundred? The Mexican spotted owl (MSO) section should be expanded. The activities need to be overlaid with the PACs and restricted habitats.

-Page 57, In regard to activities of the Nogales Station, effects to additional species need to be described, including: Pima pineapple cactus, cactus ferruginous pygmy-owl and its proposed critical habitat, Huachuca water umbel and its proposed critical habitat, lesser long-nosed bat, Gila top minnow, and perhaps others.

-Page 58, Nogales Station activities should be described in more detail. Location and habitats crossed by 75 miles of unimproved roads should be described. There also needs to be more detail about proposed projects and their effects.

-Figure 4-4, This map should show all peregrine falcons eyries in the area. The MSO locations should be updated and the map should show PAC locations. Cochise pincushion cactus is shown on the map, but we do not believe they occur here.

-Page 61, At the top of the page, Peregrine falcons forage over broad areas outside of canyons and not all cliff nest sites are in canyons. Specific nesting sites should be analyzed for potential impacts. Also personnel from this office have observed Border Patrol helicopters flying (b) (7)(E) (b) (7)(E) Please describe under what conditions or situations this would occur.

The Service comments for the remaining Border Patrol Stations described in the BA are similar to the above comments and will not be repeated here. Additionally, a complete description of

Conservation Measures/Mitigation on page 74 will be very important to our evaluation of potential impacts of Border Patrol activities in the Tucson Sector.

Please note that in response to Secretarial Order # 3206, the American Indian Tribal Rights, Federal Tribal Trust Responsibilities, and the Endangered Species Act, dated June 5, 1997, the Service provides with this letter timely notification to the Tohono O'odham Nation of an upcoming formal consultation with a proposed Federal agency action that may affect tribal rights or tribal trust resources. And furthermore, once the Border Patrol enters into formal consultation on this proposed action that may affect tribal resources, the Service shall notify the affected tribe (Tohono O'odham Nation) and the BIA and encourage you, the action agency, to invite their participation in the consultation.

The Service appreciates the opportunity to review this working draft and looks forward to working with the Border Patrol and its consultants on the Tucson Sector consultation. In all future correspondence on this project, please refer to the consultation number 2-21-99-I-138. If you have any questions or concerns about this consultation process, please contact (b) (6)
(b) (6)

Sincerely,

(b) (6)

Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (GARD-AZ/NM, PARD-ES)
(b)(6)(b)(7)(C) Sector AT, USBP, Tucson, AZ
Tribal Chairman, Tohono O'odham Nation, Sells, AZ
Director, Bureau of Indian Affairs, Phoenix, AZ

DraftBAcomments:(b) (6)

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In Reply Refer To:
AESO/SE
2-21-99-I-138

June 23, 1999

(b) (6)
Gulf South Research Corporation
P.O. Box 83564
Baton Rouge, Louisiana 70884-3564

Attention (b) (6)

Dear (b) (6)

Enclosed are two documents requested by (b) (6) f your office. The first is an Air Force contract report on a low level aircraft noise study done by the Daltons in March of 1993. The second is a copy of the "Red Book" species for southeast Arizona that were discussed in our June 10, 1999, meeting on the Tucson Border Patrol consultation. The third item requested was the environmental coordinator's address for the Tohono O'odham Nation and that was e-mailed directly to (b) (6)

If you have any questions concerning this consultation, please contact (b) (6) (b) (6)

Sincerely,

(b) (6)

Field Supervisor

Enclosures: 2

Consult990622: (b) (6)

Attachment A

Federally Listed, Proposed, and Candidate Species Potentially Occurring Within Cochise, Pima, Pinal, and Santa Cruz Counties

Common/Scientific Name	Status	Date Listed	Counties	Habitat
PLANTS				
√Acuna cactus (*) *Echinomastus erectocentrus acunensis*	C	NA	Pima, Pinal	Well drained knolls and gravel ridges in Sonoran desertscrub
√Arizona hedgehog cactus *Echinocereus triglochidiatus arizonicus*	E	10/15/79	Pinal	Ecotone between interior chaparral and madrean evergreen woodland
√Blumer's dock (Chiricahua) *Rumex orthoneurus*	P	NA	Cochise	Mid to high elevation springs, streams, and wetlands with moist organic soils or shaded canyons
√Canelo Hills ladies tresses *Spiranthes delitescens*	E	1/6/97	Cochise, Santa Cruz	Finely grained, highly organic, saturated soils of cienegas
Cochise pincushion cactus(*) *Coryphantha robbinsorum*	T	1/9/86	Cochise	Semidesert grassland with small shrubs, agave, other cacti, and grama grass
√Huachuca water umbel (*) *Lilaeopsis schaffneriana ssp. recurva*	E	1/6/97	Cochise, Pima, Santa Cruz	Cienegas, perennial low gradient streams, and wetlands
√Kearney's blue star *Amsonia kearneyana*	E	1/19/89	Pima	West-facing drainages in the Baboquivari Mountains
√Lemmon fleabane *Erigeron lemmonii*	C	NA	Cochise	Crevices, ledges, and boulders in canyon bottoms in pine-oak woodlands
√Nichol's turk's head cactus (*) *Echinocactus horizonthalonius var. nicholii*	E	10/26/79	Pima, Pinal	Sonoran desertscrub
√Pima pineapple cactus (*) *Coryphantha scheeri robustispina*	E	4/20/92	Pima, Santa Cruz	Sonoran desertscrub or semi-desert grassland communities
BIRDS				
American peregrine falcon *Falco peregrinus anatum*	E	10/13/70	Cochise, Pima, Pinal, Santa Cruz	Cliffs and steep terrain usually near water or woodlands with abundant prey
√Bald Eagle *Haliaeetus leucocephalus*	T	7/12/95	Cochise, Pima, Pinal, Santa Cruz	Large trees or cliffs near water with abundant prey
√Cactus ferruginous pygmy-owl (*) *Glaucidium brasilianum cactorum*	E	3/10/97	Cochise, Pima, Pinal, Santa Cruz	Mature cottonwood/willow, mesquite bosques, and Sonoran desertscrub

Attachment A

Federally Listed, Proposed, and Candidate Species Potentially Occurring Within Cochise, Pima, Pinal, and Santa Cruz Counties

Common/Scientific Name	Status	Date Listed	Counties	Habitat
BIRDS (Cont'd)				
Masked bobwhite (*) *Colinus virginianus ridgewayi*	E	3/11/67	Pima	Desert grasslands with diversity of dense native grasses, forbs and brush
Mexican spotted owl (*) *Strix occidentalis lucida*	T	3/15/93	Cochise, Pima, Pinal, Santa Cruz	Nests in canyons and dense forests with multi-layered foliage structure
Mountain plover *Charadrius montanus*	C	NA	Cochise, Pima, Pinal, Santa Cruz	Open arid plains, short-grass prairies with scattered cactus
Northern aplomado falcon *Falco femoralis septentrionalis*	E	1/25/86	Cochise, Santa Cruz	Grassland and Savannah
√Southwestern willow flycatcher (*) *Empidonax traillii extimus*	E	2/27/95	Cochise, Pima, Pinal, Santa Cruz	Cottonwood/willow and tamarisk vegetation communities along rivers and streams
Whooping crane *Grus americana*	E	3/11/67	Cochise	Marshes, prairies, and river bottoms
√Yuma clapper rail *Rallus longirostris yumanensis*	E	3/11/67	Pinal	Fresh water and brackish marshes
FISHES				
√Beautiful shiner *Cyprinella formosa*	T	8/31/84	Cochise	Small to medium sized streams and ponds with sand, gravel, and rock bottoms
√Desert pupfish *Cyprinodon macularius*	E	3/31/86	Pima, Pinal, Santa Cruz	Shallow springs, small streams, and marshes; tolerates saline and warm water
√Gila chub *Gila intermedia*	C	NA	Cochise, Pima, Santa Cruz	Pools, springs, cienegas, and streams
√Gila topminnow *Poeciliopsis occidentalis occidentalis*	E	3/11/67	Pima, Pinal, Santa Cruz	Small streams, springs, and cienegas vegetated shallows
√Loach minnow *Tiaroga cobitis*	T	10/28/86	Pinal	Benthic species of small to large perennial streams with swift shallow water over cobble and gravel
√Razorback sucker *Xyrauchen texanus*	E	5/22/90	Pinal	Riverine and lacustrine areas, generally not in fast moving water and may use backwater

Attachment A

Federally Listed, Proposed, and Candidate Species Potentially Occurring Within Cochise, Pima, Pinal, and Santa Cruz Counties

Common/Scientific Name	Status	Date Listed	Counties	Habitat
FISHES (Cont'd)				
√Sonora chub *Gila ditaenia*	T	4/30/86	Santa Cruz	Perennial and intermittent small to moderate streams with boulders and cliffs
√Spikedace *Meda fulgida*	T	7/1/86	Pinal	Moderate to large perennial streams with gravel cobble substrates and moderate to swift velocities
Yaqui catfish *Ictalurus pricei*	T	8/31/84	Cochise	Moderate to large streams with slow current over sand and rock bottoms
√Yaqui chub *Gila purpurea*	E	8/31/84	Cochise	Deep pools of small streams, pools, or ponds near undercut banks
√Yaqui topminnow *Poeciliopsis occidentalis sonoriensis*	E	3/11/67	Cochise	Small to moderate sized streams, springs, and cienegas generally in shallows
REPTILES				
New Mexican ridge-nosed rattlesnake *Crotalus willardi obscurus*	T	4/4/78	Cochise	Presumably canyon bottoms in pine-oak and pin-fir communities with alder, maple, oak, and box elder
√Sonoyta mud turtle *Kinosternon sonoriense longifemorale*	C	NA	Pima	Ponds and streams
AMPHIBIANS				
√Chiricahua leopard frog *Rana chiricahuensis*	C	NA	Cochise, Pima, Santa Cruz	Streams, rivers, backwaters, ponds, and stock tanks that are free from introduced fish and bullfrogs
√Sonora tiger salamander *Ambystoma tigrinum stebbinsi*	E	1/6/97	Cochise, Santa Cruz	Stock tanks and impounded cienegas in San Rafael Valley, Huachuca Mountains
MAMMALS				
Jaguar *Panthera onca*	E	7/22/97	Cochise, Pima	Variety of habitats from Sonoran desertscrub to conifer forests
Jaguarundi *Felis yagouaroundi tolteca*	E	6/14/76	Cochise, Pima, Santa Cruz	Variety of habitats

Attachment A

Federally Listed, Proposed, and Candidate Species Potentially Occurring Within Cochise, Pima, Pinal, and Santa Cruz Counties

Common/Scientific Name	Status	Date Listed	Counties	Habitat
MAMMALS (Cont'd)				
Lesser long-nosed bat *Leptonycteris curasoae yerbabuenae*	E	9/30/88	Cochise, Pima, Pinal, Santa Cruz	Desertscrub habitat with agave and columnar cacti present as food plants
Mexican gray wolf *Canis lupus baileyi*	E	3/11/67	Cochise, Pima, Santa Cruz	Chaparral, woodland, and forested areas; may cross desert areas
Ocelot *Felis pardalis*	E	7/21/82	Cochise, Pima, Santa Cruz	Humid tropical and sub-tropical forests, savannahs, and semi-arid thornscrub
Sonoran pronghorn (*) *Antilocapra americana sonoriensis*	E	3/11/67	Pima	Broad, intermountain alluvial valleys with creosote-bursage and palo verde-mixed cacti associates
INVERTEBRATES				
Huachuca springsnail *Pyrgulopsis thompsoni*	C	NA	Cochise, Santa Cruz	Aquatic areas, small springs with vegetation slow to moderate flow

Legend: E = Endangered
T = Threatened
P = Proposed Endangered or Threatened
C = Candidate
NA = Not Applicable

Source: U.S. Fish and Wildlife Service 1999.

THE STATE OF ARIZONA

GAME & FISH DEPARTMENT

2221 West Greenway Road, Phoenix, Arizona 85023-4399 (602) 942-3000
www.gf.state.az.us

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Director
Duane L. Shroufe

Deputy Director
Steve K. Ferrell

June 8, 1999

(b) (6)
Gulf South Research Corporation
PO Box 83564
Baton Rouge, LA 70884-3564

Re: Information on Special Status Species near the Arizona/Mexico Border

Dear (b) (6)

Per your written request of May 5, 1999, which was forwarded to me by (b) (6) please find enclosed, information on 33 additional special status species near the Arizona/Mexico border. As you requested in April, the four counties of interest are Pima, Pinal, Cochise and Santa Cruz. We have included two species which you did not request , but we feel are important. They are *Allium goodingii* and *Cyprinodon macularius eremus*. Both species have federal status and occur near the border. There is no information on the following: *Grus americana*, *Felis onca*, *Felis yagouaroundi tolteca*, *Canis lupis baileyi*, and *Felis pardalis*.

Provided are biological abstracts along with statewide and more localized (the four counties of interest) maps for each of the 33 species. I have also included several reports for these species, indexed by various database fields (the same type reports that (b) (6) sent in April).

If I can be of further assistance, please do not hesitate to phone me at (b) (6)

(b) (6)
Heritage Data Management System, Data Specialist

(b) (6)

Enclosures

GULF SOUTH RESEARCH CORPORATION
Post Office Box 83564 Baton Rouge, Louisiana 70884-3564 Telephone (225) 757-8088

5 May 1999

(b) (6)
Heritage Data Management System Coordinator
Arizona Game and Fish Department

RE: U.S. Immigration and Naturalization Service Biological Assessment

Dear (b) (6)

I received the information you sent on the Sonoran Pronghorn, Cochise pincushion cactus, American peregrine falcon, and Mexican spotted owl this week. Thank you for sending the information so quickly. As you know we have been in contact with the U.S. Fish and Wildlife Service to determine which protected species we need to address in our Biological Assessment. Although the four species above were indicated as ones to concentrate on, we would also like to get information on the other listed species within the four county project area.

We would like to request preliminary distribution maps of the listed species (Attachment A) within Cochise, Pima, Pinal, and Santa Cruz Counties. The maps you provided were very helpful, but they are almost to specific for our needs. Maps of potential areas where these species could likely occur would be very useful for our purposes. Any general information (i.e., Biological Abstracts) you may have on these species would be greatly appreciated.

We look forward to continue working with you on this project. Please don't hesitate to contact me if you have any questions or require additional information.

Sincerely,

(b) (6)

ref: 80511104

THE STATE OF ARIZONA

GAME & FISH DEPARTMENT

2221 West Greenway Road, Phoenix, Arizona 85023-4399 (602) 942-3000
www.gf.state.az.us

April 27, 1999

(b) (6)
Gulf South Research Corporation
PO Box 83564
Baton Rouge, LA 70884-3564

Re: Information on 4 Special Status Species near the Arizona/Mexico Border

Dear (b) (6)

Per your written request of April 22, 1999, enclosed is information about four special status species near the Arizona/Mexico Border. The four species are the Sonoran pronghorn (*Antilocapra americana sonoriensis*), Cochise pincushion cactus (*Coryphantha robbinsorum*), American peregrine falcon (*Falco peregrinus anatum*), and Mexican spotted owl (*Strix occidentalis lucida*). The four counties of interest are Cochise, Pima, Pinal, and Santa Cruz. I also provided information from Yuma County, due to the fact that it also borders with Mexico. It is my understanding that the information is to prepare a Biological Assessment addressing U.S. Border Patrol activities along the U.S./Mexico border in Southeast Arizona.

Provided are statewide and more localized (the four counties of interest) maps for each of the four species. I have also included several reports for the four species, indexed by various database fields. These reports are indexed by township and range, quadrangle name, and species name. Only general locations are provided at this time. At a time when more specific information is required, please call me and we will work out a level of information that is necessary to meet your needs. Also provided is a list of special status species by county. The definitions will assist with status codes.

Biological abstracts from the Heritage Data Management System (HDMS) are provided for more general background information.

The HDMS may be able to assist you with literature mentioned in the abstracts.

I am also providing the same information to (b) (6) with the U.S. Fish and Wildlife Service, for your upcoming meeting. Please let me know if I can be of further assistance. I would also appreciate it if you would take the time to complete the customer service survey attached. We are trying to establish a trend survey to ensure that customer satisfaction.

Sincerely,

(b) (6)

Heritage Data Management System, Coordinator

(b) (6)

Enclosure

cc: (b) (6) Ecological Services Office, USFWS, Phoenix
Project Evaluation Program Supervisor, AGFD

GSRC GULF SOUTH RESEARCH CORPORATION
Post Office Box 83564 Baton Rouge, Louisiana 70884-3564 Telephone (225) 757-8088

22 April 1999

(b) (6)
Heritage Data Management System Coordinator
Arizona Game and Fish Department

(b) (6)

As I mentioned on the phone, the Immigration and Naturalization Service (INS) intends to prepare a Biological Assessment (BA) addressing U.S. Border Patrol (USBP) activities along the U.S.-Mexico Border in Southeast Arizona. Operational activities of the USBP occur in Cochise, Pima, Pinal, and Santa Cruz Counties of Arizona. Preliminary discussions with U.S. Fish and Wildlife (USFWS) personnel indicate that the BA should focus on four species within the area: Sonoran Pronghorn (*Antilocapra americana sonoriensis*), Cochise pincushion cactus (*Coryphantha robbinsorum*), American peregrine falcon (*Falco peregrinus anatum*), and Mexican spotted owl (*Strix occidentalis lucida*).

We are currently in the process of gathering the most current information available regarding protected species within the counties of Cochise, Pima, Pinal, and Santa Cruz. As we discussed this afternoon, we would like your office to provide a preliminary distribution map of the four species within the four county project study area (The INS BA is still in the preliminary stages and detailed species locations are not required).. Additionally, any general information you may have about the four species would be greatly appreciated. I realize that you normally require 30 days to process this type of information, but if possible we would like to have this information available for an upcoming meeting with the USFWS. The meeting will probably occur the week of May 10, 1999. If possible, we would like to receive your information by May 5, 1999 in order to allow our GIS department time to digitize the map information before the meeting.

We look forward to working with you on this project. Please don't hesitate to contact me if you have any questions or require additional information.

Sincerely,

(b) (6)

ref: 80511104

United States Department of the Interior
U.S. Fish and Wildlife Service
2321 W. Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
(602)640-2720 FAX (602)640-2730

In Reply Refer To:
AESO/SE
POOCOC

March 11, 1999

Dear Interested Party:

Enclosed for your review and comment is the draft revised Gila topminnow (*Poeciliopsis o. occidentalis*) recovery plan. A notice of availability for public review of the plan was published in the Federal Register on March 5, 1999 (Federal Register 64(43):10716-10717). This endangered species now occurs in the Gila River basin of Arizona and Mexico. Only the U.S. portion of the range is protected under the Endangered Species Act. Historical records exist for the Gila River basin in New Mexico. The Service is soliciting comments from the public on this draft revised recovery plan by April 19, 1999.

In 1967, the Gila (Sonoran) topminnow was listed as endangered within the United States under the Endangered Species Protection Act of 1966. Following passage of the Endangered Species Act of 1969, the Gila (Sonoran) topminnow was included on Appendix D, the list of species endangered within the United States.

Persons wishing to review the recovery plan may obtain a copy by contacting the U.S. Fish and Wildlife Service, Arizona Ecological Services Field Office, 2321 West Royal Palm Road, Suite 103, Phoenix, Arizona 85021, (602-640-2720; Fax 602-640-2730), or the person named below. The draft plan is available electronically at **Http://ifw2es.fws.gov/Library/ListDocs.cfm**. Written data or comments concerning the recovery plan should be submitted to the Field Supervisor, Ecological Services Field Office, Phoenix, Arizona (see address above). Comments and materials are available on request for public inspection, by appointment, during normal business hours at the above address.

Restoring threatened and endangered animals or plants where they are again secure, self-sustaining members of their ecosystem is a primary goal of the Service's endangered species program. The purpose of a recovery plan is to guide the recovery of a listed species. The plans describe actions considered necessary for conservation of the species, establish criteria for the recovery levels for downlisting or delisting them, and estimate the time and cost for implementing the recovery actions needed.

The Endangered Species Act requires development of recovery plans for listed species unless such a plan would not promote the conservation of that species. The Act also requires that public notice and an opportunity for public review be provided during recovery plan development. The Service will consider all information presented during a public comment period before approval of each new or revised recovery plan. The Service and other Federal agencies will also consider these comments while implementing approved recovery plans.

The Sonoran topminnow (*Poeciliopsis occidentalis*), includes two subspecies, the Gila topminnow (*P. o. occidentalis*) and the Yaqui topminnow (*P. o. sonoriensis*). Recovery of the Yaqui topminnow is covered by the Yaqui Fishes Recovery Plan. The Gila topminnow is native to the Gila River Basin of the United States and Mexico, and the Rios de la Concepcion and Sonora of northern Mexico. It was considered one of the most common fishes in the southern part of the Colorado River basin before 1940. However, habitat loss and interaction with nonnative fishes, particularly western mosquitofish (*Gambusia affinis*) caused range-wide disappearances and decreases in abundance within the United States.

Gila topminnows were historically widespread in the Gila River drainage below about 4,000 feet elevation. The subspecies was found in the San Francisco River at Frisco Hot Springs, New Mexico, west to the mainstem Gila River near Yuma, Arizona, and possibly even into the lower Colorado River. The fish thrived in the Salt River as far upstream as the present site of Roosevelt Lake and was also common in Tonto Creek. Although there are no museum specimens from the Verde or San Simon rivers, Gila topminnows likely occurred there. Two collections are known from the San Pedro River. Numerous records of Gila topminnow are also known from the Santa Cruz River. Various tributary streams and springs, most notably Sonoita Creek, Cienega Creek, and Sabino Canyon, also historically supported Gila topminnows.

Habitat destruction and introduction of nonnative species have caused severe reductions of Gila topminnow populations, and are the main causes for its listing as an endangered species. Past and current threats to the Gila topminnow and its habitat include dams, water diversion, watershed deterioration, channelization, livestock overgrazing, and introduction of nonnative competitive and predatory aquatic species. The western mosquitofish is especially detrimental to Gila topminnow populations.

Since being federally listed in 1967, the Gila topminnow has been reestablished into more locations than any native fish in the Southwest. However, both naturally occurring and reestablished populations continue to decline. The recovery plan details the Gila topminnow recovery effort, acquaints the reader with the subspecies and its status, the threats it faces, and provides a revised plan for its survival and recovery in the United States.

The draft revised recovery plan has been extensively reviewed during the last five years by agency personnel, species experts, and the Desert Fishes Recovery Team. The plan will be published as final following incorporation of comments and material received during this comment period. The Service solicits comments on the draft revised recovery plan described. All comments received by April 19, 1999, will be considered before approval of the plans. If you have questions regarding the draft recovery plan, please call (b) (6)

(b) (6)

Sincerely,

(b) (6)

Field Supervisor

Enclosure

United States Department of the Interior
U.S. Fish and Wildlife Service
2321 W. Royal Palm Road, Suite 103
· Phoenix, Arizona 85021-4951
(602)640-2720 FAX (602)640-2730

In Reply Refer To:

AESO/SE
2-21-99-I-138

March 4, 1999

(b) (6)
Chief, Environmental Division
Department of the Army
Ft. Worth District, Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102-0300

Dear (b) (6)

This is in response to your letter of February 22, 1999, requesting confirmation on your list of threatened and endangered species, or those that are proposed for listing as such under the Endangered Species Act of 1973, as amended (Act), which may potentially occur in your project area of the U.S. Border Patrol (USBP), Tucson Sector (Pima, Pinal, Santa Cruz, and Cochise counties). We have reviewed your lists and have also enclosed our lists which are normally mailed out in response to the species request letters that we receive during informal consultation. The enclosed lists also include candidate species. In future communications regarding this project, please refer to consultation number 2-21-99-I-138.

The enclosed species lists include all those species potentially occurring anywhere in the counties where your project occurs. Please note that your project area may not necessarily include all or any of these species. The information provided includes general descriptions, habitat requirements, and other information for each species on the list. Also on the enclosed lists is the Code of Federal Regulations (CFR) citation for each listed species. Additional information can be found in the CFR and is available at most public libraries. This information should assist you in determining which species may or may not occur within your project area. Site-specific surveys could also be helpful and may be needed to verify the presence or absence of a species or its habitat as required for the evaluation of proposed project-related impacts.

Endangered and threatened species are protected by Federal law and must be considered prior to project development. If the action agency determines that listed species or critical habitat may be adversely affected by a federally funded, permitted, or authorized activity, the action agency must request formal consultation with the Service. If the action agency determines that the planned action may jeopardize a proposed species or destroy or adversely modify proposed critical habitat, the action agency must enter into a section 7 conference with the Service. Candidate species are those which are being considered for addition to the list of threatened or endangered species.

Candidate species are those for which there is sufficient information to support a proposal for listing. Although candidate species have no legal protection under the Act, we recommend that they be considered in the planning process in the event that they become listed or proposed for listing prior to project completion.

In reviewing your county species lists in attachment A, we note the following corrections and additions to the County species lists:

Cochise - add the Yaqui topminnow, cactus ferruginous pygmy-owl, mountain plover (proposed), and Blumers Dock (proposed)
- delete the Gila topminnow

Pima - add the mountain plover (proposed), remove the San Xavier talussnail, as it is covered in a conservation agreement

Pinal- add the mountain plover (proposed)

Santa Cruz - add the mountain plover (proposed)
-delete the jaguar

These corrections will bring your Attachment lists up to date with Service lists for the counties.

Concerning your comment on focusing on only four species, please carefully consider the revised list before limiting your analysis of the effects. Also, in the future, we offer this office as the primary contact for this consultation.

Your request for any past Biological Opinions on the listed species in the four counties is not one that we can readily complete at this time. We would suggest that you or your consultant contact us to clarify this request. Species that have been on the list for some time have many consultations. GIS data base sources in Arizona have already been discussed with (b) (6) of Gulf South Research Corporation. The Arizona Ecological Services Field Office does not have a GIS shop and so we depend on other agencies and contractors to supply us with coverage information. (b) (6) (b) (6) of the USGS in Denver (b) (6) has a U.S.- Mexico, Trans-Mexico 100 mile buffer data base in a CD ROM set. Your contractor's GIS person could check the USGS page on the Web. (b) (6) is the local USGS mapping contact person in Tucson. There is also a BRD Tucson contact, (b) (6) who has done a GAP vegetation coverage for the state. The BLM has a Mapping Sciences Office in the state office that has produced a variety of coverages including wildlife ones. (b) (6) of the National Park Service at Organ Pipe National Monument is on the GIS coordination committee for the BMGR. The Arizona Game and Fish Department manages the Heritage Data Management System data base. Luke Air Force Base Range Management Office is putting together a GIS data base for the Barry M. Goldwater Range (BMGR).

If any proposed action occurs in or near areas with trees and shrubs growing along watercourses, known as riparian habitat, the Service recommends the protection of these areas. Riparian areas are critical to biological community diversity and provide linear corridors important to migratory

are critical to biological community diversity and provide linear corridors important to migratory species.

The State of Arizona protects some plant and animal species not protected by Federal law. We recommend you contact the Arizona Game and Fish Department and the Arizona Department of Agriculture for State-listed or sensitive species in your project area.

The Service appreciates your efforts to identify and avoid impacts to listed and sensitive species in your project area. If we may be of further assistance, please feel free to contact (b) (6) or (b) (6) of this office.

Sincerely,

(b) (6)

Field Supervisor

Enclosures

cc: Director, Arizona Game and Fish Department, Phoenix, AZ
Refuge Manager, Cabeza Prieta NWR, Ajo, AZ

Specieslist.wpd;MPC:jh

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

February 22, 1999

Environmental Division

U.S. Fish and Wildlife Service
ATTN: (b) (6)
2321 W. Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951

Dear (b) (6)

The U.S. Army Corps of Engineers, Fort Worth District (USACE) is assisting the Immigration and Naturalization Service (INS) with preparation of a Biological Assessment (BA) to consider the impacts of U.S. Border Patrol (USBP), Tucson Sector, activities on Federally listed threatened or endangered species. We are currently in the process of gathering the most current information available regarding Federally listed species potentially occurring within the USBP Tucson Sector. Operational activities of the Tucson Sector are concentrated in Cochise, Pima, Pinal, and Santa Cruz counties of Arizona.

A current list of Federally threatened or endangered species that potentially occur in these counties is included as attachment A. Please review this list for accuracy and completeness. Preliminary discussions with U.S. Fish and Wildlife (USFWS) personnel indicate that the BA should focus on four species within the area: Sonoran Pronghorn (*Antilocapra americana sonoriensis*), Cochise pincushion cactus (*Coryphantha robbinsorum*), American peregrine falcon (*Falco peregrinus anatum*), and Mexican spotted owl (*Strix occidentalis lucida*). However, all Federally listed species potentially occurring in the four-county area will be discussed in the document.

Any information you may have regarding potential or known population locations, critical habitat, general habitat descriptions, distribution, and status of these species would be greatly appreciated. To better assess potential impacts to these species, we would like to present as much data in a GIS format as possible. Any GIS information, or information sources, you could provide regarding current distribution of the above mentioned species would also be appreciated. Additionally, copies of any past Biological Opinions prepared by the USFWS for these species would be very helpful.

We look forward to working with you on this project. If you have any questions, or require additional information, please contact (b) (6) Thank you for your prompt attention and cooperation.

Sincerely,

(b) (6)
Chief, Environmental Division

Attachment

Copy Furnished:

(b) (6)
Gulf South Research Corporation
7602 GSRI Avenue
Baton Rouge, LA 70820

(b) (6)
(b) (6)
1825 Market Center Blvd., Suite 510
Dallas, TX 75207

ATTACHMENT A

Federally Threatened and Endangered Species in Arizona by County

Cochise County:
American peregrine falcon
Bald eagle
Beautiful shiner
Canello Hills ladies' tresses
Cochise pincushion cactus
Gila topminnow
Huachuca water umbel
Jaguar
Jaguarundi
Lesser long-nosed bat
Mexican gray wolf
Mexican spotted owl
New Mexico ridge-nosed rattlesnake
Northern aplomado falcon
Ocelot
Sonora tiger salamander
Southwestern willow flycatcher
Whooping crane
Yaqui catfish
Yaqui chub

Pima County:
American peregrine falcon
Bald eagle
Cactus ferruginous pygmy owl
Desert pupfish
Gila topminnow
Huachuca water umbel
Jaguar
Jaguarundi
Kearney's blue star
Lesser long-nosed bat
Masked bobwhite
Mexican gray wolf
Mexican spotted owl
Nichols Turk's head cactus
Ocelot
Pima pineapple cactus
San Xavier talussnail
Sonoran pronghorn
Southwestern willow flycatcher

Pinal County:
American peregrine falcon
Arizona hedgehog cactus
Bald eagle
Cactus ferruginous pygmy owl
Desert pupfish
Gila topminnow
Lesser long-nosed bat
Loach minnow
Mexican spotted owl
Nichol's Turk's head cactus
Razorback sucker
Southwestern willow flycatcher
Spikedace
Yuma clapper rail

Santa Cruz County:
American peregrine falcon
Bald eagle
Cactus ferruginous pygmy owl
Canelo Hills ladies' tresses
Desert pupfish
Gila topminnow
Huachuca water umbel
Jaguar
Jaguarundi
Lesser long-nosed bat
Mexican gray wolf
Mexican spotted owl
Northern aplomado falcon
Ocelot
Pima pineapple cactus
Sonoran Chub
Sonora tiger salamander
Southwestern willow flycatcher

APPENDIX A

County Species Lists-Cochise County

Common Name	Scientific Name	Status	Description	County	Elevation Range	Habitat	Comments
1) Listed							**22**
Bald eagle	*Haliaeetus leucocephalus*	Threatened	Large, adults have white head and tail. Height 28-38"; wingspan 66-96". 1-4 yrs dark with varying degrees of mottled brown plumage. Feet bare of feathers.	Apache Cochise Coconino Gila Graham La Paz Maricopa Mohave Navajo Pima Pinal Santa Cruz Yavapai Yuma	Varies	Large trees or cliffs near water (reservoirs, rivers, and streams) with abundant prey.	Some birds are nesting residents while a larger number winters along rivers and reservoirs. An estimated 200 to 300 birds winter in Arizona. Once endangered (32 FR 4001, 03-11-1967; 43 FR 6233, 02-14-78) because of reproductive failures from pesticide poisoning and loss of habitat, this species was down listed to threatened on August 11, 1995. Illegal shooting, disturbance, and loss of habitat continues to be a problem. Species has been proposed for delisting (64 FR 36454) but still receives full protection under the ESA.
Beautiful shiner	*Cyprinella formosa*	Threatened	Small (2.5 inches) shiny minnow and very similar to red shiner. Males colorful during breeding (yellow-orange or orange on caudal and lower fins and bluish body).	Cochise	<4500 ft	Small to medium sized streams and ponds with sand, gravel, and rock bottoms.	Virtually extirpated in the United States, with the exception of a few isolated populations on National Wildlife Refuges and in Mexico. Same critical habitat as Yaqui Chub and Catfish (see 49 FR 34490, 08-31-84).
Cactus ferruginous pygmy-owl	*Glaucidium brasilianum cactorum*	Endangered	Small (Approx. 7"), diurnal owl reddish brown overall with cream-colored	Cochise Gila Graham Greenlee	<4000 ft	Mature cottonwood/willow, mesquite bosques, and Sonoran	Range limit in Arizona is from New River (North) to Gila Box (East) to Cabeza Prieta Mountains (West). Only a few

			belly streaked with reddish brown. Some individuals are grayish brown.	Maricopa Pima Pinal Santa Cruz Yuma		desertscrub	documented sites where this species persists are known, additional surveys are needed. Critical habitat was vacated by the U.S. District Court for the District fo Arizona (9/19/01) and remanded to the Service for further consideration.
California Brown pelican	*Pelecanus occidentalis californicus*	Endangered	Large dark gray-brown water bird with a pouch underneath long bill and webbed feet. Adults have a white head and neck, brownish black breast, and silver gray upper parts.	Apache Cochise Coconino Gila Graham Greenlee La Paz Maricopa Mohave Navajo Pima Pinal Santa Cruz Yavapai Yuma	Varies	Coastal land and islands; species found around many Arizona lakes and rivers	Subspecies is found on Pacific Coast and is endangered due to pesticides. It is an uncommon transient in Arizona on many Arizona lakes and rivers. Individuals wander up from Mexico in summer and fall. No breeding records in Arizona.
Canelo Hills ladies'-tressess	*Spiranthes delitescens*	Endangered	Slender erect member of the orchid family (Orchidaceae). Flower stalk 50 cm tall, may contain 40 white flowers spirally arranged on the flowering stalk.	Cochise Santa Cruz	~ 5000 ft	Finely grained, highly organic, staurated soils of cienegas.	Potential habitat occurs in Sonora, Mexico, but no populations have been found.
Chiricahua leopard frog	*Rana chiricahuensis*	Threatened	Cream colored tubercules (spots) on a dark background on the rear of the thigh, dorsolateral folds that are interrupted and deflected medially, and a call given out of water	Apache Cochise Coconino Gila Graham Greenlee Navajo Pima Santa Cruz Yavapai	3300-8900 ft	Streams, rivers, backwaters, ponds, and stock tanks that are mostly free from introduced fish, crayfish, and bullfrogs	Require permanent or nearly permanent water sources. Populations north of the Gila River may be closely-related, but distinct, undescribed species. A special rule allows take of frogs due to operation and maintenance of livestock tanks on State and private

			distinguish this spotted frog from other leopard frogs.				lands.
Cochise pincushion cactus	*Corypantha robbinsorum*	Threatened	A small unbranched cactus with no central spines and 11-17 white radial spines. The bell-shaped flowers are borne on the ends of tubercules (protrusions). Flowers: bell shaped, plae yellow-green. Fruits: orange-red to red.	Cochise Sonora Mexico	> 4200 ft	Semidesert grassland with small shrubs, agave, other cacti, and grama grass.	Grows on gray limestone hills.
Huachuca water umbel	*Lilaeopsis schaffneriana ssp. recurva*	Endangered	Herbaceous, semi-aquatic perennial in the parsley family (Umbelliferae) with slender erect, hollow, leaves that grow from the nodes of creeping rhizomes. Flower: 3 to 10 flowered umbels arise from root nodes.	Cochise Pima Santa Cruz	3500-6500 ft	Cienegas, perennial low gradient streams, wetlands.	And in adjacent Sonora, Mexico, west of the continental divide. Populations also on Fort Huachuca Military Reservation. Critical habitat in Cochise and Santa Cruz counties (64 FR 37441, July 12, 1999)
Jaguar	*Panthera onca*	Endangered	Largest species of cat native to Southwest. Muscular, with relatively short, massive limbs, and a deep-chested body. Usually cinnamon-buff in color with many black spots. Weights ranges from 40-135 kg	Cochise Santa Cruz and Pima	1,600 - >9,800 ft	Found in Sonoran desertscrub up through subalpine conifer forest	Also occurs in New Mexico. A Jaguar conservation team is being formed that is being led by Arizona and New Mexico state entities along with private organizations.

			(90-300 lbs).				
Lesser long-nosed bat	*Leptonycteris curasoae yerbabuenae*	Endangered	Elongated muzzle, small leaf nose, and long tongue. Yellowish brown or gray above and cinnamon brown below. Tail minute and appears to be lacking. Easily disturbed.	Cochise Gila Graham Greenlee Pima Pinal Maricopa Santa Cruz Yavapai	< 6000 ft	Desert scrub habitat with agave and columnar cacti present as food plants.	Day roosts in caves and abandoned tunnels. Forages at night on nectar, pollen, and fruit of paniculate agaves and columnar cacti. This species is migratory and is present in Arizona usually from April to September and south of the border the remainder of the year.
Loach minnow	*Tiaroga cobitis*	Threatened	Small (<3 inches) slender, elongated fish, olive colored with dirty white spots at the base of the dorsal and caudal fins. Breeding males vivid red on mouth and base of fins.	Apache *Cochise Graham Greenlee Gila *Pima Pinal Navajo *Yavapai	<8000 ft	Benthic species of small to large perennial streams with swift shallow water over cobble and gravel. Recurrent flooding and natural hydrograph important.	Presently found in Aravaipa Creek, Blue River, Campbell Blue Creek, San Francisco River, Dry Blue River, and the mainstem upper Gila River. Critical habitat was removed March 1998; but re-proposed December 1999 and finalized April 2000. Species also found in Cattron, Grant, and Hidalgo counties in New Mexico. *Counties with critical habitat presently contain no known existing populations of loach minnow.
Mexican gray wolf	*Canis lupus baileyi*	Endangered	Large dog-like carnivore with varying color, but usually a shade of gray. Distinct white lip line around mouth. Weigh 60-90 pounds.	Apache Cochise Coconino Greenlee Pima Santa Cruz	4,000 - 12,000 ft	Chapparal, woodland, and forested areas. May cross desert areas.	Historic range is considered to be larger than the counties listed above. Unconfirmed reports of individuals in the southern part of the state (Cochise, Pima, Santa Cruz) continue to be received. Individuals may still persist in Mexico. Experimental nonessential population introduced in the Blue Primitive Area of Greenlee, Apache, and Coconino counties.
Mexican spotted owl	*Strix occidentalis lucida*	Threatened	Medium sized with dark eyes and no ear tufts. Brownish	Apache Cochise Coconino	4100-9000 ft	Nests in canyons and dense forests with multi-layered foliage	Generally nests in older forests of mixed conifer or ponderosa pine/gambel oak

			and heavily spotted with white or beige.	Gila Graham Greenlee Maricopa Mohave Navajo Pima Pinal Santa Cruz Yavapai		structure.	type, in canyons, and use variety of habitats for foraging. Sites with cool microclimates appear to be of importance or are preferred. Critical habitat was removed in 1998 but re-proposed in July 2000 and finalized in February 2001 for Apache, Cochise, Coconino, Graham, Mohave, Pima counties; Also in New Mexico, Utah, and Colorado.
New Mexico ridgenose rattlesnake	*Crotalus willardi obscurus*	Threatened	Small 12-24 inches, secretive grayish-brown with distinct ridge on the end of the snout. The dorsal surface has obscure, irregularly spaced white crossbars edged with brown (not a bold pattern).	Cochise	5000-6600 ft	Primarily canyon bottoms in pine-oak communities.	The subspecies has been documented in the Peloncilo Mountains in Arizona. There are only three known records from Arizona. Also occurs in Animas Mountains of New Mexico and Sierra San Luis in Sonora/Chihuahua.
Northern aplomado falcon	*Falco femoralis septentrionalis*	Endangered	Rufous underparts, gray back, long banded tail, and a distinct black and white facial pattern. Smaller than peregrine falcon but larger than a kestral. Breeds between March and June.	Cochise Santa Cruz	3500-9000 ft	Grassland and savannah	Species formerly nested in southwestern U.S. Now occurs as an accidental. Good habitat has low ground cover and mesquite or yucca for nesting platforms. Continued use of pesticides in Mexico endangers this species. No recent confirmed reports for Arizona.
Ocelot	*Leopardus (=Felis) pardalis*	Endangered	Medium-sized spotted cat whose tail is about 1/2 the length of head and body. Yellowish with black streaks and stripes running from front to back.	Cochise Pima Santa Cruz	< 8000 ft	Humid tropical and sub-tropical forests, savannahs, and semi-arid thornscrub.	May persist in partly-cleared forests, second-growth woodland, and abandoned cultivation reverted to brush. Universal component is presence of dense cover. Unconfirmed reports of individuals in the southern part

			Tail is spotted and face is less heavily streaked than the back and sides.				of the state continue to be received.
Sonora tiger salamander	*Ambystoma tigrinum stebbinsi*	Endangered	2.6 to 4.9" snout-vent length with light-colored bands on a dark background. Aquatic larvae are uniform dark color with plume-like gills and tail fins.	Cochise Santa Cruz	4000-6300 ft	Stock tanks and impounded cienegas in San Rafael Valley, Huachuca Mountains.	Also occurs in the foothills of the east slope of the Patagonia and Huachuca Mountains. Populations are also known on Fort Huachuca.
Southwestern willow flycatcher	*Empidonax traillii extimus*	Endangered	Small passerine (about 6 inches) grayish-green back and wings, whitish throat, light olive-gray breast and pale yellowish belly. Two wingbars visible. Eye-ring faint or absent.	Apache Cochise Coconino Gila Graham Greenlee La Paz Maricopa Mohave Navajo Pima Pinal Santa Cruz Yavapai Yuma	<8500 ft	Cottonwood/willow and tamarisk vegetation communities along rivers and streams.	Migratory riparian obligate species that occupies breeding habitat from late April to September. Distribution within its range is restricted to riparian corridors. Difficult to distinguish from other members of the Empidonax complex by sight alone. Training seminar required for those conducting flycatcher surveys. Critical habitat was set aside by the 10th Circuit Court of Appeals (May 17, 2001).
Spikedace	*Meda fulgida*	Threatened	Small (<3 inches) slim with silvery sides and "spine" on dorsal fin. Breeding males brassy golden color.	*Apache *Cochise Graham Greenlee *Gila Navajo *Pima Pinal Yavapai	< 6000 ft	Moderate to large perennial streams with gravel cobble substrates and moderate to swift velocities over sand and gravel substrates. Recurrent flooding and natural hydrograph important.	Presently found in Aravaipa Creek, Eagle Creek, Verde River, East-West-Main and Middle Forks of the Gila River in New Mexico, and Gila River from San Pedro River to Ashurst Hayden Dam. Critical habitat was removed in March 1998, but re-proposed December 1999 and finalized in April 2000. Species also found in Catron, Grant, and Hidalgo counties in New Mexico. *Counties with critical habitat presently contain no

							known existing populations of spikedace.
Yaqui catfish	*Ictalurus pricei*	Threatened	Similar to channel catfish (Ictalurus punctatus) except anal fin base is shorter and the distal margin of the anal fin is broadly rounded with 23-25 soft rays. Body usually profusely speckled.	Cochise	4000-5000 ft	Moderate to large streams with slow current over sand and rock bottoms.	Critical habitat all aquatic habitats in the main portion of San Bernadino National Wildlife Refuge.
Yaqui chub	*Gila purpurea*	Endangered	Medium sized minnow (<6 inches) dark colored, lighter below. Dark triangular caudal spot.	Cochise	4000-6000 ft	Deep pools of small streams, pools, or ponds near undercut banks.	Critical habitat includes all aquatic habitats of the main portion San Bernadino National Wildlife Refuge.
Yaqui topminnow	*Poeciliopsis occidentalis sonoriensis*	Endangered	Small (2 inches) topminnow guppy-like, live bearing, lacking dark spots. Breeding males jet black with yellow fins.	Cochise	< 4500 ft	Small to moderate sized streams, springs, and cienegas generally in shallows.	

2) Proposed

2

Gila chub	*Gila intermedia*	Proposed Endangered	Deep compressed body, flat head. Dark olive-gray color above, silver sides. Endemic to Gila River Basin.	Cochise Coconino Gila Graham Greenlee Maricopa Pima Pinal Santa Cruz Yavapai	2000 - 3500 ft	Pools, springs, cienegas, and streams.	Multiple private landowners, including the Nature Conervancy, the Audubon Society, and others. Also Fort Huachuca. Species also found in Sonora, Mexico. Critical habitat occurs in Cochise, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz and Yavapai counties.
Mountain plover	*Charadrius montanus*	Proposed Threatened	In breeding season with white forehead and line over the	Apache Cochise La Paz Pima	Variable	Open arid plains, short-grass prairies, and cultivated farms.	Species primarily found in Rocky Mountain states from Canada to Mexico. Arizona

			eye; contrasting with dark crown; nondescript in winter. Voice is low, variable whistle.	Pinal Yuma			provides wintering habitat. Breeding has been documented, but is rare, and is likely restricted to tribal and state lands in Apache County.

3) Candidate

4

Black-tailed prairie dog	*Cynomys ludovicianus*	Candidate	Small, stout ground squirrels. Total length of adult 14-17 inches; about 1-3 lbs. Individuals in mixed colors of brown, black, gray, and white. Black-tipped tail. A social animal living in aggregations called towns, colonies, or villages.	Cochise Graham Greenlee	- 5,000 ft	In burrows in plains and grassland habitats.	Species is currently extirpated from the state, but conservation efforts are underway. Twelve-month petition finding published 2/4/00. Extirpated from Arizona around 1938. Reintroduction attempted in 1972, but failed.
Huachuca springsnail	*Pyrgulopsis thompsoni*	Candidate	Very small (1.7-3.2 mm) conical shell. Identification mst be verified by characteristics of reporductive organs.	Cochise Santa Cruz	4500-7200 ft	Aquatic areas, small springs with vegetation slow to moderate flow.	Individuals found on firm substances (roots, wood, and rocks). Other populations found on Fort Huachuca Military Property.
Lemmon fleabane	*Erigeron lemmonii*	Candidate	A prostrate perennial in the sunflower family. Stems and leaves are densely hairy. Flowers look like small delicate daisies, with white to light purple outer petals and yellow inner petals.	Cochise	1500-6000 ft	Grows in dense clumps in crevices, ledges, and boulders in canyon bottoms in pine-oak woodland.	One site on Fort Huachuca Military Reservation.

(b) (7)(E)

County Species Lists-Santa Cruz County

Common Name	Scientific Name	Status	Description	County	Elevation Range	Habitat	Comments
1) Listed							18
Bald eagle	*Haliaeetus leucocephalus*	Threatened	Large, adults have white head and tail. Height 28-38"; wingspan 66-96". 1-4 yrs dark with varying degrees of mottled brown plumage. Feet bare of feathers.	Apache Cochise Coconino Gila Graham La Paz Maricopa Mohave Navajo Pima Pinal Santa Cruz Yavapai Yuma	Varies	Large trees or cliffs near water (reservoirs, rivers, and streams) with abundant prey.	Some birds are nesting residents while a larger number winters along rivers and reservoirs. An estimated 200 to 300 birds winter in Arizona. Once endangered (32 FR 4001, 03-11-1967; 43 FR 6233, 02-14-78) because of reproductive failures from pesticide poisoning and loss of habitat, this species was down listed to threatened on August 11, 1995. Illegal shooting, disturbance, and loss of habitat continues to be a problem. Species has been proposed for delisting (64 FR 36454) but still receives full protection under the ESA.
Cactus ferruginous pygmy-owl	*Glaucidium brasilianum cactorum*	Endangered	Small (Approx. 7"), diurnal owl reddish brown overall with cream-colored belly streaked with reddish brown. Some individuals are grayish brown.	Cochise Gila Graham Greenlee Maricopa Pima Pinal Santa Cruz Yuma	<4000 ft	Mature cottonwood/willow, mesquite bosques, and Sonoran desertscrub	Range limit in Arizona is from New River (North) to Gila Box (East) to Cabeza Prieta Mountains (West). Only a few documented sites where this species persists are known, additional surveys are needed. Critical habitat was vacated by the U.S. District Court for the District fo Arizona (9/19/01) and remanded to the Service for further consideration.

California Brown pelican	*Pelecanus occidentalis californicus*	Endangered	Large dark gray-brown water bird with a pouch underneath long bill and webbed feet. Adults have a white head and neck, brownish black breast, and silver gray upper parts.	Apache Cochise Coconino Gila Graham Greenlee La Paz Maricopa Mohave Navajo Pima Pinal Santa Cruz Yavapai Yuma	Varies	Coastal land and islands; species found around many Arizona lakes and rivers	Subspecies is found on Pacific Coast and is endangered due to pesticides. It is an uncommon transient in Arizona on many Arizona lakes and rivers. Individuals wander up from Mexico in summer and fall. No breeding records in Arizona.
Canelo Hills ladies'-tressess	*Spiranthes delitescens*	Endangered	Slender erect member of the orchid family (Orchidaceae). Flower stalk 50 cm tall, may contain 40 white flowers spirally arranged on the flowering stalk.	Cochise Santa Cruz	~ 5000 ft	Finely grained, highly organic, staurated soils of cienegas.	Potential habitat occurs in Sonora, Mexico, but no populations have been found.
Chiricahua leopard frog	*Rana chiricahuensis*	Threatened	Cream colored tubercules (spots) on a dark background on the rear of the thigh, dorsolateral folds that are interrupted and deflected medially, and a call given out of water distinguish this spotted frog from other leopard frogs.	Apache Cochise Coconino Gila Graham Greenlee Navajo Pima Santa Cruz Yavapai	3300-8900 ft	Streams, rivers, backwaters, ponds, and stock tanks that are mostly free from introduced fish, crayfish, and bullfrogs	Require permanent or nearly permanent water sources. Populations north of the Gila River may be closely-related, but distinct, undescribed species. A special rule allows take of frogs due to operation and maintenance of livestock tanks on State and private lands.
Desert pupfish	*Cyprinodon macularius*	Endangered	Small (2 inches) smoothly rounded body shape with narrow vertical bars on the sides. Breeding males blue on head and sides	Graham La Paz Maricopa Pima Pinal Santa Cruz Yavapai	< 5,000 ft	Shallow springs, small streams, and marshes. Tolerates saline and warm water.	Critical habitat includes Quitobaquito Springs, Pima County, portions of San Felipe Creek, Carrizo Wash, and Fish Creek Wash, Imperial County, California. Two subspeices are

			with yellow on tail. Females and juveniles tan to olive colored back and silvery sides.				recognized: Desert Pupfish (C.m.macularis) and Quitobaquito Pupfish (C.m.eremus).
Gila topminnow	*Poeciliopsis occidentalis occidentalis*	Endangered	Small (2 inches), guppy-like, live bearing, lacks dark spots on its fins. Breeding males are jet black with yellow fins.	Gila Graham La Paz Maricopa Pima Pinal Santa Cruz Yavapai	< 4,500 ft	Small streams, springs, and cienegas vegetated shallows.	Species historically occurred in backwaters of large rivers but is currently isolated to small streams and springs.
Huachuca water umbel	*Lilaeopsis schaffneriana ssp. recurva*	Endangered	Herbaceous, semi-aquatic perennial in the parsley family (Umbelliferae) with slender erect, hollow, leaves that grow from the nodes of creeping rhizomes. Flower: 3 to 10 flowered umbels arise from root nodes.	Cochise Pima Santa Cruz	3500-6500 ft	Cienegas, perennial low gradient streams, wetlands.	And in adjacent Sonora, Mexico, west of the continental divide. Populations also on Fort Huachuca Military Reservation. Critical habitat in Cochise and Santa Cruz counties (64 FR 37441, July 12, 1999)
Jaguar	*Panthera onca*	Endangered	Largest species of cat native to Southwest. Muscular, with relatively short, massive limbs, and a deep-chested body. Usually cinnamon-buff in color with many black spots. Weights ranges from 40-135 kg (90-300 lbs).	Cochise Santa Cruz and Pima	1,600 - >9,800 ft	Found in Sonoran desertscrub up through subalpine conifer forest	Also occurs in New Mexico. A Jaguar conservation team is being formed that is being led by Arizona and New Mexico state entities along with private organizations.
Lesser long-nosed bat	*Leptonycteris curasoae yerbabuenae*	Endangered	Elongated muzzle, small leaf nose, and long tongue. Yellowish brown or gray above and	Cochise Gila Graham Greenlee Pima Pinal	< 6000 ft	Desert scrub habitat with agave and columnar cacti present as food plants.	Day roosts in caves and abandoned tunnels. Forages at night on nectar, pollen, and fruit of paniculate agaves and columnar cacti. This species

			cinnamon brown below. Tail minute and appears to be lacking. Easily disturbed.	Maricopa Santa Cruz Yavapai			is migratory and is present in Arizona usually from April to September and south of the border the remainder of the year.
Mexican gray wolf	*Canis lupus baileyi*	Endangered	Large dog-like carnivore with varying color, but usually a shade of gray. Distinct white lip line around mouth. Weigh 60-90 pounds.	Apache Cochise Coconino Greenlee Pima Santa Cruz	4,000 - 12,000 ft	Chapparal, woodland, and forested areas. May cross desert areas.	Historic range is considered to be larger than the counties listed above. Unconfirmed reports of individuals in the southern part of the state (Cochise, Pima, Santa Cruz) continue to be received. Individuals may still persist in Mexico. Experimental nonessential population introduced in the Blue Primitive Area of Greenlee, Apache, and Coconino counties.
Mexican spotted owl	*Strix occidentalis lucida*	Threatened	Medium sized with dark eyes and no ear tufts. Brownish and heavily spotted with white or beige.	Apache Cochise Coconino Gila Graham Greenlee Maricopa Mohave Navajo Pima Pinal Santa Cruz Yavapai	4100-9000 ft	Nests in canyons and dense forests with multi-layered foliage structure.	Generally nests in older forests of mixed conifer or ponderosa pine/gambel oak type, in canyons, and use variety of habitats for foraging. Sites with cool microclimates appear to be of importance or are preferred. Critical habitat was removed in 1998 but re-proposed in July 2000 and finalized in February 2001 for Apache, Cochise, Coconino, Graham, Mohave, Pima counties; Also in New Mexico, Utah, and Colorado.
Northern aplomado falcon	*Falco femoralis septentrionalis*	Endangered	Rufous underparts, gray back, long banded tail, and a distinct black and white facial pattern. Smaller than peregrine falcon but larger than a kestral.	Cochise Santa Cruz	3500-9000 ft	Grassland and savannah	Species formerly nested in southwestern U.S. Now occurs as an accidental. Good habitat has low ground cover and mesquite or yucca for nesting platforms. Continued use of pesticides in Mexico endangers this

			Breeds between March and June.				species. No recent confirmed reports for Arizona.
Ocelot	*Leopardus (=Felis) pardalis*	Endangered	Medium-sized spotted cat whose tail is about 1/2 the length of head and body. Yellowish with black streaks and stripes running from front to back. Tail is spotted and face is less heavily streaked than the back and sides.	Cochise Pima Santa Cruz	< 8000 ft	Humid tropical and sub-tropical forests, savannahs, and semi-arid thornscrub.	May persist in partly-cleared forests, second-growth woodland, and abandoned cultivation reverted to brush. Universal component is presence of dense cover. Unconfirmed reports of individuals in the southern part of the state continue to be received.
Pima pineapple cactus	*Coryphantha scheeri var. robustispina*	Endangered	Hemispherical stems 4-7 inches tall 3-4 inches diameter. Central spine 1 inch long straw colored hooked surrounded by 6-15 radial spines. Flower: yellow, salmon, or rarely white narrow floral tube..	Pima Santa Cruz	2300-5000 ft	Sonoran desertscrub or semi-desert grassland communities.	Occurs in alluvial valleys or on hillsides in rocky to sandy or silty soils. This species can be confused with juvenile barrel cactus (Ferocactus). However, the spines of the later are flattened, in contrast with the round cross-section of the Coryphantha spines. Also the aeroles (spine clusters) of Coryphantha are on tubercles (bumps), while the areoles of Ferocactus are on ridges (ribs). 80-90% of individuals occur on state and private land.
Sonora chub	*Gila ditaenia*	Threatened	Minnow (<5 inches long) moderately chubby, dark-colored fish with two prominent black lateral bands on the sides and a dark oval spot at the base of the tail. Breeding males have red lower fins and a orange belly.	Santa Cruz	3900 ft	Perennial and intermittent small to moderate streams with boulders and cliffs.	Critical habitat in Sycamore Creek (Santa Cruz County, Arizona). Yank Spring to international border, 2.0 km of Penasco Creek, and lower half of unnamed stream entering sycamore creek about 2.4 km downstream from Yanks Spring. Species extends into Mexico (Altar and Magdelena Rivers).
Sonora tiger	*Ambystoma*	Endangered	2.6 to 4.9" snout-	Cochise	4000-	Stock tanks and	Also occurs in the foothills of

salamander	*tigrinum stebbinsi*		vent length with light-colored bands on a dark background. Aquatic larvae are uniform dark color with plume-like gills and tail fins.	Santa Cruz	6300 ft	impounded cienegas in San Rafael Valley, Huachuca Mountains.	the east slope of the Patagonia and Huachuca Mountains. Populations are also known on Fort Huachuca.
Southwestern willow flycatcher	*Empidonax traillii extimus*	Endangered	Small passerine (about 6 inches) grayish-green back and wings, whitish throat, light olive-gray breast and pale yellowish belly. Two wingbars visible. Eye-ring faint or absent.	Apache Cochise Coconino Gila Graham Greenlee La Paz Maricopa Mohave Navajo Pima Pinal Santa Cruz Yavapai Yuma	<8500 ft	Cottonwood/willow and tamarisk vegetation communities along rivers and streams.	Migratory riparian obligate species that occupies breeding habitat from late April to September. Distribution within its range is restricted to riparian corridors. Difficult to distinguish from other members of the Empidonax complex by sight alone. Training seminar required for those conducting flycatcher surveys. Critical habitat was set aside by the 10th Circuit Court of Appeals (May 17, 2001).

2) Proposed

1

Gila chub	*Gila intermedia*	Proposed Endangered	Deep compressed body, flat head. Dark olive-gray color above, silver sides. Endemic to Gila River Basin.	Cochise Coconino Gila Graham Greenlee Maricopa Pima Pinal Santa Cruz Yavapai	2000 - 3500 ft	Pools, springs, cienegas, and streams.	Multiple private landowners, including the Nature Conervancy, the Audubon Society, and others. Also Fort Huachuca. Species also found in Sonora, Mexico. Critical habitat occurs in Cochise, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz and Yavapai counties.

3) Candidate

3

Huachuca springsnail	*Pyrgulopsis thompsoni*	Candidate	Very small (1.7-3.2 mm) conical shell. Identification mst be verified by	Cochise Santa Cruz	4500-7200 ft	Aquatic areas, small springs with vegetation slow to moderate flow.	Individuals found on firm substances (roots, wood, and rocks). Other populations found on Fort Huachuca

			characteristics of reporductive organs.				Military Property.
Stephan's riffle beetle	*Heterelmis stephani*	Candidate	Small aquatic beetle, typically less than 3 mm in total length.	Santa Cruz	5,100-6,600 ft	Free-flowing springs and seeps, commonly referred to as rheocrenes.	Current distribution is limited to Sylvester Spring. Historically known from Bog Springs, the type locality. Both springs located in Madera Canyon on the Coronado National Forest.
Yellow-billed cuckoo	*Coccyzus americanus*	Candidate	Medium sized bird with a slender, long-tailed profile, slightly down-curved bill, which is blue-black with yellow on the lower half of the bill. Plumage is grayish-brown above and white below, with rufous primary flight feathers.	Apache Cochise Coconino Gila Graham Greenlee La Paz Maricopa Mohave Navajo Pima Pinal Santa Cruz Yavapai Yuma	< 6,500 ft	Large blocks of riparain woodlands (Cottonwood, willow, or tamarisk galleries).	Species was found warranted, but precluded for listing as a distinct vertebrate population segment in the western U.S. on July 25, 2001. This finding indicates that the Service has sufficient information to list the bird, but other, higher priority listing actions prevent the Service from addressing the listing of the cuckoo at this time.

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County Species Lists-Pima County

Common Name	Scientific Name	Status	Description	County	Elevation Range	Habitat	Comments
1) Listed							**20**
Bald eagle	*Haliaeetus leucocephalus*	Threatened	Large, adults have white head and tail. Height 28-38"; wingspan 66-96". 1-4 yrs dark with varying degrees of mottled brown plumage. Feet bare of feathers.	Apache Cochise Coconino Gila Graham La Paz Maricopa Mohave Navajo Pima Pinal Santa Cruz Yavapai Yuma	Varies	Large trees or cliffs near water (reservoirs, rivers, and streams) with abundant prey.	Some birds are nesting residents while a larger number winters along rivers and reservoirs. An estimated 200 to 300 birds winter in Arizona. Once endangered (32 FR 4001, 03-11-1967; 43 FR 6233, 02-14-78) because of reproductive failures from pesticide poisoning and loss of habitat, this species was down listed to threatened on August 11, 1995. Illegal shooting, disturbance, and loss of habitat continues to be a problem. Species has been proposed for delisting (64 FR 36454) but still receives full protection under the ESA.
Cactus ferruginous pygmy-owl	*Glaucidium brasilianum cactorum*	Endangered	Small (Approx. 7"), diurnal owl reddish brown overall with cream-colored belly streaked with reddish brown. Some individuals are grayish brown.	Cochise Gila Graham Greenlee Maricopa Pima Pinal Santa Cruz Yuma	<4000 ft	Mature cottonwood/willow, mesquite bosques, and Sonoran desertscrub	Range limit in Arizona is from New River (North) to Gila Box (East) to Cabeza Prieta Mountains (West). Only a few documented sites where this species persists are known, additional surveys are needed. Critical habitat was vacated by the U.S. District Court for the

							District fo Arizona (9/19/01) and remanded to the Service for further consideration.
California Brown pelican	*Pelecanus occidentalis californicus*	Endangered	Large dark gray-brown water bird with a pouch underneath long bill and webbed feet. Adults have a white head and neck, brownish black breast, and silver gray upper parts.	Apache Cochise Coconino Gila Graham Greenlee La Paz Maricopa Mohave Navajo Pima Pinal Santa Cruz Yavapai Yuma	Varies	Coastal land and islands; species found around many Arizona lakes and rivers	Subspecies is found on Pacific Coast and is endangered due to pesticides. It is an uncommon transient in Arizona on many Arizona lakes and rivers. Individuals wander up from Mexico in summer and fall. No breeding records in Arizona.
Chiricahua leopard frog	*Rana chiricahuensis*	Threatened	Cream colored tubercules (spots) on a dark background on the rear of the thigh, dorsolateral folds that are interrupted and deflected medially, and a call given out of water distinguish this spotted frog from other leopard frogs.	Apache Cochise Coconino Gila Graham Greenlee Navajo Pima Santa Cruz Yavapai	3300-8900 ft	Streams, rivers, backwaters, ponds, and stock tanks that are mostly free from introduced fish, crayfish, and bullfrogs	Require permanent or nearly permanent water sources. Populations north of the Gila River may be closely-related, but distinct, undescribed species. A special rule allows take of frogs due to operation and maintenance of livestock tanks on State and private lands.
Desert pupfish	*Cyprinodon macularius*	Endangered	Small (2 inches) smoothly rounded body shape with narrow vertical bars on the sides. Breeding males blue on head and sides with yellow on tail. Females and juveniles tan to olive colored back and silvery sides.	Graham La Paz Maricopa Pima Pinal Santa Cruz Yavapai	< 5,000 ft	Shallow springs, small streams, and marshes. Tolerates saline and warm water.	Critical habitat includes Quitobaquito Springs, Pima County, portions of San Felipe Creek, Carrizo Wash, and Fish Creek Wash, Imperial County, California. Two subspeices are recognized: Desert Pupfish (C.m.macularis) and Quitobaquito Pupfish (C.m.eremus).

Gila topminnow	*Poeciliopsis occidentalis occidentalis*	Endangered	Small (2 inches), guppy-like, live bearing, lacks dark spots on its fins. Breeding males are jet black with yellow fins.	Gila Graham La Paz Maricopa Pima Pinal Santa Cruz Yavapai	< 4,500 ft	Small streams, springs, and cienegas vegetated shallows.	Species historically occurred in backwaters of large rivers but is currently isolated to small streams and springs.
Huachuca water umbel	*Lilaeopsis schaffneriana ssp. recurva*	Endangered	Herbaceous, semi-aquatic perennial in the parsley family (Umbelliferae) with slender erect, hollow, leaves that grow from the nodes of creeping rhizomes. Flower: 3 to 10 flowered umbels arise from root nodes.	Cochise Pima Santa Cruz	3500-6500 ft	Cienegas, perennial low gradient streams, wetlands.	And in adjacent Sonora, Mexico, west of the continental divide. Populations also on Fort Huachuca Military Reservation. Critical habitat in Cochise and Santa Cruz counties (64 FR 37441, July 12, 1999)
Jaguar	*Panthera onca*	Endangered	Largest species of cat native to Southwest. Muscular, with relatively short, massive limbs, and a deep-chested body. Usually cinnamon-buff in color with many black spots. Weights ranges from 40-135 kg (90-300 lbs).	Cochise Santa Cruz and Pima	1,600 - >9,800 ft	Found in Sonoran desertscrub up through subalpine conifer forest	Also occurs in New Mexico. A Jaguar conservation team is being formed that is being led by Arizona and New Mexico state entities along with private organizations.
Kearney blue star	*Amsonia kearneyana*	Endangered	A herbaceous perennial in the dogbane family (Apocynaceae). Thickened woody root and many pubescent (hairy) stems that rarely branch. Flowers: white terminal	Pima	3600-3800 ft	West-facing drainages in the Baboquivari Mountains.	Plants grow in stable, partially shaded, coarse alluvium along a dry wash in the Baboquivari Mountains. Range is extremely limited. Protected by Arizona Native Plant Law.

			inflorescence in April and May.				
Lesser long-nosed bat	*Leptonycteris curasoae yerbabuenae*	Endangered	Elongated muzzle, small leaf nose, and long tongue. Yellowish brown or gray above and cinnamon brown below. Tail minute and appears to be lacking. Easily disturbed.	Cochise Gila Graham Greenlee Pima Pinal Maricopa Santa Cruz Yavapai	< 6000 ft	Desert scrub habitat with agave and columnar cacti present as food plants.	Day roosts in caves and abandoned tunnels. Forages at night on nectar, pollen, and fruit of paniculate agaves and columnar cacti. This species is migratory and is present in Arizona usually from April to September and south of the border the remainder of the year.
Loach minnow	*Tiaroga cobitis*	Threatened	Small (<3 inches) slender, elongated fish, olive colored with dirty white spots at the base of the dorsal and caudal fins. Breeding males vivid red on mouth and base of fins.	Apache *Cochise Graham Greenlee Gila *Pima Pinal Navajo *Yavapai	<8000 ft	Benthic species of small to large perennial streams with swift shallow water over cobble and gravel. Recurrent flooding and natural hydrograph important.	Presently found in Aravaipa Creek, Blue River, Campbell Blue Creek, San Francisco River, Dry Blue River, and the mainstem upper Gila River. Critical habitat was removed March 1998; but re-proposed December 1999 and finalized April 2000. Species also found in Cattron, Grant, and Hidalgo counties in New Mexico. *Counties with critical habitat presently contain no known existing populations of loach minnow.
Masked bobwhite	*Colinus virginianus ridgewayi*	Endangered	Males brick-red breast and black head and throat. Females are generally nondescript but resemble other raves such as the Texas bobwhite.	Pima	1000-4000 ft	Desert grasslands with diversity of dense native grasses, forbs, and brush.	Species is closely associated with Acacia angustissima. Formerly occurred in Altar and Santa Cruz Valleys, as well as Sonora, Mexico. Presently only known from reintroduced populations on Buenos Airess.
Mexican gray wolf	*Canis lupus baileyi*	Endangered	Large dog-like carnivore with varying color, but	Apache Cochise Coconino	4,000 - 12,000 ft	Chapparal, woodland, and forested areas. May cross desert	Historic range is considered to be larger than the counties listed

			usually a shade of gray. Distinct white lip line around mouth. Weigh 60-90 pounds.	Greenlee Pima Santa Cruz		areas.	above. Unconfirmed reports of individuals in the southern part of the state (Cochise, Pima, Santa Cruz) continue to be received. Individuals may still persist in Mexico. Experimental nonessential population introduced in the Blue Primitive Area of Greenlee, Apache, and Coconino counties.
Mexican spotted owl	*Strix occidentalis lucida*	Threatened	Medium sized with dark eyes and no ear tufts. Brownish and heavily spotted with white or beige.	Apache Cochise Coconino Gila Graham Greenlee Maricopa Mohave Navajo Pima Pinal Santa Cruz Yavapai	4100-9000 ft	Nests in canyons and dense forests with multi-layered foliage structure.	Generally nests in older forests of mixed conifer or ponderosa pine/gambel oak type, in canyons, and use variety of habitats for foraging. Sites with cool microclimates appear to be of importance or are preferred. Critical habitat was removed in 1998 but re-proposed in July 2000 and finalized in February 2001 for Apache, Cochise, Coconino, Graham, Mohave, Pima counties; Also in New Mexico, Utah, and Colorado.
Nichol Turk's head cactus	*Echinocactus horizonthalonius var. nicholii*	Endangered	Blue-green to yellowish-green, columnar, 18 inches tall, 8 inches in diameter. Spine clusters have 5 radial and 3 central spines; one downward short; 2 spines upward and red or vasally gray. Flower: pink fruit: woolly white.	Pima Pinal	2400-4100 ft	Sonoran desertscrub	Found in unshaded microsites in Sonoran desertscrub on dissected alluvial fans at the foot of limestone mountains and on inclined terraces and saddles on limestone mountainsides.
Ocelot	*Leopardus*	Endangered	Medium-sized	Cochise	< 8000 ft	Humid tropical and	May persist in partly-

	(=Felis) pardalis		spotted cat whose tail is about 1/2 the length of head and body. Yellowish with black streaks and stripes running from front to back. Tail is spotted and face is less heavily streaked than the back and sides.	Pima Santa Cruz		sub-tropical forests, savannahs, and semi-arid thornscrub.	cleared forests, second-growth woodland, and abandoned cultivation reverted to brush. Universal component is presence of dense cover. Unconfirmed reports of individuals in the southern part of the state continue to be received.
Pima pineapple cactus	*Coryphantha scheeri var. robustispina*	Endangered	Hemispherical stems 4-7 inches tall 3-4 inches diameter. Central spine 1 inch long straw colored hooked surrounded by 6-15 radial spines. Flower: yellow, salmon, or rarely white narrow floral tube..	Pima Santa Cruz	2300-5000 ft	Sonoran desertscrub or semi-desert grassland communities.	Occurs in alluvial valleys or on hillsides in rocky to sandy or silty soils. This species can be confused with juvenile barrel cactus (Ferocactus). However, the spines of the later are flattened, in contrast with the round cross-section of the Coryphantha spines. Also the aeroles (spine clusters) of Coryphantha are on tubercles (bumps), while the areoles of Ferocactus are on ridges (ribs). 80-90% of individuals occur on state and private land.
Sonoran pronghorn	*Antilocapra americana sonoriensis*	Endangered	Buff on back and white below, hoofed with slightly curved black horns having a single prong. Smallest and palest of the pronghorn subspecies	Maricopa Pima Yuma	2,000-4,000 ft	Broad intermountain alluvial valleys with creosote-bursage and palo verde-mixed cacti associations	Typically, bajadas are used as fawning areas and sandy dune areas provide food seasonally. Historic range was probably larger than exists today. This subspecies also occurs in Mexico.
Southwestern willow flycatcher	*Empidonax traillii extimus*	Endangered	Small passerine (about 6 inches) grayish-green back and wings, whitish throat, light olive-gray breast and	Apache Cochise Coconino Gila Graham Greenlee	<8500 ft	Cottonwood/willow and tamarisk vegetation communities along rivers and streams.	Migratory riparian obligate species that occupies breeding habitat from late April to September. Distribution within its range is restricted to riparian

			pale yellowish belly. Two wingbars visible. Eye-ring faint or absent.	La Paz Maricopa Mohave Navajo Pima Pinal Santa Cruz Yavapai Yuma			corridors. Difficult to distinguish from other members of the Empidonax complex by sight alone. Training seminar required for those conducting flycatcher surveys. Critical habitat was set aside by the 10th Circuit Court of Appeals (May 17, 2001).
Spikedace	*Meda fulgida*	Threatened	Small (<3 inches) slim with silvery sides and "spine" on dorsal fin. Breeding males brassy golden color.	*Apache *Cochise Graham Greenlee *Gila Navajo *Pima Pinal Yavapai	< 6000 ft	Moderate to large perennial streams with gravel cobble substrates and moderate to swift velocities over sand and gravel substrates. Recurrent flooding and natural hydrograph important.	Presently found in Aravaipa Creek, Eagle Creek, Verde River, East-West-Main and Middle Forks of the Gila River in New Mexico, and Gila River from San Pedro River to Ashurst Hayden Dam. Critical habitat was removed in March 1998, but re-proposed December 1999 and finalized in April 2000. Species also found in Catron, Grant, and Hidalgo counties in New Mexico. *Counties with critical habitat presently contain no known existing populations of spikedace.

2) Proposed

2

Gila chub	*Gila intermedia*	Proposed Endangered	Deep compressed body, flat head. Dark olive-gray color above, silver sides. Endemic to Gila River Basin.	Cochise Coconino Gila Graham Greenlee Maricopa Pima Pinal Santa Cruz Yavapai	2000 - 3500 ft	Pools, springs, cienegas, and streams.	Multiple private landowners, including the Nature Conervancy, the Audubon Society, and others. Also Fort Huachuca. Species also found in Sonora, Mexico. Critical habitat occurs in Cochise, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz and Yavapai

							counties.
Mountain plover	*Charadrius montanus*	Proposed Threatened	In breeding season with white forehead and line over the eye; contrasting with dark crown; nondescript in winter. Voice is low, variable whistle.	Apache Cochise La Paz Pima Pinal Yuma	Variable	Open arid plains, short-grass prairies, and cultivated farms.	Species primarily found in Rocky Mountain states from Canada to Mexico. Arizona provides wintering habitat. Breeding has been documented, but is rare, and is likely restricted to tribal and state lands in Apache County.

3) Candidate

3

Acuna cactus	*Echinomastus erectocentrus var. acunensis*	Candidate	<12 inches high spine clusters borne on tubercles, each with a groove on the upper surface. 2-3 central spines and 12 radial spines. Flowers pink to purple.	Pima Pinal	1300-2000 ft	Well drained knolls and gravel ridges in Sonoran desertscrub.	Immature plants distinctly different from mature plants. They are disc-shaped or spherical and have no central spines until they are about 1.5 inches. Radial spines are dirty white with maroon tips.
Sonoyta mud turtle	*Kinosternon sonoriense longifemorale*	Candidate	Primarily a pond turtle, prefers mud or sandy bottoms. Body 3 1/2 to 6 1/2. Head and neck mottled with contrasting light and dark markings. Found in Quitobaquito Springs.	Pima	1,100 ft	Ponds and streams.	Species also found in Rio Sonoyta, Sonora, Mexico.
Yellow-billed cuckoo	*Coccyzus americanus*	Candidate	Medium sized bird with a slender, long-tailed profile, slightly down-curved bill, which is blue-black with yellow on the lower half of the bill. Plumage is grayish-brown above and white below, with rufous primary flight	Apache Cochise Coconino Gila Graham Greenlee La Paz Maricopa Mohave Navajo Pima Pinal	< 6,500 ft	Large blocks of riparain woodlands (Cottonwood, willow, or tamarisk galleries).	Species was found warranted, but precluded for listing as a distinct vertebrate population segment in the western U.S. on July 25, 2001. This finding indicates that the Service has sufficient information to list the bird, but other, higher priority listing actions prevent the

			feathers.	Santa Cruz Yavapai Yuma			Service from addressing the listing of the cuckoo at this time.

4) Conservation Agreement

2

Gooddings onion	*Allium goodingii*	Conservation Agreement	Herbaceous perenial plant; broad, flat, rather blunt leaves; flowering stalk 14-17 inches tall, flattened, and narrowly winged toward apex; fruit is broader than long; seeds are short and thick.	Apache Greenlee Pima	> 7,500 ft	Forested drainage bottoms and on moist north facing slopes of mixed conifer and spruce fir forests.	Conservation agreement between the Service and the Forest Service signed in February 1998. In New Mexico on the Lincoln and Gila National Forests.

Previous Next Expand Collapse Search

AUGUST 2002

REVIEW DRAFT

BIOLOGICAL ASSESSMENT FOR U.S. BORDER PATROL YUMA SECTOR ACTIVITIES WITHIN ARIZONA

IMMIGRATION AND NATURALIZATION SERVICE
WASHINGTON, D.C.

BIOLOGICAL ASSESSMENT

U.S. BORDER PATROL
YUMA SECTOR

REVIEW DRAFT

Submitted by:
U.S. Department of Justice
Immigration and Naturalization Service
Washington, D.C.

August, 2002

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1.0 INTRODUCTION

1.1 Overview

The Endangered Species Act (ESA) of 1973, as amended (1978), requires Federal agencies to ensure that their activities do not have an adverse impact on any species listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS). It further requires that Federal agencies implement measures to conserve, protect, and where possible, enhance any listed species and its habitat. If a Federal agency determines that their activities may have an effect upon a listed species, the agency is required under Section 7 of the ESA, to enter into consultation with the USFWS to obtain a Biological Opinion (BO) regarding the magnitude of the potential effect upon the species and its continued existence. Consultation generally consists of the development of a Biological Assessment (BA), which identifies the proposed action, the species that may be affected, and the potential effects on those species if the action is implemented. The USFWS issues a BO based upon its review of the BA.

In February 1999, the Immigration and Naturalization Service (INS) submitted a BA addressing the effects of U.S. Border Patrol (USBP) operations on Federally protected plant and animal species for the Yuma Sector – Wellton Station area of operation (AO) in accordance with Section 7 of the ESA. The Yuma Sector-Wellton Station is responsible for patrolling the (b) (7)(E) efforts are required in order to identify and apprehend, undocumented aliens and/or drug smugglers within its AO. The Yuma Sector-Wellton Station encompasses approximately 3,000 square miles of territory corresponding with the (b) (7)(E) (b) (7)(E) (b) (7)(E) A detailed description of these facilities and the authority governing them is provided in Section 3. After review of the document and formal consultation procedures, the USFWS issued a BO for USBP operations in the Yuma Sector – Wellton Station AO on September 5, 2000 (Appendix A).

The Defenders of Wildlife (Defenders) filed a Notice of Intent (NOI) to sue the INS and USFWS on August 15, 2001. The NOI states that both the UFSWS and INS violated Sections 7 and 9 of the ESA by failing to take appropriate steps for the protection and recovery of the Sonoran pronghorn (*Antilocapra americana sonoriensis*) a Federally listed endangered species. An earlier court ruling (Defenders of Wildlife v. Babbitt, 130 F.Supp.2d 121 [D.D.C. 2001]) remanded the INS's BO back to the USFWS, as well as, several other Federal agencies' BOs addressing impacts to the Sonoran pronghorn. Specifically, the Federal court directed the Federal defendants to "take into account cumulative effects of all Federal activities in the action area affecting species". In an October 12, 2001 letter to the USFWS, the INS requested reinitiation of formal consultation under Section 7 of the ESA for the Arizona portion of the Yuma Sector (Appendix B). Specifically, the INS committed to update the original BA in light of the Federal court order for the Federal defendants to take into account the potential cumulative effects of their operations, particularly in regard to the Sonoran pronghorn. The USFWS responded to the INS in a letter dated December 26, 2001, which provided six items the USFWS required to reinitiate formal consultation (Appendix B). On February 26, 2002 representatives from the INS, USBP, INS Architectural and Engineering Resource Center (INS A-E), and Gulf South Research Corporation (GSRC) met with representatives from USFWS to discuss the six items provided in the December 26, 2001 transmittal. Minutes from the February

(b) (7)(E)

26, 2002 meeting are provided in Appendix B. The following is a list of the six items requested by the USFWS:

1) Update of description of the action to include additional infrastructure, aircraft, and increases in personnel over what was covered in the first biological assessment.
2) Update of Action Area to include new drag roads and other infrastructure.
3) Update of the species list.
4) Expansion and update of cumulative effects.
5) Any relevant reports that have been prepared from studies required in the terms and conditions in the first opinion need to be provided.
6) Any other relevant available information concerning the action or affected listed species, such as progress in implementation of the biological opinion and status of the annual reports required in the first opinion, need to be provided.

This BA includes data, findings, and references from the original BA, as well as, items 1-4 (listed above) requested by the USFWS. In addition, this BA only addresses impacts to Federally protected species from USBP operations which occur in the Arizona portion of the Yuma Sector. The Yuma Sector – Yuma Station is responsible for patrolling the U.S.-Mexico (b) (7)(E) (b) (7)(E) A portion of the Yuma Station's AO (b) (7)(E) however, this BA only addresses the effects on USBP operations and infrastructure in Arizona. Although the Yuma Station extends (b) (7)(E) the analysis was limited to that portion of the Yuma Station south (b) (7)(E) within Arizona because ground disturbing activities performed by the USBP are located (b) (7)(E) Responses to items 5 and 6 were provided to the USFWS in the BO annual report forwarded to the USFWS on April 10, 2002 (Appendix C). Recommended actions are presented to further avoid, minimize and mitigate any potential adverse effects to these species as well as recommendations for further Section 7 consultations in compliance with the ESA. It is intended that this BA will provide the information required by the USFWS to reinitiate formal consultation and reissue a BO in accordance with the formal consultation requirements of Section 7 of the ESA.

1.2 U.S. Border Patrol Mission and Authority

The mission of the USBP is to protect the U.S. boundaries through the detection and prevention of smuggling and illegal entry of undocumented aliens (UDAs) into the United States. The mission includes the enforcement of the Immigration and Naturalization Act (INA) and the performance of a uniformed, Federal law enforcement agency with authority delegated by the U.S. Attorney General.

The primary sources of authority granted to officers of the INS are the INA, found in Title 8 of the United States Code (8 U.S.C.), and other statutes relating to the immigration and naturalization of aliens. The secondary sources of authority are administrative regulations implementing those statutes, primarily those found in Title 8 of the Code of Federal Regulations (8 C.F.R. Section 287), judicial decisions, and administrative decisions of the Board of Immigration Appeals.

Subject to constitutional limitations, INS officers may exercise the authority granted to them in the INA. The statutory provisions related to enforcement authority are found in Sections 287(a), 287(b), 287(c), and 287(e) [8 U.S.C. **§** 1357(a,b,c,e)]; Section 235(a) (8 U.S.C. **§** 1225);

Sections 274(b) and 274(c) [8 U.S.C. **§** 1324(b,c)]; Section 274A (8 U.S.C. **§** 1324a); and Section 274C(8 U.S.C. **§** 1324c) of the INA.

Other statutory sources of authority are Title 18 of the United States Code (18 U.S.C.), which has several provisions that specifically relate to enforcement of the immigration and nationality laws; Title 19 [19 U.S.C. 1401 **§** (i)], relating to Customs cross-designation of INS officers; and Title 21(21 U.S.C. **§** 878), relating to Drug Enforcement Agency cross-designation of INS officers.

1.3 History and Background

Because of concerns of rising numbers of undocumented migrants, the United States Congress passed the Immigration Act of 1891, the nation's first comprehensive immigration law. The Act created the Bureau of Immigration within the Treasury Department and placed the Commissioner of Immigration in the port of New York. The Bureau of Immigration was transferred to the Department of Commerce in 1903. Immigration continued to rise, reaching a peak in 1907 when 1,285,349 immigrants arrived. Subsequent legislation (e.g., Immigration Act of 1924) that required more stringent requirements to enter the United States, coupled with the events surrounding World War I and the Great Depression, caused immigration rates to decline over the next few decades.

In the years preceding World War II, the numerical quota system continued under amendments to the Immigration Act of 1924. Immigration increased quickly after the war, however, partially because of new legislation that relaxed or waived some quotas to allow immigration of war brides, refugees, and orphans. The Displaced Persons Act of 1948, the Immigration and Nationality Act of 1952, and the Refugee Relief Act of 1953 were among those acts.

Until the 1960s, the majority of immigrants to the United States came from Europe, with smaller numbers coming from Asia and other countries in the Western Hemisphere. In the 1960s the national origins principle of determining immigration quotas was discontinued after 40 years of use. During the 1960s and 1970s, various legislation allowed for the immigration of refugees fleeing from political upheavals in specific countries and fleeing due to fear of persecution because of race, religion or political beliefs. It was also during this period that the Immigration and Nationality Act was amended in October 1965, placing the first numerical ceiling on the total number of immigrants into the United States, but abolished quotas by nationality. The new system provided an annual ceiling of 290,000 (later reduced to 270,000 in 1980 by Congress).

Since 1980, an average of 150,000 immigrants have been naturalized every year. At the same time, however, undocumented aliens have become a significant issue. INS' apprehension rates are currently averaging more than one million undocumented aliens per year throughout the country. . Studies indicate that approximately 10 million illegal aliens reside in the United States. For the past several years, Mexicans have comprised the largest number of legal as well as illegal immigrants to the United States.

The USBP activities are administered under the Field Operations Division of the INS, which is one of three INS Executive Divisions. As mentioned previously, the USBP's primary function is to detect and prevent the unlawful entry of aliens and smuggling along the nation's land and water borders. With the increase in illegal drug trafficking, the USBP also has assumed the major Federal responsibility for illegal drug interdiction. In fiscal year (FY) 1999, the USBP made over 7,500 drug seizures along the southwestern border, resulting in the removal of over

a million pounds of marijuana, about 24,000 pounds of cocaine, and 724 ounces of heroin from the streets of the United States. The combined value of these drugs was over $1.7 billion.

Until the early 1990's there was limited awareness of southwest border issues and little national attention was given to illegal border activity. As a result, the USBP growth was nominal, funding for enforcement efforts fell short, and the USBP was required to function within severe constraints. Social events in the nineties elevated the nation's awareness concerning illegal immigration and narcotics smuggling and generated substantial interest in policing the southwest border. Increased national concern has led to increases in funding and staffing and has enabled the USBP to develop effective enforcement strategies independent of conventional limitations.

The mission of the USBP is to detect, deter and apprehend illegal entry across the border. Deterrence is affected through the actual presence (24 hours per day, seven days per week) of the USBP agents on the border, fences and other physical (natural and man-made) barriers, lighting, and the certainty that the illegal entrants will be detected and apprehended. Detection of the illegal traffickers is accomplished through a variety of low-technology and high-technology resources including observing physical signs of illegal entry (vehicle tracks, footprints, refuse, human waste, clothes, etc.), visual observation of the illegal entries, information provided by private landowners or the general public, ground sensors, and RVS systems. The continuation of historic enforcement operations such as dragging operations, aerial reconnaissance, remote sensing technology, lighting, increased patrols and patrol agents, coupled with additional future infrastructure, would greatly facilitate deterrence of illegal crossings and allow the USBP to gain and maintain control of the border.

In partial response to the continued problems of smuggling and UDAs, the U.S. Congress passed the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) of 1996. Title 1, Subtitle A, Section 102 of IIRIRA states that the Attorney General, in consultation with the Commissioner of Immigration and Naturalization, shall take such actions as may be necessary to install additional physical barriers, roads and other infrastructure deemed necessary in the vicinity of the U.S. border to deter illegal crossings in areas of high entry into the U.S.

1.4 Purpose and Need

The purpose of the operations and infrastructure discussed in this BA is to facilitate USBP law enforcement along the identified section of the U.S.-Mexico border as mandated by Federal laws. The need for these operations and programs is to gain, maintain, and extend control of the U.S. borders. Additional information to support this need and purpose is provided in the following paragraphs.

The U.S. experiences a substantial influx of illegal immigrants and drugs each year. Both of these illegal activities cost the American citizens billions of dollars annually due directly to criminal activities, as well as the cost of apprehension, detention and incarceration of criminals; and, indirectly in loss of property, illegal participation in government programs and increased insurance costs.

Rising rates of violent crime, serious damage to the Nation's health and economy, and strains on vital relationships with international allies led the U.S. Congress to develop the National Drug Control Strategy. The National Drug Control Strategy included the USBP and mandated a "prevention through deterrence" strategy. The National Drug Control Strategy also formulated a

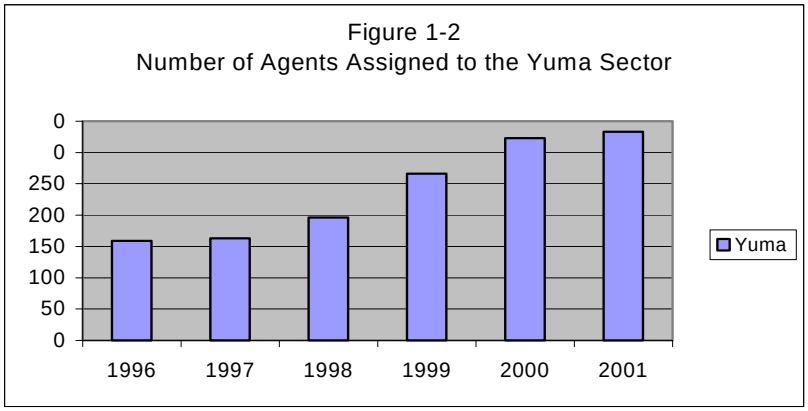
multi-year approach that required the USBP and other local Drug Law Enforcement Agencies to "... gain, maintain, and extend control..." of the border region into the United States.

USBP stations along the U.S.-Mexico border experienced a 25 percent increase in the number of drug seizures from FY 1996 to FY 2001, and an overall 30 percent increase since FY 1995. More importantly, the value and number of drug seizures along the southwestern border represent at least 95 percent of those made by the USBP throughout the nation. In addition, the United States is also experiencing epidemic levels of drug use and drug-related crimes as reported by the Office of National Drug Control Policy (1999 and 2000):

- Illegal drugs cost our society approximately $110 billion annually.
- 1.5 million Americans were arrested in 1997 for violating drug laws.
- 819 persons per 100,000 population were murdered during drug related offenses.
- 322,000 Americans are casual heroin users and over 800,000 are heavy users.
- 1.5 to 3 million Americans are casual cocaine users.
- Prison populations (drug-related crimes) doubled between 1989 and 1996.
- Over 10 percent of Americans used some form of illicit drug in 1998.

To combat these rising numbers, the Clinton Administration committed additional resources to law enforcement agencies, including the USBP. The number of agents assigned to the Yuma (333) sector has more than doubled since FY 1996 (Figure 1-2). The USBP station facilities at Wellton and Yuma were not designed to house the number of agents currently assigned to these stations.

Figure 1-2
Number of Agents Assigned to the Yuma Sector



The constant flow of UDAs passing through the U.S.-Mexico border area also threatens public lands, historical structures, and endangered species. Vehicles used by smugglers are continuously being abandoned in National Parks and other natural and sensitive areas. Removal of these vehicles is becoming an ever-increasing burden on Federal and State land managers, private landowners, as well as the USBP. UDAs have trampled vegetation and left litter, abandoned vehicles and deposited human excrement in an area that extends from the Bureau of Land Management's (BLM) Guadalupe Canyon in the southeast corner of Arizona to the U.S. Forest Service's (USFS) Coronado National Memorial south of Sierra Vista (Arizona Daily Star 2000). Smugglers crossing the border in vehicles, as well as, pedestrian UDAs have created new roads and trails on the CPNWR destroying valuable habitat that supports Federal and state protected and sensitive species. The following description was taken from a letter written by James Bellamy, Superintendent at the Coronado National Monument to Senator Jon Kyle on June 20, 2000.

> *"This activity* [UDA invasion into protected areas] *has significantly impacted park resources. Human foot traffic has created several trails the width of one-lane roads. The large numbers of people have destroyed vegetation, exposed bare*

ground, eroded deep hillsides, and caused scars that will take years to heal. Smaller trails cover some parts of the park like spider webs. Litter covers the ground in many places, particularly plastic water bottles, food containers, discarded clothing and blankets. Conditions are very unsanitary in many places due to the amount of feces and toilet paper."

Thus, the purpose and need of the operations and infrastructure deployed by the Yuma Sector are:

(1) Satisfy the USBP mission mandated by the U.S. Congress to gain and maintain control of the border to prevent the unlawful entry of persons into the United States.
(2) Provide a safe, effective, and efficient environment in which to accomplish the USBP mission.
(3) Enhance the effectiveness of the apprehension activities through the combined use of manpower, technology and infrastructure to increase deterrence.
(4) Protect sensitive resources, public and private lands, and U.S. citizens from illegal entrants and illegal activities.

Following the terrorist attacks on U.S. soil on September 11, 2001, the U.S. Attorney General emphasized the need to prevent terrorism. The INS and USBP are key elements in responding to this new threat to our nation and its citizens. The ability of the USBP to insure the integrity and security of our national borders would be an integral part of this effort to deter and prevent terrorism. The deployment of operation, infrastructure, and technology strategies along the U.S.-Mexico border are key elements in the USBP's efforts to deter and prevent terrorist from entering the U.S.

1.5 Operations and Infrastructure

The USBP has been conducting undocumented alien apprehension, contraband interdiction, and search and rescue operations in southwestern Arizona since the 1920s. Ground patrols were supplemented with fixed-wing aircraft surveillance in the 1940s and drag roads were initiated in the 1940s to aid in the rapid and accurate detection of border crossings. Helicopter surveillance was initiated in 1983. Drag road operation and helicopter surveillance continue as the primary means of detecting and limiting illegal and inappropriate activities in the region.

Several measures have to be employed by the USBP in order to observe illegal activity or signs of illegal activity including road patrols, (b) (7)(E) flights, drag roads, establishment of infrastructure (i.e. fences, lights, and RVS), and establishment of checkpoints. Activities and infrastructure deployed in the Wellton and Yuma Stations within the Action Area are presented in Figure 1-3. Once illegal activity has been detected, the USBP agents must attempt to apprehend and detain illegal entrants. Ground vehicles, agents on foot, and aircraft may be used, individually or collectively to make the apprehensions. When possible, the USBP agents remain on existing roads while attempting to apprehend illegal entrants; however, since illegal entrants attempt to avoid detection by avoiding existing roads, off-road activity by the USBP is sometimes required.

1.5.1 Ground Patrols and Associated Activities

1.5.1.1 Drag Road Preparation

The USBP has been preparing drag roads (b) (7)(E) since the 1940s. A drag road is an existing unimproved road or well-used trail, historically traveled or crossed by

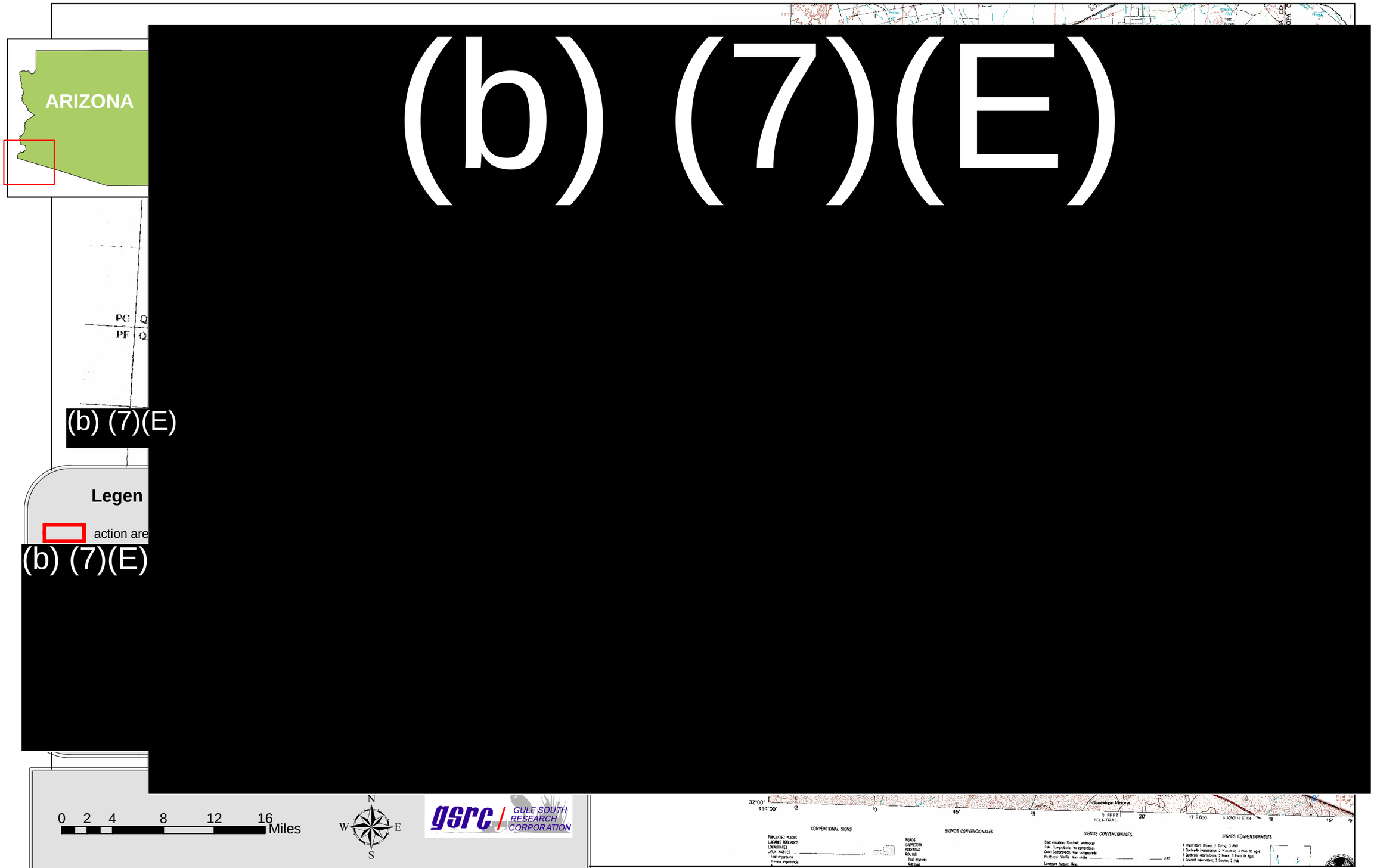


Figure 1-3: Yuma and Wellton Station Activities

illegal entrants along a general route of travel from the U.S.-Mexico border northward. The surface of these roads is prepared using a method known as dragging. (b) (7)(E)

(b) (7)(E) miles per hour. This method (b) (7)(E)

Drag roads are instrumental (b) (7)(E)

The Wellton and Yuma Stations currently prepare approximately (b) (7)(E) miles of drag roads (see Photo 1-1). The location of these drag roads is presented in Table 1-1. Many of these roads are open to the public and used as general transportation routes. In addition, portions of some access roads are subject to dragging activities, depending upon entry patterns. The entire length of any access road can potentially be used as a drag road, bringing the total length of roads subject to dragging to approximately 262 miles. (b) (7)(E) (b) (7)(E). Each drag road (not including access roads) is prepared (b) (7)(E) on average (see Appendix D for frequency of dragging operations). Dragging activities occur throughout the Yuma Sector approximately (b) (7)(E)

(b) (7)(E)

1.5.1.2 Access Road Maintenance

Photo 1-2
Patrol Road

Access roads are existing roads that are used by the USBP to travel to and from drag roads and other patrol areas (Photo 1-2). Approximately 90 total miles of access roads are maintained within the Yuma and Wellton Station's AOs. Road maintenance and dragging are two different functions; however, as discussed in Section 1.5.1.1, some access roads are subject to dragging to some extent. Maintenance of access roads is conducted to improve the condition of the roads and to enhance entry and exit of USBP vehicles into and out of the remote desert areas. Access roads are maintained by use of an INS road grader operated by a qualified heavy equipment operator employed by the USBP. This maintenance is generally performed (b) (7)(E), (b) (7)(E). The road grader operators begin at a designated location on an access road and make (b) (7)(E) over a length of the road. During this time, all areas of the access roads that require repair are maintained, including associated drag roads.

Table 1-1: Yuma Sector Drag Road Locations and Dimensions

Name of Drag Road	Length of Road	Width of Road	Direction of Travel
(b) (7)(E)			

1.5.1.3 24-Hour Ground Patrols

Generally, the implementation of 24-hour patrols is dependent upon staffing constraints. When agents are available, these patrols operate as described below. In June 1998, 24-hour patrols of the (b) (7)(E) were initiated to address the increase of illegal entries occurring in this region of the Sector. This increase of entries and the impending summer heat prompted this deterrence action to reduce the potential for illegal entrants and associated desert deaths.

During the period of May 23 to September 30, 2001, the (b) (7)(E) Station, in conjunction with the Tucson Sector (b) (7)(E) Station, maintained (b) (7)(E). Beginning

in February 2002 the Yuma Sector has maintained [redacted]

The Yuma and Tucson sectors initiated Operation Desert Grip on May 5, 2002. This has allowed the USBP to establish a 24-hour presence along the international border near the [redacted] Under Operation Desert Grip, two camp detail sites or temporary "stations" have been established, one in the Ajo Station's AO and one in the Wellton Station's AO. The Wellton temporary station is located in the area of the Los Vidrios Trail, at [redacted]. The temporary station consists of a 27-foot camp trailer parked in a disturbed area along an established road. [redacted] have been detailed at the temporary station on [redacted] (INS 2002a). An environmental assessment and emergency consultation under Section 7 of the ESA was conducted for this operation. This operation is being included as part of this BA to comply with the follow up consultation requirement for emergency consultations. The primary purpose of the operation is to assist in identifying and rescuing UDAs and illegal drug traffickers who may be at risk of dying due to overexposure along the U.S.-Mexico border. A secondary purpose of the operation is to reduce illegal immigration and drug trafficking along the border by increasing the USBP's presence in these remote areas. Current USBP operations within this area are minimal due to the distance, time involved to drive to this area, conditions of the roads into the area, and the limited manpower experienced by the Wellton and Ajo (Tucson Sector) Stations. As a result, within the past several years this area has become the route of choice for alien and narcotics smugglers for illegal entry. This area of the border is very remote and numerous walking groups ill-prepared for the 50 to 70-mile journey from the international border to the perceived safety of [redacted] fall victim to the harsh environment of the desert. Smugglers often deviate from established administrative roads (Photo 1-3) and abandon disabled vehicles (Photo 1-4) without regard to environmentally sensitive areas. Operation Desert Grip allows the USBP to detect and deter illegal entry and smuggling, prevent damage to valuable habitat on the CPNWR and Organ Pipe Cactus National Monument (OPCNM), and prevent unwanted deaths.

Photo 1-3
Illegally established road

Photo 1-4
Abandoned vehicle

The number of patrolling actions is dependent upon availability of personnel and vehicles. Operational requirements (that is, the number and location of illegal entries), may require that other locations be patrolled, as the pattern of illegal entries shifts from one area to another.

1.5.2 Helicopter Patrol

The USBP maintains a fleet of (b) (7)(E) helicopters, (b) (7)(E) helicopter, and (b) (7)(E) aircraft, (b) (7)(E) . The Yuma Sector has requested an (b) (7)(E) helicopter and (b) (7)(E) aircraft. It is anticipated that the (b) (7)(E) helicopter may be received in Fiscal Year (FY) 02 or early 03. The (b) (7)(E) helicopter is used for daily patrols and tracking UDAs (Photo 1-5). The (b) (7)(E) is a medium sized helicopter that will be equipped with (b) (7)(E) and capabilities. It will mainly be used for (b) (7)(E) . . The (b) (7)(E) is used for rescue operations only. (b) (7)(E)


Photo 1-5
(b) (7)(E)

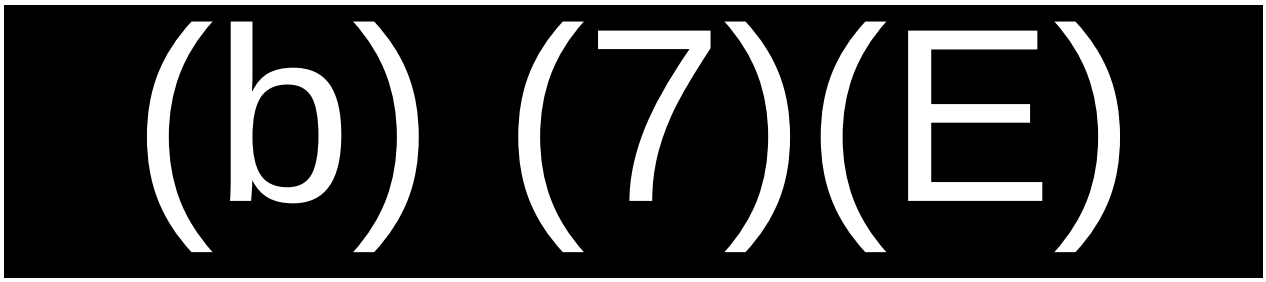
illustrated on Figure 1-3. If activity warrants, (b) (7)(E) may be flown. (b) (7)(E) (b) (7)(E) into the United States, those of stranded tourists requiring assistance, or to avoid Sonoran pronghorn fawning areas. As a conservation measure of the original BO, the Yuma Sector receives weekly Sonoran pronghorn telemetry reports from the Arizona Game and Fish Department (AGFD) and to avoid Sonoran pronghorn concentrations and fawning areas as much as possible. Copies of the telemetry reports were provided to the USFWS, Phoenix Field Office with the Biological Opinion Annual Report for the period September 2000 through December 2001. The helicopter flyovers occur along established dirt roads and trails at an elevation between (b) (7)(E) above the surface (see Figure 1-3). All USBP helicopters are required to operate (b) (7)(E) flight ceiling imposed by the USAF due to military aircraft maneuvers based out of the BMGR. Hovering is done only above indication of "sign" of potential illegal access. Flight times of longer duration are associated with the apprehension of UDAs and contraband such as illegal drugs, and searches and rescues. A typical flight loop is approximately (b) (7)(E) (b) (7)(E) miles of which are within the Sonoran pronghorn range, of which (b) (7)(E) . (b) (7)(E) is over the BMGR.

During the summers of 2000 and 2001 the Yuma Sector has provided air support to the Tucson Sector on a as needed basis for Operation Skywatch. The purpose of Operation Skywatch is to conduct aerial reconnaissance along the U.S.–Mexico Border in the Tucson Sector's AO to detect or rescue UDAs during the extremely hot summer months (May/June to September). Operation Skywatch will commenced in early June of this year and will continue for approximately 125 days. The USBP has proposed to conduct Operation Skywatch annually for the next five years. Environmental assessments were prepared for the 2000, 2001 Operation Skywatch programs. Emergency Section 7 consultation with the USFWS, Phoenix Field Office was initiated for the 2000 Operation Skywatch program. An EA and FONSI have been completed for the 2002 Operation Skywatch program. In addition, INS and the USBP has entered into emergency Section 7 consultation for the 2002 Operation Skywatch program (INS 2002b).

1.5.2.1 Helicopter Refueling at Why

Periodically, helicopters must fly to locations outside the Yuma Sector to refuel when involved in search missions in the eastern portions of the sector. A fuel cell was installed at Why, Arizona, at the Ajo Station (Tucson Sector), because the distance to the Ajo Station is shorter than to the

Wellton Station fuel cell for helicopters (b) (7)(E) of the sector. USBP pilots use a GPS unit in the aircraft to determine which refueling station is closer. The Ajo Station refueling cell is physically located approximately (b) (7)(E) east of the (b) (7)(E) of the Yuma Sector (see Figure 1-1). When flying to refuel at the Ajo Station, pilots must remain below the (b) (7)(E) ceiling mandated by the U.S. Air Force, and generally fly at an altitude of approximately (b) (7)(E) Pilots generally follow the (b) (7) then travel northeast to the fuel cell.

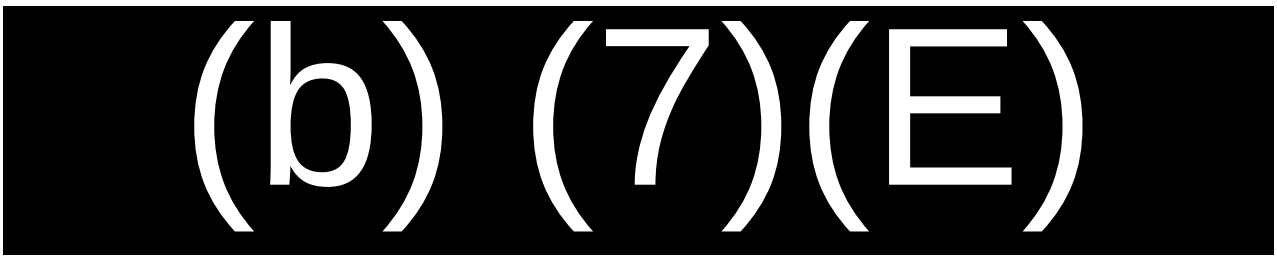


1.5.2.2 Deviations from Typical Helicopter Patrol Route

It is necessary for the USBP to periodically adapt to changes in entry patterns and trends. There are approximately (b) (7)(E) miles of U.S.-Mexico border in the Wellton and Yuma Stations' AO through which people can enter the U.S. illegally, and anywhere along that border can be a potential entry point. (b) (7)(E) . As entry patterns change, so must the areas in which the USBP looks for tracks. USBP pilots also deviate from the typically helicopter patrol route to (b) (7)(E) to the greatest extent practical.

1.5.2.3 Helicopter (b) (7)(E)

(b) (7)(E) . Ground units determine when a helicopter is required. These missions are typically rescues, or situations where aliens are detected in an area that is inaccessible by vehicle or foot. Helicopters also respond t (b) (7)(E) are relatively infrequent. A total of (b) (7)(E) were flown from FY 1997 to FY 2001 with no (b) (7)(E) occurring in FY 2000. FY 1999 was extremely active with (b) (7)(E) occurring during this time. The location of such activity is generally (b) (7)(E) (b) (7)(E) In the case of a rescue, the entry point, route of travel, the weather and physical condition of individuals determine the location of the USBP activity.



1.5.3 Remote Sensor Grid Installation and Maintenance

Currently, the Yuma and Wellton Stations have a total of [redacted] remote sensors at various locations within the Yuma (251) and Wellton (54) Stations' AOs, [redacted] of the U.S.-Mexico border. [redacted] When this shift occurs, an assessment is made as to the best location for installation of a sensor. Usually, these locations are in [redacted] and rarely in any other type of location. Typically, the USBP sensor technicians use a vehicle to travel to these devices; however, for [redacted] in order to reduce time and impacts upon the environment.

1.5.4 Checkpoints

[redacted] are operated by the Yuma and Wellton Stations (Photo 1-6). The Yuma Station checkpoint is located on [redacted] and the Wellton Station checkpoint is maintained on [redacted] The checkpoints are established to inspect vehicle traffic and [redacted] This checkpoint is manned as a special operation and as such is [redacted] Haynes 2002).

Photo 1-6
Vehicle Checkpoint

1.5.5 Infrastructure

Infrastructure is an essential part of the USBP's capabilities to apprehend and detect UDAs and smugglers. Infrastructure can include items that assist in detection such as Remote Video Surveillance (RVS) systems, or that deter entry such as fences and or the use of lights. The following paragraphs discuss the typical infrastructure deployed in the Yuma Sector.

1.5.5.1 Fences and Barriers

Border fences have proven to be an effective deterrent in numerous areas (e.g., San Diego, Naco, Nogales, and Tecate), even though a single fence can be breached (since USBP agents can not protect the south side of the fence). Fences are typically constructed in urban or developed areas, particularly around legal POEs although some barriers and fences have been installed in distant areas. Military surplus steel landing mat fences have been the type of fence most commonly constructed along the border. Fences are generally [redacted] high and usually constructed within [redacted] of the U.S.-Mexico border, although the designs can vary depending

upon the, presence of other natural or man-made physical barriers, local terrain, and the USBP Station's enforcement strategy (Photo 1-7). Currently, The Yuma Station maintains a total length of approximately (b) (7)(E) miles of landing mat fence located on either side of the (b) (7)(E) and approximately (b) (7)(E) miles of landing mat fence at (b) (7)(E).

(b) (7)(E)

Currently, the Yuma Station proposes extending the landing mat fence at the (b) (7)(E) approximately 2.1 miles and constructing 7.4 miles of vehicle barriers. Vehicle barriers are concrete or steel structures placed along the U.S.-Mexico border to prevent drive-through illegal vehicle entries.

1.5.5.2 Remote Video Surveillance (RVS)

Photo 1-8 RVS System

The Yuma Station maintains 16 RVS sites in Arizona, extending west along the border road and (b) (7)(E) The RVS systems include (b) (7)(E) and (b) (7)(E) to send the signals back to the Yuma Station (Photo 1-8). The RVS equipment is mounted on a (b) (7)(E) Currently, the Yuma Station proposes the addition of 10 RVS sites in the general area of the existing RVS sites (Haynes 2002). These additional sites would allow overlap coverage of the U.S.-Mexico border. The photo on the right displays a typical RVS system as described above

1.5.5.3 Stadium and Portable Lights

The USBP uses two styles of lights along the U.S.-Mexico border to aid in the detection of UDAs crossing the border. Permanent, fixed stadium style lights are deployed in areas with utilities; and portable, diesel generator lights are used in remote areas or areas lacking utilities. Currently, 147 stadium-style lights are located along the U.S.-Mexico border in the vicinity of San Luis, Arizona in the Yuma Station's AO. Forty portable lighting systems are also deployed in the same general area.

1.5.5.4 Rescue Beacons

Currently, the Yuma Sector maintains eight rescue beacons in the remote desert regions of the BMGR. Two rescue beacons are located on BMGR – East and six are located on BMGR – West. Six additional rescue beacons are currently proposed for installation on the BMGR – West. The rescue beacons consist of a 30-foot pole mounted on a concrete block approximately 5 feet square and 3 to 4 feet high, which is placed on the ground surface. No excavation is required for the installation of the emergency rescue beacons and the beacons are located in areas void of vegetation. Each pole is illuminated with a flashing beacon to enhance night visibility, and free-mounted mirrors to enhance daytime visibility. Signs in English and Spanish direct people who are in need of assistance to press a red button that will send a signal to the USBP. The USBP will dispatch a helicopter to the location transmitting the signal.

(b) (7)(E)

1.5.5.5 Facilities

The increase in agents assigned to the Yuma Sector office, Yuma Station, and Wellton Station has overwhelmed the existing facilities. Agents are assigned to temporary buildings to meet the sector and stations' needs. A new (b) (7)(E) square feet (ft^2) sector maintenance facility was completed in June 2001. This new facility is located on South Avenue A directly across from the existing Yuma Station in Yuma, Arizona. A new (b) (7)(E) ft^2 sector headquarters is currently being constructed immediately north of the maintenance facility. Construction is expected to be complete in November 2002. A new Yuma Station facility is proposed for construction immediately south of the maintenance facility. The proposed facility will be approximately (b) (7)(E) ft^2. This construction is anticipated to begin in December 2002 (Haynes 2002). A new facility is proposed for the Wellton Station; however, details of the proposed station are not known at this time.

1.5.6 Apprehensions and Rescues

(b) (7)(E)

(b) (7)(E)

Due to the extreme temperatures that exist in this area from May through October and the limited sources of water, any person located during this period is expected to be seriously dehydrated. As a result, it has been the USBP's experience that the results of the tracking operation will not only result in an apprehension, but will likely entail a rescue operation. USBP operational statistics corroborate this assumption. From FY 1999 – FY 2001, over 430 persons have been rescued by the Yuma Sector and over 74 bodies have been found. To help reduce

these fatalities, the USBP distributes informational leaflets to apprehended immigrants and posts signs along known border crossings, alerting immigrants of the dangerous conditions and discouraging their entry. In addition to the public information program, the Yuma Sector has installed eight emergency rescue beacons in the Action Area. The purpose of these beacons is to aid in the rescue of distressed illegal entrants. If a beacon is activated by an illegal entrant in distress, a USBP helicopter will be dispatched to rescue the distressed party. The USBP has also initiated Operation Desert Grip, previously mentioned, to aid in detecting and deterring illegal crossings in a remote section of the Wellton Station's AO near the (b) (7)(E)

1.5.7 Off-Road Pursuit/Apprehension/Rescues

(b) (7)(E)

ff-road pursuit by vehicles on the ground only occurs when it is determined that the persons are likely to be in a specific area or their location is known. Off-road vehicles used in the Yuma Sector include 4-wheel drive vehicles and all-terrain vehicles (ATVs). The Yuma Sector currently has (b) (7)(ATVs (Yuma Station – (b) and Wellton Station – (b)). Because USBP search activities frequently result in locating illegal entrants, off-road apprehensions and rescues are a regular occurrence in the Yuma Sector. However, when USBP vehicles are involved in pursuits on the CPNWR, the vehicles are restricted to administrative roads.

1.5.8 Intra- and Interagency Assistance

1.5.8.1 Assistance to Tucson Sector East of Wellton Station

Any assistance, by ground units, provided to the USBP, Ajo Station, which is in the Tucson Sector, is on a sporadic, as-needed, basis. This assistance rarely occurs more than once or twice per year. As was described in Sections 1.4.2.1 and 1.4.2, Yuma Sector helicopter pilots occasionally refuel aircraft at the Ajo Station and Yuma Sector helicopters are available to assist in search and rescues missions as a part of Operation Skywatch. The fuel cell is utilized to refuel aircraft during a rescue or searching activity in the area. On the rare occasion when ground units have traveled to Ajo looking for stranded persons or UDAs, they have utilized desert roads; such as, the (b) (7)(E) or other administrative roads.

1.5.8.2 Interagency Assistance at Cabeza Prieta NWR

The USBP provides substantial assistance to the AGFD and the USFWS to facilitate their resource protection missions. The USBP provides helicopter support for the CPNWR on an as-needed basis. Repair of the CPNWR communications/repeater system and wildlife water tank inventories are conducted utilizing this support. USBP helicopters were detailed to the CPNWR for a total of 12.5 flight hours in 1999 and 2000 to assist in radio repeater repairs and for 0.5 flight hours in 2000 to recover a motorcycle. The USBP also reports violations (i.e., off-road vehicle use) to the CPNWR and provides monthly reports on incidental wildlife sightings, particularly protected species. The USBP also assists the CPNWR in retrieving collars from Sonoran pronghorn with mortality signals. A USBP helicopter was detailed for 2.4 flight hours on August 30, 2000 to recover a deceased Sonoran pronghorn. This rapid retrieval is essential in determining the cause of death of the animal, as animal carcasses are subject to rapid deterioration and loss due to scavengers.

SECTION 2.0
ALTERNATIVE ANALYSIS

2.0 ALTERNATIVES ANALYSIS

2.1 Introduction

Recognizing that USBP activities have the potential to affect protected species, the USBP assessed possible alternatives as a part of the original BA (February 1999). The original alternatives are carried forward in this document, as well as, additional alternatives which have been added to better represent the scope of USBP activities in the Wellton and Yuma Stations. Each alternative under consideration was evaluated relative to the purpose and need of the USBP operations. The USBP investigated options to eliminate or alter activities to reduce impacts while meeting their objectives and mission. An alternative was assessed for potential implementation and environmental impacts only if it met the objectives mandated by the USBP's mission, which is to detect, prevent, and apprehend persons smuggling illegal materials and/or attempting to enter the U.S. illegally.

2.2 Border Patrol Alternative Activities

2.2.1 Helicopter Patrol

The use of helicopters is essential in patrolling the vast territory in the Wellton and Yuma Stations' AOs. Replacing helicopter patrols with ground patrols would be both impractical and result in a need for an increase in ground presence that would be far less effective in detecting and apprehending UDAs and drug traffickers. Increased ground controls would most likely increase the potential for USBP encounters with the Sonoran pronghorn and other species of concern. The helicopter patrol route has been designed for maximum efficiency (i.e., maximum coverage with minimum presence). However, this route has been modified to avoid the (b) (7)(E) by shifting the return route south of that area, following the September 9, 1997 informal consultation meeting with the USFWS. The new route is longer, but avoids sensitive habitat for the Sonoran pronghorn. In addition, the USBP pilots try to avoid pronghorn concentrations to the greatest extent practical. As part of the original BO (September 2000), the AGFD provides the USBP with weekly telemetry data for the Sonoran pronghorn concentrations in the Wellton Station's AO (USFWS 2000).

A new fleet of (b) (7)(E) helicopters, which would have reduced potential noise impacts, was scheduled to replace the aging (b) (7)(E)s in FY 2000 (INS 1999). Purchase of the (b) (7)(E) helicopters was presented in the original BA and listed in the original BO as a conservation measure to be implemented as part of the BO. Several MD600Ns were purchased by the USBP; however, the USBP decided against replacing the (b) (7)(E) fleet with the (b) (7)(E) because of cost, maintenance, and operational issues that had arisen after the (b) (7)(E) was placed in service. The USBP has not forgone replacing the (b) (7)(E) with a (b) (7)(E) helicopter and is currently evaluating several single engine light duty aircraft as a replacement for the (b) (7)(E). The El Paso Flight Operation will develop aircraft specifications and solicit prospective vendors. Noise levels will be one of the specifications considered during the analysis (INS 2002b).

The USBP has investigated (b) (7)(E) to reduce potential noise impacts. However, (b) (7)(E) is impractical given the (b) (7)(E) imposed by the USAF. Helicopter flights (b) (7)(E) could come into contact with military aircraft which would imperil human life. Additionally, helicopter flights (b) (7)(E)

2.2.1.1 Helicopter Refueling at Why

The Ajo Station in Why, Arizona may be the closest location for a helicopter to refuel, if it is patrolling and/or conducting a search mission in the eastern portion of the Yuma Sector. Requiring a helicopter to remain within the sector and only refuel at the Wellton Station is unsafe, as a crash could occur if the helicopter does not have enough fuel to return to the Wellton Station. Helicopters on their way to refuel at Why are generally flown (b) (7)(E) to reduce potential noise effects on wildlife. However, the pilots must observe the (b) (7)(E) set by the USAF.

2.2.1.2 Deviations from Typical Helicopter Patrol Route

It is necessary for the USBP to periodically adapt to changes in entry patterns and trends. This ability to adapt to the movements of UDAs is critical for the USBP to carry out its mission. Some flexibility is necessary to vary the patrol route as illegal immigrant traffic patterns change. The flight path depicted in Figure 1-3 is the standard patrol route, but slight modifications will occur. USBP pilots avoid Sonoran pronghorn concentrations to the greatest extent practical regardless of the patrol route.

2.2.1.3 Helicopter (b) (7)(E)

(b) (7)(E) are often rescues, or are apprehensions where aliens are inaccessible by vehicle or foot. Elimination of (b) (7)(E) could result in additional deaths or escapes by illegal entrants.

2.2.2 Ground Patrols and Associated Activities

2.2.2.1 Drag Road Preparation and Access Road Maintenance

Access and drag roads are pre-existing roads that are strategically placed for maximum efficiency in locating persons and/or vehicles. The drag roads are prepared on an as-needed basis in response to entry patterns. Drag road preparation, which has been practiced since the 1940's, is essential to determine the location of entries. Without this tool, UDAs could enter the U.S. undetected, and a substantial increase in air patrols and ground patrols would be required to supplant the loss of drag road tracking. Apprehension and rescue times would be increased without drag roads. This would result in increased illegal entries and the increased potential for impact to the species of concern and loss of human life due to the increased disturbance from longer interdiction events and reduced effectiveness, respectively.

Access road maintenance is essential to gain rapid access to the areas of high incidence of illegal border crossings, to facilitate apprehensions and rescues, and to reduce the potential for the loss of human life. Most of these roads are public use roads and all are used by agencies other than the USBP. These roads benefit all users in addition to the USBP. Therefore, USBP maintenance of access roads provides a public service to other users.

2.2.2.2 24-Hour Ground Patrols

In June 1998, 24-hour patrols of the desert east of the Gila Mountains, as well as the 24-hour patrol on (b) (7)(E) in 2001, the deployment of a camp trailer and a two agent patrol at (b) (7)(E) in February, 2002, and Operation Desert Grip in May, 2002 were initiated to

address the increase of illegal entries and drive through traffic occurring in specific regions of the sector. This increase of entries and the impending summer heat prompted these deterrence actions to reduce the potential for desert deaths and drive through traffic in accordance with one of the conservation recommendations contained in the USFWS's BO. Elimination of these activities, as well as the potential for similar operations in the future could result in additional deaths, and would inhibit the function of the USBP to effectively gain control of these regions of the border. In addition, the habitat destroyed by illegal foot and vehicle traffic would increase, specifically in the area of the (b) (7)(E) on the CPNWR.

2.2.3 Checkpoints

Checkpoints allow the USBP to inspect vehicles traveling within the U.S. for UDAs and illegal drugs. They are located along established improved roads and have a minimal impact on the environment. Elimination of the checkpoints would reduce the USBP's effectiveness in apprehending smugglers that have entered the U.S., thus increasing the trafficking of UDAs and illegal drugs within the U.S.

2.2.4 Infrastructure

The use of physical barriers and electronic detection systems is necessary to deter and detect illegal entry and drug trafficking. Infrastructure allows the USBP to better control the U.S.-Mexico Border, while reducing the footprint of the patrol area. This smaller patrol footprint reduces potential impacts to species of concern, associated habitat, and sensitive area. In addition, the increased detection and apprehensions afforded by these systems reduces the environmental impacts resulting from footpaths and roads created by UDAs and illegal drug smugglers and prevents deaths resulting from the harsh desert environment and military training areas.

2.2.4.1 Remote Video Surveillance

RVS systems allow the USBP to monitor activities along the U.S.-Mexico Border on a 24-hour basis, especially in the Yuma Desert (Yuma Station's AO) where the U.S. Marine Air Station's bombing and laser ranges area located. RVS systems also allow the USBP to detect illegal entrants closer to the U.S.-Mexico Border, thus allowing quicker response time by the agents and reducing the search area required to apprehend illegal entrants or drug traffickers. In addition, the RVS system allows the USBP to monitor a larger area with fewer agents, thus reducing the environmental impact of USBP enforcement efforts. Elimination of the RVS system would reduce the effectiveness of the USBP, potentially increasing impacts to the species of concern, their habitat, and the number of deaths associated with harsh desert environment and military ranges.

2.2.4.2 Fences and Vehicle Barriers

Fences and Vehicle Barriers provide a deterrence to both illegal foot and vehicle entries into the U.S. from Mexico. These structures allow the USBP to control the border and reduces the environmental impacts associated with illegal foot and vehicle traffic. Illegal entry has substantially decreased in those areas (i.e., San Diego, Nogales, Naco, Douglas) where fences and vehicle barriers have been installed. Elimination of the current structures or proposed construction and expansion projects would decrease the effectiveness of the USBP and illegal foot and vehicle entries would increase, thus impacting substantial acres of habitat that is inhabited by the species of concern.

2.2.4.3 Lights

Lights along the U.S.-Mexico border afford the USBP agents better visibility at night when entries are most commonly occur. Elimination of lighting along the U.S.-Mexico Border would decrease the ability of the USBP to detect illegal entries at night and decrease the safety of USBP agents and persons attempting to affect an illegal entry. Frequently, border crossers become the victims of border bandits in the immediate vicinity of the border and are routinely subjected to robbery and assault.

2.2.5 Remote Sensor Grid Installation and Maintenance

Remote sensors assist agents with locating and apprehending UDAs. The use of sensors reduces the physical area patrolled and number of patrol agents by helping pinpoint the path of the entrants. Sensors reduce the impact on the environment from patrolling by limiting the footprint of the patrol area. Precise locations of the sensors need to be kept confidential for operational and security purposes.

2.2.6 Apprehensions and Rescues

Apprehension and rescue activities are conducted on a case-by-case basis in response to illegal entry or humanitarian assistance needs, as described in Section 1.4.6. The harsh environment of the desert very often results in the need to rescue individuals, be they illegal entrants or stranded tourists. Between FY1999-FY 2001, approximately 387,344 UDAs have been apprehended, approximately 391 persons have been rescued, and approximately 90 bodies have been recovered by the Yuma Sector. The majority of rescues and deaths were heat related. Without the presence of the USBP and its activities, illegal entries would increase, as would the potential for the loss of human life. To the maximum extent practicable, apprehension and rescue activities conducted on existing roads with helicopter support, which minimizes potential adverse impacts to species of concern and their habitat.

2.2.6.1 Night Activities

Given that 24-hour ground patrols are conducted, apprehension and rescue operations will occur at night. Many illegal entries occur during the night in order to prevent detection. The activities that occur during a nighttime apprehension or rescue are essentially the same as those described in Section 1.4.6. Eliminating nighttime apprehension and rescue missions could result in additional deaths, and would inhibit the function of the USBP to effectively control illegal entries into the United States.

2.2.6.2 Off-Road Pursuit/Apprehensions/Rescues

Off-road travel by USBP 4-wheel drive vehicles and ATVs is sometimes necessary when agents are in pursuit of illegal entrants who have been located, particularly when no aircraft assistance is immediately available. The USBP has considered driving single-file when apprehension activities require off-road travel. However, when following an entry, it is not feasible to drive in a single file fashion. (b) (7)(E) . This method provides the quickest means of identifying the direction of travel persons or vehicles, in those instances where an aircraft is not in the area or available. In the case of humans afoot, this is particularly critical in the extremes of summer heat. (b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

2.2.7 Intra- and Interagency Assistance

2.2.7.1 Assistance to Tucson Sector east of Wellton Station

Periodic assistance to other stations or sectors is a necessary function of the USBP to allow the agency to achieve its mission in the most efficient and effective manner possible. Generally, assistance from the Yuma Sector is required by Tucson Sector no more than once or twice per year. However, with the implementation of Operation Skywatch, additional air support to the Tucson Sector may be required annually during the summer months (May-September 30). Operation Skywatch is proposed for implementation for the next five years (INS 2002c). Impacts associated with the operation activities of the Tucson Sector will be addressed in a separate Biological Assessment.

2.2.7.2 Interagency Assistance at Cabeza Prieta NWR

The Yuma Sector, also provides helicopter support to both the USFWS and the AGFD. Neither of these agencies have readily available helicopters, nor the budget to contract their services or acquire them in the foreseeable future. Assistance is provided to these agencies, on the basis of available resources, in order to protect and manage the desert resources including the species of concern. If the USBP assistance was to cease, the missions of these agencies

would be curtailed. In addition to air support, the Yuma Sector provides technical support with the (b) (7)(E) .

2.3 No-Action Alternative

The no-action alternative involves the cessation of all USBP activities that have the potential to impact threatened and endangered species. These activities include the use of helicopters for patrols; any patrol leaving the sector to refuel or to provide assistance to other stations; the maintenance and use of drag and access roads; ground patrols of any sort (on foot or in a vehicle) that require leaving established paved roads, including search and rescue missions; the use, installation, and maintenance of remote sensors; any type of activity at night, deployment of additional infrastructure.

This alternative would reduce potential impacts to threatened and endangered species by the USBP, due to a decreased chance of encounters between the USBP and species of concern, and less potential for impacts to habitat. However, this alternative would also result in an increased potential for impacts to species of concern due to a greater chance of encounters with illegal entrants, and possible destruction of habitat by illegal entrants or unchecked tourists. In addition, this alternative could not effectively support the interagency assistance activities described above.

This alternative would result in an increase in illegal USBP crossings, which in turn would result in a greater loss of life in the harsh desert and the potential for increased importation of drugs and other illegal contraband, and associated criminal activity. This alternative does not fulfill the mission of the USBP as discussed in the Purpose and Need section. Therefore, this alternative has been excluded from further consideration.

2.4 Preferred Alternative

The mission of the USBP is the prevention and apprehension of UDAs and drug smugglers. If the current USBP operations were reduced or terminated, there would be a significant and immeasurable increase in illegal entries and drug trafficking. These unchecked crossings would in themselves constitute the potential for increased impacts to the species of concern. The (b) (7)(E) example of the habitat damage created by illegal entrants. Rescues are a frequent component of UDA apprehensions, as well as the rescue of tourists during the course of USBP activities. USBP operations are therefore necessary to prevent the loss of human life. Finally, the AGFD and USFWS would be subject to additional burdens if assistance from the USBP were to end. As described above, all of the USBP activities are necessary for this agency to carry out its objectives effectively and efficiently.

Therefore, the preferred alternative includes helicopter patrols flown at (b) (7)(E), 24-hour ground patrols, installation and maintenance of approximately (b) (7)(E) remote sensors, drag preparation of up to approximately (b) (7)(E) miles of drag and access roads, maintenance of approximately 90 miles of access roads, maintenance of infrastructure as described above, and the flexibility to conduct any of these activities at night if necessary and to leave the Yuma Sector for reasons such as refueling or to provide assistance to another Sector. All of these methods and routes of patrol are necessary to detect, deter, and apprehend illegal entrants. Upon detection, methods of pursuit and interdiction must be swift and efficient to successfully apprehend illegal entrants, to deter prospective entrants from attempting illegal entry, and rescue those endangered by the hostile desert environment.

SECTION 3.0
EXISTING CONDITIONS AND SPECIES ACCOUNTS

3.0 EXISTING CONDITIONS AND SPECIES ACCOUNTS

3.1 Existing Conditions

3.1.1 Location and Climate

The Action Area patrolled by Yuma and Wellton Stations is approximately 2,684 square miles in Yuma County, Arizona and Imperial County, California. The Action Area addressed by this BA; however, consists of the (b) (7)(E) , and the cities of Yuma and San Luis, Arizona and is located between (b) (7)(E) and the U.S.-Mexico border. The action area is where (b) (7)(E) occur within the Yuma sector.

The climate of the study area is characterized by low precipitation, hot summers and mild winters, little cloud cover, moderate winds, and low humidity. For areas near the BMGR, mean annual precipitation ranges between 3 and 10 inches (Sellers and Hill 1974, UASRNR 1986). Precipitation follows a bimodal pattern with well-defined summer and winter rainy seasons. Summer storms, which are brief in duration, often produce localized flash floods. Daily temperatures and seasonal variations can be extreme. Mean daily maximum temperatures can be as high as 110^{o} Fahrenheit (F) in July, and mean daily minimum temperatures can be as low as 33° F in January (UASRNR 1986).

3.1.2 Land Use

In addition to the USBP's activities discussed in Section 1.0, the Action Area is used by the military for training purposes and Federal and state agencies for wildlife conservation and recreational purposes. These land uses are described below.

- **Barry M. Goldwater Range (Western Section)**

Historically, the BMGR was comprised of three land sections: BMGR – East, BMGR – West, and the CPNWR. The BMGR was under the authority of the USAF from World War II until 1999. Public Law 99-606 (passed by Congress in 1999) reserved the entire BMGR, including the CPNWR for use by the Secretary of the Air Force. More than 95 percent of the CPNWR had been included in the BMBR since development of the range during World War II (DoD 2001). A 1960 memorandum of understanding (MOU) between military users of the area and the USFWS formally recognized the wildlife management needs of the refuge, and granted the USFWS the authority to control all land uses and access to the refuge. The USAF, and U.S. Marine Corps retained the authority to schedule use of airspace over the CPNWR, which can necessitate concurrent closure of the refuge for safety purposes. This MOU was updated on November 21, 1994, and remained in effect through November 6, 2001. (b) (7)(E) In its administrative capacity, the Air Force confined its scheduling authority and routine training to the eastern portion of the BMGR (BMGR – East), and the overlying restricted airspace areas, but retained overall approval authority for military environmental management and compliance for the entire BMGR. The USAF granted the U.S. Marine Corps Air Station Yuma (MCAS) authority to use and schedule military training in the western portion of the BMGR (BMGR – West). As part of Public Law 99-606, the BLM, through the Secretary of the DOI, was assigned land management jurisdiction fo the entire BMGR (DoD 2001).

On October 5, 1999 the jurisdiction and delegated authority controlling the BMGR was altered with passage of Public Law 106-65. also known as the Military Lands Withdrawal Act (MLWA) of 1999 (DoD 2001). The MLWA reserved the BMGR for use by the Secretaries of the Navy and Air Force respectively. Thus, giving the U.S. Marine Corps use and management of BMGR – West solely under the direct authority of the Department of the Navy, thus eliminating the USAF's administrative oversight for range properties and restricted airspace not directly used to support its mission. The MLWR withdrew and restricted BMGR – East and BMGR – West for military use until 2024, with the option for an extension if there is a military need for the range (DoD 2001). In addition, the MLWR terminated the withdrawal and reservation of the CPNWR as part of the BMGR and assigned land management responsibilities of the BMGR to the Secretaries of the Navy and Air Force rather than the BLM. However, the MLWA provided for low-level military flights of the refuge within corridors designated by the U.S. Marine Corps, USAF, and USFWS and the use of locations within the refuge for electronic instrument sites needed to support military flight training (DoD 2001). Resource management by the military services is provided for under the Sikes Act (16 U.S.C. 670a et seq.) [DoD 2001]. The MLWA and Sikes Act require the BMGR be managed first to support the mission military training mission of the range, second to conserve and protect natural and cultural resource, and third to accommodate public access to the extent that is compatible with the military mission of the range and protection of sensitive natural and cultural resources present on the range (DoD 2001).

Land use by the MCAS (BMGR – West) includes 1,019 miles of all types of roads (e.g., public access and restricted), an airfield complex with three 4,400 foot asphalt airfield runways and a landing control tower; a 6.5 square mile restricted area surrounding an explosive ordinance disposal burn pit; a 30 lane rifle range; a parachute drop zone; and ground support areas (Dames and Moore 1995). These ground support areas encompass a total of approximately 11.4 square miles and contribute to localized extensive habitat disturbance caused primarily by heavy vehicle traffic and equipment tracks and foot traffic of up to hundreds of troops (USFWS 1996). The Cannon Air Defense Complex is just outside the assessment area to the northwest. Military use of the BMGR restricts other human activities such as mining, livestock grazing, and urban development.

Non-military uses of the BMGR include backcountry driving, picnicking, hunting, hiking, backpacking, camping, horseback riding, and sightseeing. Of these, vehicle-based camping, backcountry driving, and sightseeing are the BMGR most popular recreational activities on the BMGR (MCAS 1996).

Camping is allowed in all portions of the BMGR that are not posted closed, restricted for resource protection purposes, or within 0.25 mile of wildlife water sources. Self-contained or vehicle camping is allowed within 50 feet of designated or established roads (MCAS 1996). Much of the backcountry driving and sightseeing occurs along the El Camino Del Diablo, a historic trail that crosses Organ Pipe National Monument, the CPNWR, and the BMGR. The El Camino Del Diablo has been listed in the National Register of Historic Places and has been established by the BLM as a backcountry byway. No surface disturbance is allowed within 0.25 mile of the road.

- **Cabeza Prieta National Wildlife Refuge**

The CPNWR, which is managed by the USFWS, is approximately 860,010 acres in size. Approximately 822,000 acres underlie BMGR airspace (MCAS 1995). Land use within the CPNWR is restricted to those activities that are compatible with the purpose of the Refuge, which is to conserve native habitats and wildlife species under the administration of the USFWS, with the provision of wildlife-oriented recreational activities being a secondary objective. Approximately 90 percent of the CPNWR was declared a wilderness area under the 1990 Arizona Wilderness Act.

In 1987, the USFWS entered into a cooperative interagency agreement with the INS, USBP regarding permissible activities by that agency within the CPNWR. The MOU was updated on November 12, 1999 and a copy was included as part of the BO annual report submitted to the USFWS on April 10, 2002 (Appendix C).

A valid Refuge Entry Permit and a Military Hold Harmless Agreement is required for non-military use of the CPNWR. Permission for access to the CPNWR is obtained through the USFWS. Vehicles are restricted to established roads. Recreational activities include hiking, photography, wildlife observation, and camping. Hunting is permitted for bighorn sheep only in accordance with hunting seasons and regulations of the AGFD. The CPNWR reports about 2,500 visitors annually. All on-the-ground entry or use of the Refuge by the military can occur only with written approval from the USFWS, except in the case of the rescue of downed aircrews.

- **U.S. Border Patrol**

The Action Area described in this BA includes (b) (7)(E) While operating on the BMGR and CPNWR, the USBP will comply with existing and revised natural resource management guidance established by these Federal landholder to the maximum extent possible in an effort to avoid and minimize impacts to threatened and endangered species and the environment. Currently, the USAF and MCAS are preparing a Integrated Natural Resources Management Plan (INRMP) for the BMGR and the USFWS is preparing the CPNWR Comprehensive Conservation Plan for the CPNWR. Until the INRMP is completed, natural resource management on the BMGR will continue under the guidance provided by the Goldwater Amendment to the BLM's Lower Gila South Resource Management Plan (USFWS 2001a).

3.1.3 Habitat Types

The Action Area is located within the Basin and Range physiographic province, which is typified by broad alluvial valleys between relatively isolated mountain ranges and uplands (Turner and Brown 1982). The vegetation community of the (b) (7)(E) of the BMGR has been classified as the lower Colorado River Valley subdivision of Sonoran desertscrub (Turner and Brown 1982, USFWS 1996). The Arizona Upland subdivision of Sonoran desertscrub is found on the CPNWR, and in the Cabeza Prieta and Tinajas Mountains (MCAS 1995).

- **Lowland Habitats- Valleys**

Lowland habitats include alluvial valleys and sand dunes. Vegetation in the valleys, particularly in the Yuma Desert, is dominated by the creosote bush *(Larrea tridentata)* white bursage

(Ambrosia dumosa) series of Sonoran desertscrub (Turner and Brown 1982, USFWS 1996). This series occupies approximately 75 percent of the non-mountainous terrain of the BMGR (Reichenbacher and Duncan 1989). In the San Cristobal Valley, white bursage occurs as the dominant plant without creosotebush (Dames and Moore 1995).

- **Sand Dunes**

Sand dunes exhibit distinctive floras, particularly in the Yuma Desert west of the Tinajas Altas Mountains, at Pinta Sands, and at the Mohawk Dunes (USFWS 1996). The Mohawk Dunes support an association of white bursage, big galletta grass *(Hilaria ridgida),* and Mormon tea *(Ephedra trifurca).* Other species associated with the dune system include desert dicoria *(Dicoria canescens),* Schott's wire lettuce *(Stephanorneria schotti),* creosotebush, Spanish needles *(Palafoxia arida*), dune indigo *(Dalea parryi)*, and three-awn grass *(Aristida* spp.) (Reichenbacher and Duncan 1989).

- **Washes and Microphyll Woodlands**

A habitat type characteristic of washes and drainages in the Action Area are known as microphyll woodlands, which are part of the mixed scrub series of Sonoran desertscrub. These occur along the edges of large washes such as Fortuna Wash and Coyote Wash (Dames and Moore 1995, USFWS 1996). The vegetation consists of taller trees and shrubs including blue paloverde *(Cercidium floridum),* ironwood *(Olneya tesota),* and smoke tree *(Dalea spinosa).* Other common species include chuperosa *(Beloperone californica),* burro bush *(Hymenoclea monogyra* and *H. salsola),* parish viquiera (*Viquiera deltoidea)* and big galleta grass (Reichenbacher and Duncan 1989).

- **Upland Habitats**

Upland habitats occur in the mountain and foothill regions of the Action Area. These include the (b) (7)(E) .
These rocky upland areas support vegetation that is of the mixed scrub series, and which is more representative of Arizona Upland and Central Gulf Coast subdivisions of Sonoran desertscrub (USFWS 1996). Elements of these habitat types are present including paloverde *(Cercidium floridum* and *C. microphyllum),* catclaw acacia (*Acacia greggii*), saguaro *(Carnegia gigntea),* elephant tree *(Bursera microphylla),* limber bush *(Jatropha cuneata),* agave *(Agave* spp.), chain fruit cholla (*Opuntia fulgida*), and teddy bear cholla (*Opuntia bigelovii*).

- **Sonoran Riparian Deciduous Forest**

This habitat type occurs along the (b) (7)(E) of the Action Area. Species include Fremont cottonwood (*Populus fremontii* var. *macdougalii*), Goodding willow (*Salix gooddingii* var. *variabilis*), common reed (*Phragmites australis*), and saltcedar (*Tamarix chinensis*) (Brown 1994). Agriculture and development has reduced the once extensive acreage of this habitat. This habitat is isolated to within a(b) (7)(E) in the Action Area.

- **Agriculture**

Most of the Action Area (b) (7)(E) has been cleared and irrigated for agricultural production. Row crop vegetables such as lettuce, cauliflower, broccoli are produced in these areas. Yuma, Arizona is the largest producer of winter lettuce in the U.S.

3.2 Species Accounts

The following accounts provide background information on each species of concern, including their distribution, habitat preferences and requirements, general ecology, and threats to their continued existence.

Table 3-1 list species, as identified by the USFWS Ecological Services Field that potentially occur in the Action Area. With the addition of the flat-tailed horned lizard, these are the same species covered in the original BA (INS 1999). During a February 26, 2002 meeting with USFWS, the USFWS requested the flat-tailed horned lizard be analyzed as part of the re-initiation BA as it does occur in the Action Area and is currently proposed for Federal listing as threatened (Appendix B). The potential for any of these species to be found within the Action Area is addressed below. The potential effects of USBP activities on any of these species is discussed in Section 4.0.

3.2.1 Sonoran Pronghorn

- **Biology**

The Sonoran pronghorn *(Antilocapra americana sonorienses)* is recognized as a distinct subspecies of the American pronghorn *(Antilocapra americana).* It is distinguished from other subspecies by its small size, pale coloration and distinctive cranial features (Goldirnan 1945*).* In contrast to the northern subspecies of pronghorn, the Sonoran does not congregate in large groups at any time of the year. There is not a tendency for size or composition of herd units to vary through the year, as observed with the American pronghorn (AGFD 1981).

The Sonoran pronghorn become sexually mature at 12 to 16 months of age. Sonoran pronghorn mate from July to September, and give birth from February through May (USFWS 1998). Sonoran pronghorn grow to approximately 3.3 feet (1 meter) in height and weigh from 75 to 140 pounds (34 to 64 kilograms). They are among the fastest mammals on earth and can maintain speeds of 40 miles per hour (mph), reaching 60 mph in short bursts.

The diet of Sonoran pronghorn consists of a variety of plant materials. Sonoran pronghorn have been observed eating triangle-leaf bursage (*Ambrosia deltoidea)*, chain fruit cholla, mesquite *(Prosopis velutina)*, and mistletoe (*Phorandendron* spp.) [USFWS 1998]. The fruit of cholla constitutes a large portion of the Sonoran pronghorn diet. They have been observed eating cholla fruit 70 percent of the time (USFWS 1998). Other plant species utilized by the Sonoran pronghorn includes: false filaree (*Erodium texanum*), poverty weed (*Monolepsis nuttalliana*), wooly plantain (*Plantago inularis*), wild carrot (*Daucus pusillus*), and Arizona blanket-flower (*Gaillardia arizonica)* [USFWS 1998]. A fecal analysis conducted from July 1996 to June 1991 indicates the following plant species are heavily used by the Sonoran pronghorn: careless weed (*Amaranthus palmeri*), ragweed (*Ambrosia* sp.), *Astraglus* spp., brome grass (*Bromus* spp.), broom snakeweed (*Guterrezia sarothrae*), and chain fruit cholla (USFWS 1998).

Table 3-1: Federally-Listed Species with Potential to Occur in Action Area within Arizona

Common Name	Latin Name	Federal Status	State Status
Sonoran pronghorn	*Antilocapra americana Sonorensis*	E	WC
Lesser long-nosed bat	*Leptonycteris curasoae yerbabuenae*	E	WC
Cactus ferruginous pygmy owl	*Glaucidium brasilianum caclorum*	E	WC
Nichol's turk's head cactus	*Ecinocactus horizonthalonius nicholii*	E	Protected[2]
Southwestern willow flycatcher	*Empidonax traillii extimus*	E	WC
Bald eagle	*Haliaetus leucocephalus*	T	WC
Brown pelican	*Pelecanus occidentalis*	E	Not Listed
Yuma clapper rail	*Rallus longirostris yumanensis*	E	WC
Razorback sucker	*Xyrauchen texanus*	E	WC
Flat-tailed horned lizard	*Phrynosoma mcallii*	PT	WC

E – Endangered; T – Threatened, PT – Proposed Threatened.
WC – AGFD has only listing designation, "Wildlife of Special Concern".
SC – Special Concern: The USFWS has proposed the flat-tailed horned lizard listing as threatened.
Protected[2] – Protected under Arizona Native Plant Law.

The importance of the availability of water sources to Sonoran pronghorn is unknown. Hughes and Smith (1990) found no significant difference in distance of Sonoran pronghorn localities to water between the wet and dry seasons, implying that they do not congregate near water. Hughes (1991) found that Sonoran pronghorn used habitat randomly in relation to water sources. However, Sonoran pronghorn have been photographed at the HE Hill Tank, Little Tule Well, and at a natural tank in OPCNM (INS 1999). Monson (1968) found no evidence that pronghorn drink water, even when it is available. Wright and deVos (AGFD 1986) and Hervert (pers. comm. 1996) have documented Sonoran pronghorn at water sources on numerous occasions, but have only documented one instance of a Sonoran pronghorn drinking water. Studies have found that the fruit of chain fruit cholla are major source of water for the Sonoran pronghorn during hot, dry conditions (USFWS 1998).

- **Habitat**

Sonoran pronghorn inhabit the broad alluvial valleys of the Sonoran Desert, which is an extremely harsh environment subject to extended drought. They inhabit creosote bush-bursage vegetation communities year round and more diverse vegetation associations from late winter to early fall (USFWS 1996). Hughes and Smith (1990) found Sonoran pronghorn in areas of approximately 11 percent perennial cover. Visibility is a key factor in determining habitat use by Sonoran pronghorn, which prefer more open sandy areas and low hillsides with a variety of palatable forage (AGFD 1981). Pronghorn are not distributed evenly throughout their habitat, as available forage is another dominant factor influencing distribution (AGFD 1981). Winter rainfall results in early spring growth of annual and perennial vegetation on normally dry sandy areas. Summer storms in July and August stimulate new plant growth for the pronghorn. In early fall, pronghorn are found on the upper slopes or bajadas of desert mountains, where forage is abundant until November or December (AGFD 1981).

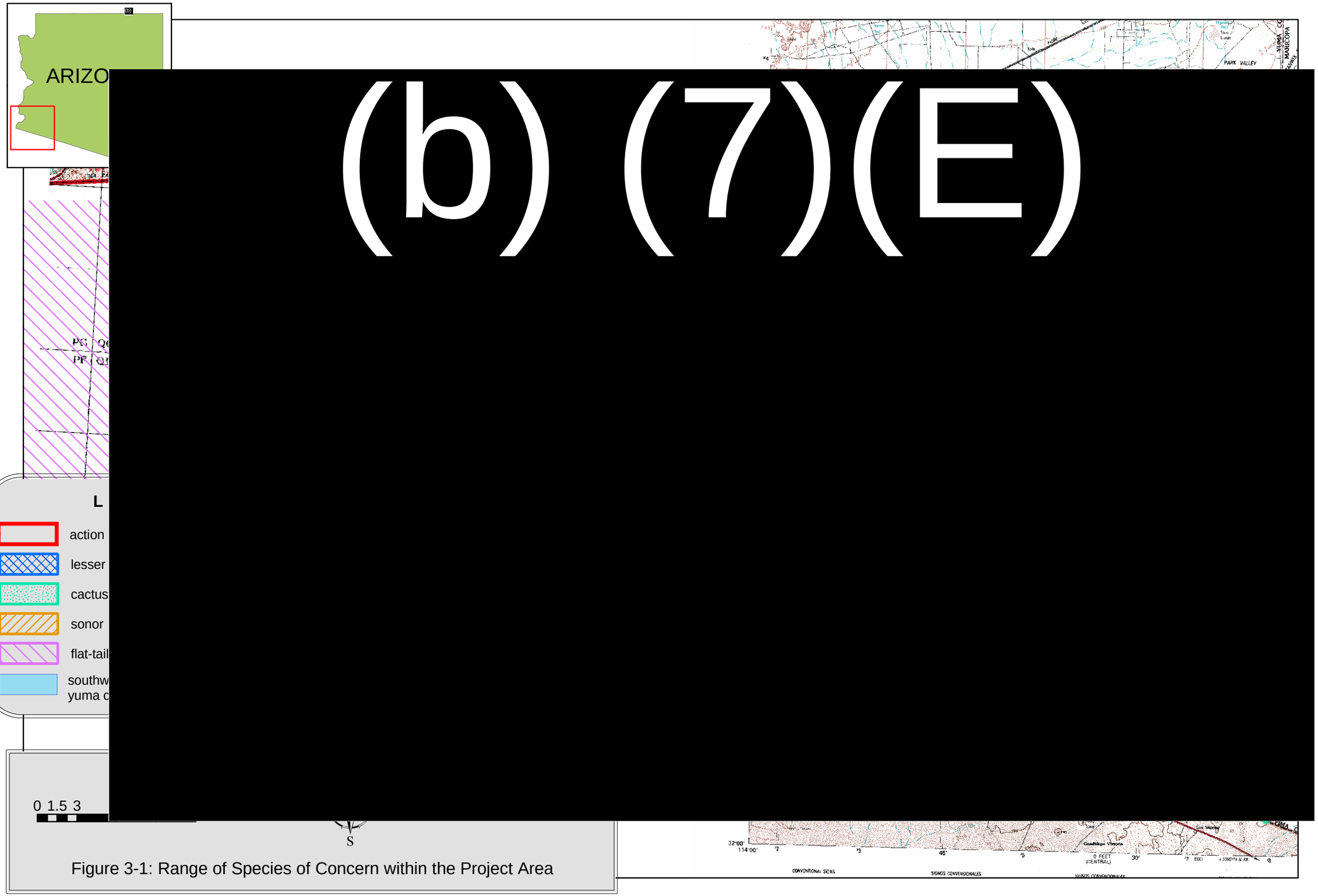
- **Distribution and Range**

Sonoran pronghorn range from the plains of central and western Sonora, Mexico north to southwestern Arizona (AGFD 1986). In Arizona, Sonoran pronghorn occur on the CPNWR, the BMGR, and OPCNM, from Highway 85 west to the Cabeza Prieta Mountains and from approximately the Wellton-Mohawk Canal south to the U.S.-Mexican border (Snow 1994, USFWS 1982). Recent unconfirmed sightings suggest that some animals may also occur on the Tohono O'odham Reservation and in the Lechuguilla Desert, west of the Cabeza Prieta Mountains (USFWS 1996). In Sonora, Mexico, the Sonoran pronghorn is known from near Sonoyta south to the Puerto Penasco area, east to the sandy plains around Bahia de San Jorge, and west into flats surrounding the Sierra de Pinacate (USFWS 1996). The current range of the Sonoran pronghorn is estimated at more than 4.9 million acres (USFWS 1996). Historically, the range of the Sonoran pronghorn may have been much larger, extending further west, possibly into the Yuma Desert, Imperial Valley of California, and northeastern Baja California; to north of the Gila River; east to the Baboquivari Mountains; and south to Bahia Kino or Huayinas (Hall and Kelson 1959, Hoffmeister 1986). However, precise determination of the historic range is precluded by a lack of specimens and the largely anecdotal nature of historic records. In addition, the subspecies was not described until 1945, many years after the population had declined and marginal populations were extirpated (AGED 1986). During an international boundary survey from 1892-1894, Sonoran pronghorn were seen in every open valley from Nogales, Mexico to Yuma, Arizona. Ajo Valley supported a large population, and Sonoran pronghorn were frequently seen along El Camino Del Diablo (AGFI) 1986). The Pinta Sands and the Tule Desert adjacent to the Mexican Border have been identified as sensitive areas for Sonoran pronghorn (USFWS 1996). The range of the Sonoran pronghorn within the Action Area is illustrated in Figure 3-1.

- **Status and Threats to the Species**

The Sonoran pronghorn was listed as an endangered species on March 11, 1967 (32 FR 4001). Review of the literature indicates that historic population declines and localized extirpation are attributable to previous unregulated hunting, current illegal hunting in Sonora, degradation of habitat by livestock grazing, disturbance of habitat resulting from military ground-based activities, loss of riparian habitat on the Gila River and the Rio Sonoyta, and conversion of habitat to agriculture, particularly in the Gila River Valley and Imperial Valley, California (deVos 1990; USFWS 1982, 1996).

Based on the Sonoran pronghorn aerial survey for 2000 it appears the population in the United States has decreased 30 percent from the 1998 survey population (142 individuals [Bright 2001]). Currently, the size of the Sonoran pronghorn population in the United States is estimated at 50 to 80 animals (Bright et al. 2002). The large population decline appears to be directly correlated with the lack of rainfall for most of the past six years (Hervert et al. 1996). There has been little fawn recruitment during this time period; in three of the last six years no surviving fawns were observed. Past drought conditions have had severe impacts on the Sonoran pronghorn population in the United States (Hervert et al. 1996). In 1995, there was abundant rainfall in the spring. Productivity of Sonoran pronghorn was between 1.0 and 1.4 fawns per doe. In July, the ratio of fawns to does was as high as 50/100. However, as drought conditions set in from July to December (1995), most fawns died. Recruitment was 12 fawns per 100 does. Drought conditions continued in 1996. Productivity was only 0.33 fawn per doe.



(b) (7)(E)

Figure 3-1: Range of Species of Concern within the Project Area

The fawns that were produced died very quickly. The AGFD could not detect a single fawn surviving in the United States population in 1996 (i.e., recruitment was zero). In 1998 rainfall was above average and good fawn recruitment (33 fawns per 100 does [Hervert et al. 2000]) was observed (Bright et al. 2001). Rainfall in 1999 was 2.17 below average and no fawns were known to have survived by December (Bright et al. 2001). The spring of 2000 was also dry (2.6 inches below average) and fawn recruitment was again low. Fawn recruitment was estimated at 14 fawns per 100 does in 2000 (Bright et al. 2001). As of August 2002, it is assumed that most of the fawn recruitment for 2002 has been lost as a result of low rainfall. The status of the 2002 fawn recruitment will not be known until December 2002 (Bright et al. 2002).

Adult mortality has also been very high in the winter drought periods. Between November 1995 and June 1996, 50 percent of individuals that had previously been radio-collared succumbed. The majority of these may have been related to predation which, in turn, may have been influenced by drought conditions. Of the 22 Sonoran pronghorn that were collared in the last three years, 14 have died.

Another factor in the large population decline observed during the 2000 survey may be the advanced age of the population (Bright et al. 2001). Mortality among radio-collared adult Sonoran pronghorns has averaged 22 percent over the last six years, while fawn recruitment has averaged 10 fawns per 100 does. Based on population survey numbers, fawn recruitment success over the last six years, and a male to female ratio of 63:100, approximately 61 percent of the population is greater than 6 years old. Based on these numbers, over half of the current population can be expected to die in the next several years, even with good rainfall and range conditions (Bright et al. 2001). During the first eight months of 2002, the adult mortality rate has been observed to be 66 percent (Bright et al. 2002). As can be seen from the 2000 survey, good fawn recruitment the next few years is essential to maintain the Sonoran pronghorn population in the United States.

Sonoran pronghorn numbers have been greatly reduced in a very short period of time, and a combination of factors could act in a way to reduce the numbers further to a population where the subspecies cannot recover. This critical population number has been estimated to be 50 individuals (Hervert et al. 1996). Currently, the Sonoran pronghorn populations is very close to reaching the critical population with the lack of fawn recruitment and high adult mortality in 2002 the population could potentially reach or decline below the critical population.

- **USFWS Recovery Plan**

The USFWS initialized a recovery plan for the Sonoran pronghorn in 1982. The recovery objective was defined as “maintain existing population numbers and distribution of Sonoran pronghorn while developing techniques which will result in a U.S. population of 300 animals (average for a five-year period) or numbers determined feasible for the habitat” (USFWS 1982). The recovery plan underwent a revision in 1998. The final plan calls for down listing the Sonoran pronghorn to threatened when there is an estimated 300 adults in one self-sustaining population in the U.S. that remains stable for a minimum of five years, or when numbers are determined to be adequate to sustain the population through time; and at least one other self-sustaining population is established in the U.S. (USFWS 1998).

3.2.2 Lesser Long-nosed Bat

- **Biology**

The lesser long-nosed bat *(Leptonycteris curasoae yerbabuenae)* is a medium-sized bat that has a distinctively elongated nose with a leaf-shaped tip. The bat's long muzzle and tongue are adaptations that allow it to collect nectar from the flowers of columnar cactus, such as the saguaro and organ pipe *(Lemaireocercus thurberi),* and from paniculate agaves (USFWS 1996). They appear to need no standing water, surviving on water from fruits and flower nectar (Petryszyn and Cockrum 1990). In general, foraging takes place from dusk to dawn during the months of May through September.

Lesser long-nosed bats migrate into Arizona in the spring starting in early April, apparently following the flowering of columnar cacti (Dalton and Dalton 1993). When they arrive, the females are pregnant and congregate in maternity colonies while males occupy separate roosts. The young are born between early May and late June. They migrate south in the fall, leaving Arizona in September or early October. Their fall migration appears to be linked to the flowering of the agave (Dalton and Dalton 1993).

- **Habitat**

In Arizona, the lesser long-nosed bat is found during the summer within desert grasslands and scrubland (Hoffmeister 1986). Maternity colonies are formed at lower elevations near concentrations of flowering columnar cacti. After the young are weaned, some females and young move to higher elevations, primarily in the southeastern parts of Arizona near concentrations of blooming paniculate agave (USFWS 1996). During the day, they roost in mine tunnels and natural caves. Potential food resources and roost sites occur in some areas of the western portion of the BMGR. However, the very low numbers of saguaros and agaves in this area greatly reduces roosting potential relative to areas further east where suitable foraging habitat exists (Dalton and Dalton 1993).

- **Distribution and Range**

This species of bat is found throughout its historic range from southern Arizona, through western Mexico, and south to El Salvador. It occurs in southern Arizona from the Picacho Mountains southwest to the Agua Dulce mountains and southeast to the Chiricahua Mountains and south to Mexico (USFWS 1996). Of the approximately 12 known major maternity roosts throughout their range in Central and North America, there are only three verified major maternity roosts of this species in the U.S., all of which are in Arizona (Cockrum 1991).

The Action Area is west of what is considered to be the known primary range of the bat. A small portion of the bat's range occurs in the southeast corner of the Action Area. However, the range delineation is based on roost records, and roosts of this bat are difficult to find. The bats can travel up to 30 miles from their day roost while foraging (USFWS 1996). The Action Area contains potential foraging habitat for the bat, and the Action Area may occur within the foraging range of the bat (USFWS 1996), but there are no known locations of the bat on the BMGR outside of the CPNWR (Dalton and Dalton 1993). The closest records of the bats to the Action

Area are maternity colonies in the Growler and Slate Mountains and roosts in the Agua Dulce Mountains within the CPNWR (Dalton and Dalton 1993). The range of the lesser long-nosed bat within the Action Area is illustrated on Figure 3-1.

- **Status and Threats to the Species**

The lesser long-nosed bat was listed (originally, as Sanborn's long-nosed bat) as endangered on September 30, 1988 (53 FR *38456).* No critical habitat has been designated for this species. Loss of roost and foraging habitat, interdependence with its food resources, and direct taking of individual bats during animal control programs, particularly in Mexico, have contributed to the current status of the species (USFWS 1996). This species is particularly vulnerable due to the fact that pregnant females concentrate their numbers by roosting in only a few sites. Thus, destruction of a single major roost could have serious impacts on the entire species (Henshaw 1972). However, a study of the status of the bats concluded that current population levels in the northwestern part of the species range have not decreased significantly during the past 25 years, and that numbers may have actually increased over the past 100 years due to the increase in availability of mine sites for roosting (Cockrum and Petryszyn 1991).

The species appears to be sensitive to human disturbance. Instances are known where a single brief visit is sufficient to cause a high proportion of lesser long-nosed bats to temporarily abandon their day roost and move to another. Perhaps most disturbed bats return to their preferred roost in a few days. However, the sensitivity suggests that the presence of alternate roost sites may be critical when human disturbance occurs. The effect of overflights and low-level routes on foraging bats is largely unknown. The USFWS expressed concern that a proposed low-level helicopter corridor by the U.S. Marine Corps through the southern end of the Growler Mountains could cause disturbance to a nearby maternity roost in that mountain range (USFWS 1996). However, a study of the effects of low-level military overflights on lesser long-nosed bats determined that noise levels were greatly reduced within bat roosts. There was no protracted alteration of their behavior observed or evidence of acute distress (Dalton and Dalton 1993).

3.2.3 Cactus Ferruginous Pygmy-owl

- **Biology**

The cactus ferruginous pygmy-owl *(Glaucidium brasilianum cactorum)* is one of three subspecies of the pygmy-owl. It is the only North American subspecies of this owl (Aigner and Koehler 1997). It is a small (less than 7 inches long, 2.2-2.6 ounces), diurnal owl that is non-migratory throughout its range. The pygmy-owl's diet includes birds, lizards, insects, small mammals and frogs. This species begins nesting activity in late winter to early spring. It nests in cavities found in trees or large columnar cacti. Cavities may be naturally-formed (e.g. knotholes) or excavated by woodpeckers; the owl does not construct its own nest holes (Duncan 1998). Three to five eggs are laid and incubated for approximately 28 days. The young fledge about 28 days after hatching.

- **Habitat**

In Arizona, cactus ferruginous pygmy-owls are known to occur in streamside riparian forests and mesquite bosques, as well as in Sonoran desertscrub associations representative of the

Arizona Upland subdivision. The streamside associations include species such as willow *(Salix* spp.), ash *(Fraxinus* spp.*),* cottonwood*,* and/or velvet mesquite *(Prosopis vélutina).* The Sonoran Desertscrub associations are composed of relatively dense saguaro cactus stands associated with short trees such as paloverde, mesquite, and ironwood, with an open understory of triangle-leaf bursage*,* creosotebush, and various other cacti and shrubs. Unifying habitat characteristics among these communities are fairly dense woody thickets or woodlands with trees and/or cacti large enough to provide nesting cavities, structural diversity of the vegetation, and an abundance of prey (USFWS 1996b, Duncan et al. 1998).

Pygmy-owls found in Sonoran desertscrub are typically associated with structurally diverse stands of desert riparian scrub with saguaros along washes. There is no permanent flow in these washes; instead flow is intermittent based on seasonal rainfall as well as strength and duration of individual storms. Desert riparian scrub vegetation is easily recognizable by the presence of a linear assemblage of trees and shrubs. These plants are denser and taller than the sparse desertscrub vegetation that typically exists in the adjacent uplands. Throughout its range, the pygmy-owl occurs at low elevations, generally below 4,000 ft (USFWS 1996b). None of the formerly proposed critical habitat delineated for the pygmy-owl occurs within the BMGR, including the CPNWR (USFWS 1999).

- **Distribution and Range**

The cactus ferruginous pygmy-owl occurs in lowland areas from central Arizona south through northwestern Mexico, and from southern Texas along the lower Rio Grande River and coastal plain south through northeastern Mexico. The pygmy-owl's elevational distribution, the distribution of habitat, and recorded locations indicate that these eastern and western ranges are geographically isolated from one another and are ecologically distinct (USFWS 1996b). In the U.S., the eastern and western portions of the pygmy-owl's range are separated by the basin-and-range mountains and intervening Chihuahuan Desert basins of southeastern Arizona, southern New Mexico, and western Texas.

In Arizona, the owl has been historically documented from as far north as New River and Cave Creek in northern Maricopa County. Elsewhere in Maricopa County the species has been found west near the Yuma County line along the Gila River at Agua Caliente, as well as along the Salt River at Phoenix and near the Verde River confluence. The eastern-most record was along the Gila River near the present-day community of Fort Thomas in Graham County. Elsewhere in the southeastern part of the state, the species has been documented near Dudleyville along the lower San Pedro River. Near the Mexican border the species has been found in Santa Cruz County near Patagonia and in Sycamore Canyon west of Nogales. Records for Pima County exist from the Santa Cruz River and its tributaries near Tucson, and in southwestern Pima County at OPCNM and Sasabe. One sighting of the owl was recorded in 1955 at Cabeza Prieta Tanks in the CPNWR, Yuma County (Monson and Phillips 1981, Monson 1998). Present-day owl locations have been documented in Pima and southern Pinal Counties. These owls inhabit areas within OPCNM, Buenos Aires NWR (BANWR), Tohono O'odham Nation, and privately-owned lands in the northwest Tucson area and southern Pinal County (Duncan 1998).

The Action Area overlaps portions of the historic range of the western population of the cactus ferruginous pygmy-owl (USFWS 1996). Surveys were conducted at the Bryan Mountain/Monreal Well, the Agua Dulce Mountains, and Growler Peak on the CPNWR in 1993

and 1994. No cactus ferruginous pygmy-owls were detected (USFWS 1996). Unconfirmed detections of cactus ferruginous pygmy-owls were reported from the Johnson Well area of the Sand Tank Mountains in 1992 and 1994, and from the East Tactical Range in 1995 (USFWS 1996). Low-level helicopter flight corridors of the BMGR and CPNWR were surveyed in 1997, and again no cactus ferruginous pygmy-owls were detected (Aigner and Koehler 1997). A 1-day survey of the area in July 1998 detected no pygmy owls, and identified only marginal cactus ferruginous pygmy-owl habitat (Duncan 1998- Appendix E). While there are no confirmed current records for cactus ferruginous pygmy-owl within its boundaries, the Wellton Station's AO does overlap historic habitat and contains potentially suitable habitat for cactus ferruginous pygmy-owls (USFWS 1996). The range of this species within the Action Area is shown in Figure 3-1.

- **Status and Threats to the Species**

The Arizona population of the cactus ferruginous pygmy-owl, numbering only 19 known individuals (Bauer 1997), was classified as an endangered species in 1997 under the Endangered Species Act on March 10, 1997 (62 FR 10730). Critical habitat (730,000 acres) for this species was delineated in 1999 (Federal Register 64(132): 37419-37440); however, in 2001 a ruling in U.S. District Court removed the critical habitat designation for the cactus ferruginous pygmy-owl (Center for Biological Diversity 2001). The ruling was the result of a suit filed by the Southern Arizona Homebuilders Association, the National Association of Homebuilders, and the Homebuilders Association of Southern Arizona in 2000 (Center for Biological Diversity 2001). The cactus ferruginous pygmy-owl was sent into decline by the loss and degradation of riparian habitat and competition for nest sites with European starlings. Historically, riparian forests were destroyed following the clearing of mesquite and cottonwood for domestic and industrial fuel wood. In recent decades, the cactus ferruginous pygmy-owl's riparian habitat has continued to be modified and destroyed by agricultural development, woodcutting, urban expansion, livestock grazing, and general watershed degradation. In addition, the diversion and channelization of natural watercourses and groundwater pumping are likely to have reduced cactus ferruginous pygmy-owl habitat (USFWS 1996b). The largest cactus ferruginous pygmy-owl populations still in existence in Arizona are mostly associated with Arizona Upland Sonoran Desertscrub habitats. Some of these habitats are currently impacted by localized urbanization (Duncan 1998).

In 1999 a total of five Federal and state agencies (USFWS, USFS, BLM, AGFD, and Pima County) funded a survey that covered 226,068 acres which is almost three times surveyed under the 1998 USFWS contract. A total of 74 to 78 cactus ferruginous pygmy-owls were observed in Alter Valley, Northwest Tucson, Pinal County, and OPCNM (Huckleberry 1999).

3.2.4 Flat-Tailed Horned Lizard

- **Biology**

The flat-tailed horned lizard *(Phrynosoma mcallii)* is a moderate-sized (2-3 inches), gray, tan, reddish-brown, or whitish horned lizard with a narrow middorsal stripe from the head to the base of the tail and a prominent dorsoventrally flattened tail. The two largest head spines (occipital) are very long (3-4 times longer than their basal width) and do not contact each other at the base. Three shorter, lateral (temporal) spines are present on each side of the head. The

undersurface is white without any markings or spots (CDFG 1994). Unlike other iguanid lizards, the flat-tailed horned active lizard burrows in the sand to avoid detection rather than fleeing (Foreman 1996). They are active throughout the day, except during the extreme summer temperatures when activity is bimodal (morning and evening). The flat-tailed horned lizard is an obligatory hibernator and it is suspected that reduced food availability, as well as decreasing photoperiod and lower metabolic rate resulting from decreased temperatures triggers hibernation. Adults cease to eat in the fall regardless of temperature. Winter dormancy occurs between mid-November through mid-February in California (Foreman 1996). Flat-tailed horned lizards hibernate in burrows that are rarely dug deeper than 4 inches below the surface (Foreman 1996). Their diet consists mainly of ants with the most important ant species being the harvester ants in the genera *Veromessor* and *Pogonomyrmex* (Foreman 1996). Water requirements are satisfied with preformed water obtained from digested food. Flat-tailed horned lizards are oviparous and mature early. They can produce multiple clutches ranging in size from three to seven eggs (Foreman 1996).

- **Habitat**

Flat-tailed horned lizards occur entirely within the Lower Colorado River Valley Subdivision of Sonoran desert scrub. This is the largest and most arid subdivision of the Sonoran Desert with annual precipitation varying from 2.3 inches to 5.3 inches and summer temperatures averaging 86 to 89.6 °F (Foreman 1996). The flat-tailed horned lizard is generally associated with the creosote/white bursage series of the Sonoran desertscrub. This is an open community in association with sandy flats and valleys. In California, the flat-tailed horned lizard has been recorded in a comparatively broad range of habitats, including sandy flats and hills, badlands, salt flats, and gravelly soils. In Arizona, they are apparently restricted to sandy and hardpan flats. This may be due to the presence of big galleta grass which is highly correlated with the presence of flat-tailed horned lizards in Arizona (Foreman 1996).

The Flat-tailed Horned Lizard Working Group of the Interagency Coordinating Committee has proposed five management areas as part of the Flat-tailed Horned Lizard Rangewide Management Strategy. The Yuma Desert Management Area encompasses the extreme western edge of the BMGR within Action Area.

- **Distribution and Range**

The flat-tailed horned lizard is found in the extreme southwestern corner of Arizona, the southeastern corner of California, and adjoining portions of Sonora and Baja California, Mexico. In Arizona, the flat-tailed horned lizard is found in Yuma County south of I-8 and west of the Gila Mountains. It is estimated that the flat-tailed horned lizard inhabited approximately 160,000 to 170,000 acres in Arizona (Foreman 1996). Suitable habitat is found east and south of the City of Yuma outside the Colorado River floodplain and adjacent croplands (Foreman 1996). In Arizona lands within the range of the flat-tailed horned lizard include Federal lands administered by the MCAS, the BLM, and the Bureau of Reclamation (BR); State of Arizona lands; and private lands. The majority of the flat-tailed horned lizard's range in Arizona is on the BMGR (Foreman 1996).

The Yuma Station's AO does overlap historic habitat and contains potentially suitable habitat for the flat-tailed horned lizard (Foreman 1996). The range of this species within the Action Area is shown in Figure 3-1.

- **Status and Threats to the Species**

Currently the flat-tailed horned lizard is proposed for listing as a Federally threatened species. The USFWS Arizona Ecological Services Field Office requested the species to be included as part of the re-initiation BA because the USFWS feels the species will be listed soon. On November 29, 1993 the USFWS proposed listing of the flat-tailed horned lizard as threatened. This proposed listing was withdrawn on July 15, 1997 based on information at that time. The USFWS reinstated the 1993 proposed listing of the flat-tailed horned lizard as Federally threatened on December 26, 2001. Threats to the flat-tailed horned lizard may include one or more of the following: commercial and residential development, agricultural development, off-highway vehicle activity, energy developments, military activities, introduction of nonnative plants, pesticide use, and USBP activities along the U.S.-Mexico border (Federal Register 2001). Illegal UDA migration has a potential to directly affect the flat-tailed horned lizard and its habitat. USBP activities along the U.S.-Mexico border is in response to increased illegal activity and the USBP's duty to prevent and deter these illegal activities. The USBP would be able to decrease their activity along the U.S.-Mexico border when illegal activity is reduced as a result of the USBP's enforcement activities.

3.2.5 Yuma Clapper Rail

- **Biology**

The Yuma clapper rail *(Rallus longirostris yumanensis)* is one of seven North American subspecies of the clapper rails. This species is a hen-like marsh bird that is gray-brown with a tawny-orange breast, a white throat and under-tail, and bars across its flanks. The Yuma clapper rail is a large bird, measuring 36 to 42 centimeters (14 to 16 inches) in length. The male is larger than the female. It is believed that this species does not live long in the wild, only approximately 7.6 years. The Yuma clapper rail usually walks upright with up-twitching of short tails. They generally are slow and weak in flight. The adults are good swimmers for short distances. This species may occur only as an uncommon transient. The Yuma clapper rail feed on crawfish, small fish, clams, isopods, and a variety of insects.

- **Habitat**

The Yuma clapper rail occurs in Arizona along the Colorado River in marsh habitat that has formed behind dams, and occasionally occurs in the Salt River marshes north of Phoenix. This is the only clapper rail that breed in freshwater marshes. It also inhabits brackish water marshes and backwaters. Along the lower Colorado River it is a common summer resident and breeds as far north as Topock Marsh on the Havasu NWR. This species is associated with dense emergent riparian vegetation, and requires a wet substrate (such as a mudflat or sandbar) with dense vegetation for nesting and foraging. It has been reported that average annual rainfall in Yuma clapper rail habitat is usually less than 5 inches. The primary reasons for the Yuma clapper rail's decline are habitat destruction due to stream channelization and

drying and flooding of marshes. Yuma clapper rail habitat in the Action Area occurs along the Colorado River.

- **Distribution and Range**

The Yuma clapper rail seeks out nesting sites among tall cattails and bulrushes along the margins of shallow, stable ponds of freshwater marshes. The birds remain on their U.S. breeding grounds from mid-April to mid-September, when they migrate south to Mexico for the winter. The Yuma clapper rail is mysterious in their nesting habits. It is believed that they lay approximately six eggs and construct their various types of nests on dry hammocks or in small shrubs within the dense cattail habitats, just above the water level.

- **Status and Threats to the Species**

The Yuma clapper rail is Federally listed as endangered (32 FR 4001,11 March 1967; 48 FR 34182, 27 July 1983). There has been no habitat designated as critical for this species (USFWS 2001). Historically, populations of this species were localized in the Yuma area before 1940. Present populations are estimated to be between 400 to 750 in the Lower Colorado River Valley in the U.S. and 450 to 970 in Mexico (Rosenberg et al. 1991). In 1998, the Yuma clapper rail population in the United States was estimated at 553 birds (King et al. 2000).

3.2.6 Southwest Willow Flycatcher

- **Biology**

The southwestern willow flycatcher (*Empidonax traillii extimus*) is a small bird, approximately six inches long. It has a grayish-green back and wings, whitish throat, light gray-olive breast, and pale yellowish body. Two wingbars are visible and the eye ring is faint or absent. The song is a sneezy “fitz-bew” or “fit-za-bew” and the call is a repeated “whitt” (USFWS 1995).

- **Habitat**

The southwestern willow flycatcher occurs in riparian habitats where dense growths of willows (*Salix* sp.), marsh broom *(Baccharis* sp*.)*, arrowweed (*Pluchea* sp.), buttonbush (*Cephalanthus* sp.), tamarisk (*Tamarix* sp.), Russian olive (*Eleagnus* sp.), often with a scattered overstory of cottonwood (*Populus* sp.) (USFWS 1995). These habitats tend to be rare, widely separated, or small usually separated by vast expanses of arid lands.

The southwestern willow flycatcher is found on breeding territories by mid-May; nest building and egg laying typically occur in late May and early June; and fledglings can be found in early to mid-July (Muiznieks et al. 1994; Sogge and Tibbits 1994). The migration routes and wintering grounds of this species are not well known (USFWS 1995). This species is endangered due to the extensive loss and modification of its habitat. In addition, brood parasitism by the brown-headed cowbird (*Molothrus ater*) has significantly contributed to the endangered status of the southwestern willow flycatcher (Unitt 1987; Muiznieks et al. 1994; Sogge and Tibbits 1994).

- **Distribution and Range**

The southwest willow flycatcher has historically occurred from southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, and southwestern Colorado, and northwestern Mexico. This species is a migratory bird with little known about its winter range. It is currently thought that it winters in Mexico, Central America and northern South America. Presently, the breeding range for the southwestern willow flycatcher is similar to its historic range, thought much of the preferred riparian habitat in the southwest has been destroyed due to an increase in agricultural and urban development.

- **Status and Threats to the Species**

The southwestern willow flycatcher was listed as Federally endangered on February 27, 1995 (60 CFR 10693). Critical habitat was designated totaling 599 river miles within Arizona, California, and New Mexico on July 7, 1997 (62 CFR 39129); however during a hearing on March 25, 2001 the courts overturned the final ruling and the critical habitat designation no longer exists. It is currently recognized as one of five subspecies of *Empidonax traillii* (AOU 1998). The breeding range for the flycatcher includes southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, and possibly northern Baja California, Mexico (Unitt 1987; USFWS 1995). However, current populations within its range continue to decline.

3.3 Other Listed Species

The following accounts describe species that are Federally listed as threatened or endangered with the potential to occur in the vicinity of the Action Area, but which have habitat requirements that are not present in the Action Area, or which are rare transients through the area. Therefore, there is little or no potential for any of these species to occur within the Action Area or to be impacted by the activities of the USBP.

3.3.1 Nichol's Turk's Head Cactus

Nichol's turk's head cactus is a barrel-shaped cactus with spines growing from vertical, spiraling ridges. This plant grows to a maximum height of 20 inches with a diameter of 8 inches. This plant blooms from April to mid-May, displaying large pink or purplish flowers.

The cactus is found within the Sonoran desert of southern Arizona at sites in full sun on limestone slopes, often growing in soils rich in calcium carbonate. The most current information available (Matthews 1990) indicates that most of the populations of this species are grouped at two locations within the Waterman and Vekol Mountains of Pima and Pinal counties in south-central Arizona. Other smaller populations have been reported elsewhere in Arizona and northwestern Mexico. This species is not expected to occur within the Action Area since there are no areas of limestone or soils rich in calcium carbonate within the Yuma and Wellton Stations' AOs to provide suitable habitat for this species.

The Nichol's turk's head cactus is listed as Federally threatened (44 FR 61927, 26 October 1979), is protected by the Arizona Native Plant Law, and is included in the Convention on International Trade in Endangered Species (CITES) of Wild Flora and Fauna. The most

significant threat to the survival of this species in recent times has been harvesting by plant collectors (Matthews 1990).

3.3.2 Bald Eagle

In Arizona, bald eagles *(Haliaeetus leucocephalus)* nest primarily on the Salt and Verde Rivers in the central part of the state where large trees or cliffs provide nest sites near fish inhabited waters. In western Arizona, they nest on the Bill Williams River near Alamo Lake (MCAS 1995). Most of the state's major river systems, including the mainstem of the Colorado, support wintering bald eagles. Important food items in the southwest include fish, waterfowl, rabbits and carrion. Food availability and perch sites may limit wintering bald eagle abundance in Arizona. Other factors potentially limiting abundance include human disturbances and loss of aquatic habitat. No nesting bald eagles occur on the BMGR (MCAS 1995). The entire state is considered within the range of wintering bald eagles; however, the important habitat characteristics are not present within the Action Area. This species would be an uncommon transient, if it would occur at all within the Yuma and Wellton AOs. The bald eagle is Federally listed as threatened (60 FR 35999, 12 July 1995).

3.3.3 Brown Pelican

The brown pelican *(Pelecanus occidentalis)* is a large water bird that is found on coastal land and islands of the Pacific coast. It is an uncommon transient in Arizona on the Lower Colorado River, when individuals migrate from Mexico in the summer and fall. There are no breeding records for this species in Arizona (INS 1999). Occurrence of this species within the Yuma and Wellton Stations' AOs is highly unlikely as there is no suitable habitat present. The brown pelican is Federally listed as endangered (35 FR 167047, 13 October 1970).

3.3.4 Razorback Sucker

The razorback sucker *(Hyrauchen texanus)* is one of the largest sucker fish in North America. This fish is native to North America and found only in the Colorado River Basin, where it was once abundant. The razorback sucker is now restricted to a few remnant populations, the largest of which is in Lake Mohave, Arizona/Nevada (USGS 1998). Several thousand mature razorback suckers spawn in Lake Mohave but few of the young fish survive to reach breeding age. Competition and predation by over 40 introduced fish species and habitat loss due to channelization and reservoir construction contributed to the overall population decline. Existing populations of the razorback sucker to occur within the Action Area, therefore impacts to the razorback sucker are unlikely. The razorback sucker is Federally listed as endangered (55 FR 21159, 22 May 1990; 59 FR 13374, 21 March 1994).

SECTION 4.0
BIOLOGICAL EFFECTS

4.0 BIOLOGICAL EFFECTS

4.1 Introduction

The effects of the Yuma and Wellton Stations' activities on the Federally protected species and their habitats within the Action Area are presented in this section. Effects can be viewed as direct, indirect, and/or cumulative. Direct effects are considered to be those effects that are caused by the activity and occur at the same time and same place as the activity. Indirect effects are effects that are caused by the activity and are later in time, but are still reasonably certain to occur. Cumulative effects are those effects of future Federal, state or private activities that are reasonably certain to occur within the area of the Federal action subject to consultation. Beneficial effects of USBP activities within the Action Area are also discussed. USPB activities in relation to the ranges of the species of concern in the Action Area are illustrated in Figure 4-1.

Under Section 7 of the ESA, as amended, Federal agencies are required to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat for such species as determined by the USFWS after consultation with the agency conducting the action. The potential impacts to Federally listed species by the USBP activities have been evaluated in terms of how these activities may result in an effect under the ESA.

4.2 Sonoran Pronghorn

Historically, livestock grazing, hunting and poaching, irrigation projects, and development have reduced the historic range of the Sonoran pronghorn and were a major factor in the apparent population decline that occurred in the early 20th century (USFWS 2001). Highways in the U.S. and Mexico, livestock fences, and irrigation canals impede Sonoran pronghorn movement to water and forage sources along the Gila River and Rio Sonoyta. These areas appear to have been important sources of water during periods of drought. However, the use of free-standing water by Sonoran pronghorn is not clearly understood. Some studies suggest that the Sonoran pronghorn do not drink water when it may be available (USFWS 1998). Other studies have found that water consumption by American pronghorn varied inversely with the quantity and succulence of the plants consumed. Pronghorn did not drink water, even if available, when moisture content of the plants was 75 percent or greater (USFWS 1998). The extreme drought experienced in the Action Area the last seven years (1995-2002) has reduced or eliminated fawn survival, thus reducing adult recruitment in the U.S. population.

Currently, the Sonoran pronghorn is subject to a variety of human activities in its remaining range, including the Action Area. Many of these activities disturb the pronghorn and its habitat. Activities include military training, increasing recreational activities, grazing, increased UDA and illegal smuggling activities, and in response, increased law enforcement activities (USFWS 2001). The USFWS referenced the MCAS as quantifying the extent of the current pronghorn range that is affected by various activities and listed the following activities: 69.6 percent of the range is in recreational use; 9.8 percent of the range is used for military training on the BMGR's North and South Tactical Ranges (TACs); 5.8 percent is used for air-to-air firing ranges; proposed explosive ordinance disposal (EOD) five-year clearance areas at North and South TACs and Manned Range 1 utilize 1 percent of the range; ground support areas and zones at MCAS cover 0.29 percent of the range (USFWS 2001). In addition, 5.6 percent of the current Sonoran pronghorn range is used for livestock grazing, 860 miles of roads occur in the range,

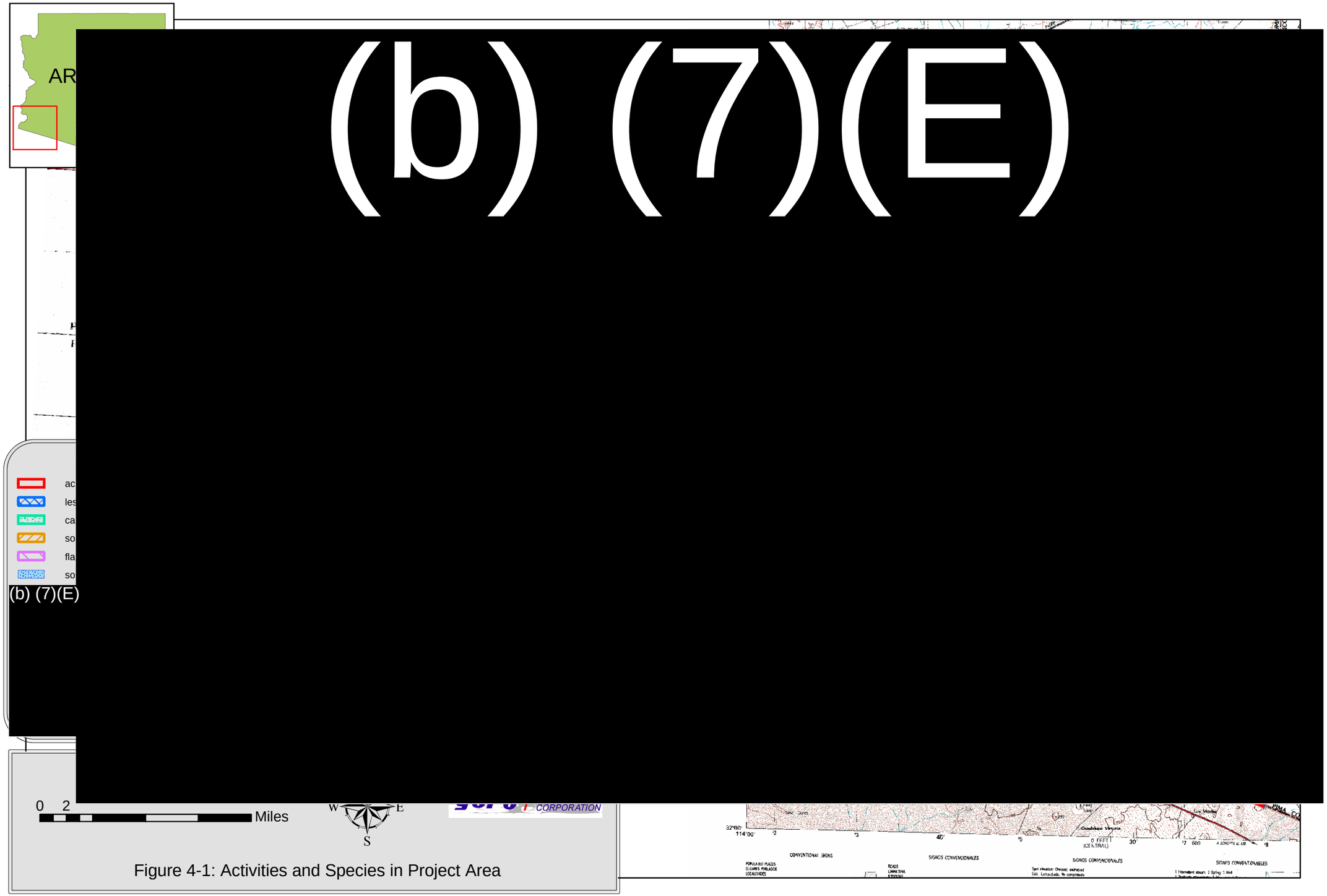


Figure 4-1: Activities and Species in Project Area

and foot and vehicle traffic by UDAs and illegal smugglers occurs at an increasing frequency (USFWS 2001). With the increased USBP enforcement efforts in Nogales, Douglas, and Naco, Arizona and in San Diego, California (Operation Gatekeeper), UDA and illegal smuggling traffic is expected to increase in the remote desert areas.

Effects to Sonoran pronghorn resulting from USBP helicopter over flights, ground patrols, maintenance of access and drag roads, installation and maintenance of remote sensors, and apprehensions and rescues, can be characterized as both potentially adverse, and potentially beneficial. Since the start of patrols in the 1920s, fixed-wing aircraft surveillance in the 1940s, drag road maintenance (1940s) and helicopter surveillance (1983) to date, there has been no evidence that the USBP activities have directly resulted in the death or injury to any Sonoran pronghorn. However, thousands of apprehensions and numerous rescues per annum have been completed in the Action Area by the USBP through the years.

The location of USBP activities in relation to the Sonoran pronghorn range in the Action Area is illustrated in Figure 4-1. The locations of Sonoran pronghorn sightings for FY 2001 are presented in Appendix C.

4.2.1 Effects of Noise and Other Stimuli on Ungulates

The effect of aircraft noise on wildlife has been the subject of intensive research in recent years. Research findings for pronghorn and other ungulate species are discussed below.

The USAF commissioned a study in Utah to examine the physiological responses of American pronghorn to a variety of visual and auditory stimuli. The study (Workman et al. 1992) monitored heart rate and body temperature responses to human presence, vehicles, helicopters, fixed-wing aircraft, and sonic booms. Body temperature was not affected by disturbances, but heart rate was altered to varying degrees depending on the type of disturbance. Free-ranging pronghorn displayed the highest heart-rate responses to first exposure to a sonic boom, after which the pronghorn rapidly habituated to the disturbance. Heart rate response to subsonic F-16 flyovers was both minimal and of short duration. Low-level flyovers by a Cessna 182 (fixed-wing aircraft) showed elevated heart rates, with some animals displaying no habituation. In these instances the pronghorn associated sound with the aircraft, looking toward the incoming flight.

The portions of the study involving other ungulates yielded similar results. Workman et al. (1992) found that disturbances to bighorn sheep by aircraft were transient and have short duration. Elk also exhibited little heart rate response to subsonic flyovers. Reduction of the duration of elevated heart rate during successive disturbances indicated that habituation was occurring.

Krausman et al. (1993 a,b) demonstrated that no detrimental influence on heart rate occurred in mule deer and mountain sheep as a result of over flights. In an initial study (Krausman et al. 1993 a), desert mule deer and mountain sheep were exposed to simulated low-altitude jet aircraft noise. Heart rate, body temperature, and behavior were monitored and compared for periods before, during, and after simulated over flights. Heart rates increased during over flights, sometimes more than doubling, but returned to resting rates in less than two minutes. As the study progressed, all animals became habituated to the sounds, such that by the end of the study, mean heart rate changes were within normal expectations. In a second study, Krausman

et al. (1993 b), equipped mountain sheep with heart rate monitors and exposed them to low-level over flights by F-16 aircraft. Heart rates returned to pre-exposure levels in less than two minutes and behavior alterations were of short duration. Although the sheep often ran during noise exposure, they typically resumed normal activities after traveling less than 33 feet.

Krausman et al. (2001) studied behavioral responses of the Sonoran pronghorn to military activities on the North and South TAC on the BMGR. The behavior of Sonoran pronghorn regularly exposed to military activity was compared to the behavior of a Chihuahuan pronghorn population not regularly exposed to military activities on the BANWR. Military activities included fly-overs, strafing, bombing, and ground activities. The primary difference observed in the behavior of adult pronghorn at BMGR and BANWR was related to foraging. Pronghorn foraged less and traveled more at BMGR compared to BANWR; however, this appears to be a factor of resource allocation more than a response to military stimuli. Forage resources occur at a higher density on BANWR than at BMGR. Krausman et al. (2001) concluded that military activities at the levels observed had minimal detectable influence on the Sonoran pronghorn (Krausman et al. 2002).

These studies suggest that serious or lasting detrimental effects of noise on ungulates are unlikely. However, the studies indicate that noise from aircraft flyovers cause some temporary, short-lived stress in ungulates.

4.2.2 Effects from Helicopter Patrols and other Over Flights

The USBP helicopters (b) (7)(E) avoided known concentrations of Sonoran pronghorn on normal, routine flights. Known fawning areas (b) (7)(E)) are avoided to the maximum extent possible during the peak fawning period (April through June). Deviation to the routine flight pattern is conducted in response to "sign" or evidence of illegal entry. Helicopters that leave the patrol route to fly to the Ajo Station at Why, Arizona for refueling do so at a higher altitude, generally between (b) (7)(E) than when conducting a patrol, and do not engage in hovering activities. Therefore, although helicopters traveling to Why, Arizona for refueling are deviating from the routine flight path, they present less potential for impact than while out patrolling.

USBP helicopters do not encounter Sonoran pronghorn on a regular basis. USPB monthly logs available between December 1994 and April 1997, indicate the sighting of four Sonoran pronghorn during patrol activities. No quantitative data exist to evaluate the effects of low-level helicopter flights on Sonoran pronghorn, but anecdotal observations have been made. L. Thompson-Olais noted that during a flight to retrieve a transmitter, a USBP helicopter flew at an elevation of less than (b) (7)(E) over a group of approximately five bedded Sonoran pronghorn (INS 1999). Some of the animals got to their feet and ran from the helicopter. John Hervert (AGFD) observed a USBP helicopter fly over two female Sonoran pronghorn. The reaction of the pronghorn was limited to standing still and watching the helicopter fly by at a distance of approximately 300 meters away. The pronghorn then resumed feeding (Hervert 2002). In another instance, Mr. Hervert observed a group of pronghorn while radio tracking Sonoran pronghorn from a USBP helicopter. The pronghorn stopped what they were doing and watched the helicopter while remaining motionless. After a few minutes, the pronghorns went back to their original activities (Hervert 2002). Mr. Hervert also noted that pronghorn "always run from a helicopter that is flying directly towards them", a behavior he has observed during all capture operations associated with the AGFD collar program (Hervert 2002).