**FINDING OF NO SIGNIFICANT IMPACT**

OPERATION SKYWATCH
USBP TUSCON AND YUMA SECTORS, ARIZONA

**PURPOSE AND OBJECTIVE:** The purpose of the proposed action is to deter illegal entrants from attempting to enter the US in the harsh and remote desert regions of southwestern Arizona. The proposed action will also provide assistance in identifying and rescuing undocumented aliens (UDAs) and illegal drug traffickers who may be at risk of dying due to overexposure along the U.S./Mexico border within the U.S. Border Patrol (USBP) Tucson Sector's Area of Operations (AO). A secondary purpose of the operation is to reduce the health and safety risks of USBP agents in their mission to apprehend illegal entrants before they endanger themselves or during rescue attempts.

**PROPOSED ACTION:** The proposed action would include the temporary assignment of 20 helicopters and two fixed-wing aircraft, 24 pilots, up to 12 aircraft mechanics and other support personnel as needed to the Tucson Sector for a period of about 125 days, beginning around 1 June each year for the next five years. The aircraft will be staged primarily at the Tucson International Airport and secondarily at the Sierra Vista Municipal Airport. Other staging sites can and would vary depending on changing operational needs. The proposed action also includes support from the Yuma Sector on an as-needed basis.

**ALTERNATIVES:** Alternatives addressed in the EA include no action and the proposed action described above. Another alternative evaluated was the use of the fixed wing aircraft for reconnaissance and helicopter rescue missions only (i.e., no ground patrol rescues). The no action alternative would not enhance the USBP mission to detect and deter the UDAs from entering the U.S. and would thus, indirectly place more migrants and/or USBP agents at risk. Of the alternatives considered, the proposed action would be the most cost-efficient and strategically effective approach to ensuring the USBP agents' and migrants' health and safety.

A Programmatic Environmental Impact Statement (PEIS) was prepared in 2001 for the Immigration and Naturalization Service (INS) and JTF-6 to address similar proposed projects and missions along the southwestern border of the U.S. The EA for the proposed action is tiered from that PEIS in accordance with the President's Council on Environmental Quality's Regulations for Implementing the National Environmental Policy Act of 1969.

**ENVIRONMENTAL CONSEQUENCES:** No significant adverse affects to the natural or human environment are expected upon implementation of the proposed action. Rescue efforts may affect, but not adversely affect, Federally protected threatened or endangered species or habitats depending upon the time, duration, and location of the rescue mission. However, based on previous two operations, no impacts to such species are anticipated.

Based upon the results of the EA and the environmental design measures to be incorporated as part of the proposed action, it has been concluded that the proposed action will not have a significant adverse effect on the environment.

Ken Ehinger, Director,
INS Headquarters Facilities and Engineering Division

Date 5/28/02

# FINAL ENVIRONMENTAL ASSESSMENT

# FOR OPERATION SKYWATCH

# USBP TUCSON SECTOR, ARIZONA

**MAY 2002**

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## ABSTRACT

| | |
|---|---|
| PROPOSED ACTION: | The proposed action would include the temporary assignment of 20 helicopters and two fixed-wing aircraft, 24 pilots, up to12 aircraft mechanics and other support personnel as needed to the Tucson Sector for a period of about 125 days, beginning around 1 June each year for the next five years. The aircraft will be staged primarily at the Tucson International Airport and secondarily at the Sierra Vista Municipal Airport. Other staging sites can and would vary depending on changing operational needs. The proposed action also includes support from the Yuma Sector on an as-needed basis. |
| PURPOSE AND NEED FOR THE PROPOSED ACTION: | The primary purpose of the proposed action is to assist in locating and rescuing undocumented aliens (UDAs) and illegal drug traffickers who may be at risk of dying due to overexposure along the U.S./Mexico border within the U.S. Border Patrol (USBP) Tucson Sector's Area of Operations (AO). Operation Skywatch is also intended to deter illegal entrants from entering rugged and harsh desert environments through the presence of additional aircraft and personnel. A secondary purpose of the operation is to reduce the health and safety risks of USBP agents in their mission to apprehend illegal entrants before they endanger themselves or during rescue attempts. There is a need to deter the UDAs from attempting to illegally enter the United States and to provide rapid detection, apprehension and/or rescue to those who do cross the border. |
| ALTERNATIVES TO THE PROPOSED ACTION: | Alternatives addressed in the EA include no action and the proposed action described above. Another alternative evaluated was the use of the fixed wing aircraft for reconnaissance and helicopter rescue missions only (i.e., no ground patrol rescues). The no action alternative would not enhance the USBP mission to detect and deter the UDAs from entering the U.S. and would thus, indirectly place more migrants and/or USBP agents at risk. Of the alternatives considered, the proposed action would be the most cost-efficient and strategically effective approach to ensuring the USBP agents' and migrants' health and safety. |
| ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION: | No significant adverse affects to the natural or human environment are expected upon implementation of the proposed action. Rescue efforts may affect, but not adversely affect, Federally protected threatened or endangered species or habitats depending upon the time, duration, and location of the rescue mission. However, based on the previous two operations, no impacts to such species are anticipated. |
| CONCLUSIONS: | Based upon the results of the EA and the environmental design measures to be incorporated as part of the proposed action, it has been concluded that the proposed action will not have a significant adverse effect on the environment. |

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# SECTION 1.0
# INTRODUCTION

# 1.0 INTRODUCTION

This Environmental Assessment (EA) addresses the potential effects, beneficial and adverse, of the Immigration and Naturalization Service (INS) and U.S. Border Patrol (USBP) Operation Skywatch. The INS is a Federal Agency within the U.S. Department of Justice (DOJ) that administers the nation's immigration laws. Operation Skywatch is a temporary expanded air operations designed to reduce the number of fatalities of undocumented aliens (UDA) and enhance the continuing support to border enforcement activities within the USBP Tucson Sector. The USBP Yuma Sector would support Operation Skywatch within the Tucson Sector's Area of Operations (AO). Operation Skywatch was first initiated in 2000 in a response to a large increase of UDA heat related deaths. Almost 40 deaths occurred from February to June 2000, creating an emergency situation that required aircraft and personnel to be immediately detailed to the Tucson Sector. Near record temperatures in the summer of 2001 caused even more deaths, resulting in the reinitiating of Operation Skywatch as an emergency in response to the potential for imminent loss of life. Both of these actions were addressed in separate EAs (INS 2000 and 2001). Due to the success of these previous operations, INS and USBP have decided to implement this important program on an annual basis for at least the next five years. This EA updates the previous two EAs and addresses the potential impacts of implementing the program on an annual basis.

## 1.1 Background

### 1.1.1 INS Organization

The INS has the responsibility to regulate and control immigration into the United States. In 1924, the U.S. Congress created the USBP to be the law enforcement arm of the INS. The USBP's primary function is to detect and deter the unlawful entry of undocumented aliens (UDA) and smuggling along the nation's land borders and between the ports-of-entry (POE). With the increase in illegal drug trafficking, the USBP also has become the leader for drug interdiction between land and POEs. Since 1980, an average of 150,000 immigrants have been naturalized every year. At the same time, however, illegal aliens have become a significant issue. INS apprehension rates are currently averaging more than 1.5 million illegal aliens throughout the country. The INS estimates that there are currently seven to nine million illegal aliens in the United States. However, other studies have indicated higher numbers, closer to 10 million.

### 1.1.2 Tucson Sector

The mission of the USBP Tucson Sector (within its AO) is to protect the U.S.-Mexico boundary in Arizona through the detection and prevention of smuggling and illegal entry of aliens into the United States. The Tucson Sector encompasses all or parts of Cochise, Pima, Pinal, Maricopa, Yavapai, Navajo, Apache, Gila, Graham, Greenlee, Coconino, and Santa Cruz counties (Figure 1). The Tucson Sector is responsible for approximately 280 miles of the U.S.-Mexico border, most of which are remote and rugged lands, particularly along the corridor between the Douglas and Ajo Stations' AO.

The Tucson Sector uses a variety of methods to detect and deter UDAs and illegal drug traffickers. Deterrence is accomplished through the actual presence (24 hours per day, seven days per week) of the USBP agents on the border, fences and other physical barriers (natural and man-made), lighting, and the knowledge that the illegal entrants will be detected and apprehended. Detection of the UDAs and illegal traffickers is accomplished through a variety of low technology and high-technology resources. These include observing physical signs of illegal entry (vehicle tracks and footprints, clothes, etc.), visual observation of the illegal entries from the ground or from aerial reconnaissance, operation of checkpoints, information provided by private landowners or the general public, ground sensors, and remote video surveillance (RVS) systems.

Currently, the aircraft equipment available for the proposed action is 19 aircraft comprised of 13 OH-6 helicopters, two twin-engine helicopters (UH-1), one MD600 and one AS350 with forward-looking infrared (FLIR) capability, and two fixed wing airplanes (1-Cessna 182 and 1-Piper Cub), which can provide assistance to any USBP station within the sector. The air operations center for the proposed action will be located at the Tucson International Airport, with a separate staging area at the Sierra Vista Municipal Airport. There are currently no established flight patrol routes within the Tucson Sector; however, when emergency assistance is requested, USBP helicopters will operate throughout the Tucson Sector's AO.

As directed by the President's National Drug Control Strategy, the Tucson Sector is currently employing a border enforcement program, called Operation Safeguard, to gain, maintain, and extend control of the Arizona border, as directed by the President's National Drug Control Strategy. Operation Safeguard is a complex and diverse program that uses increased surveillance, remote sensing methods

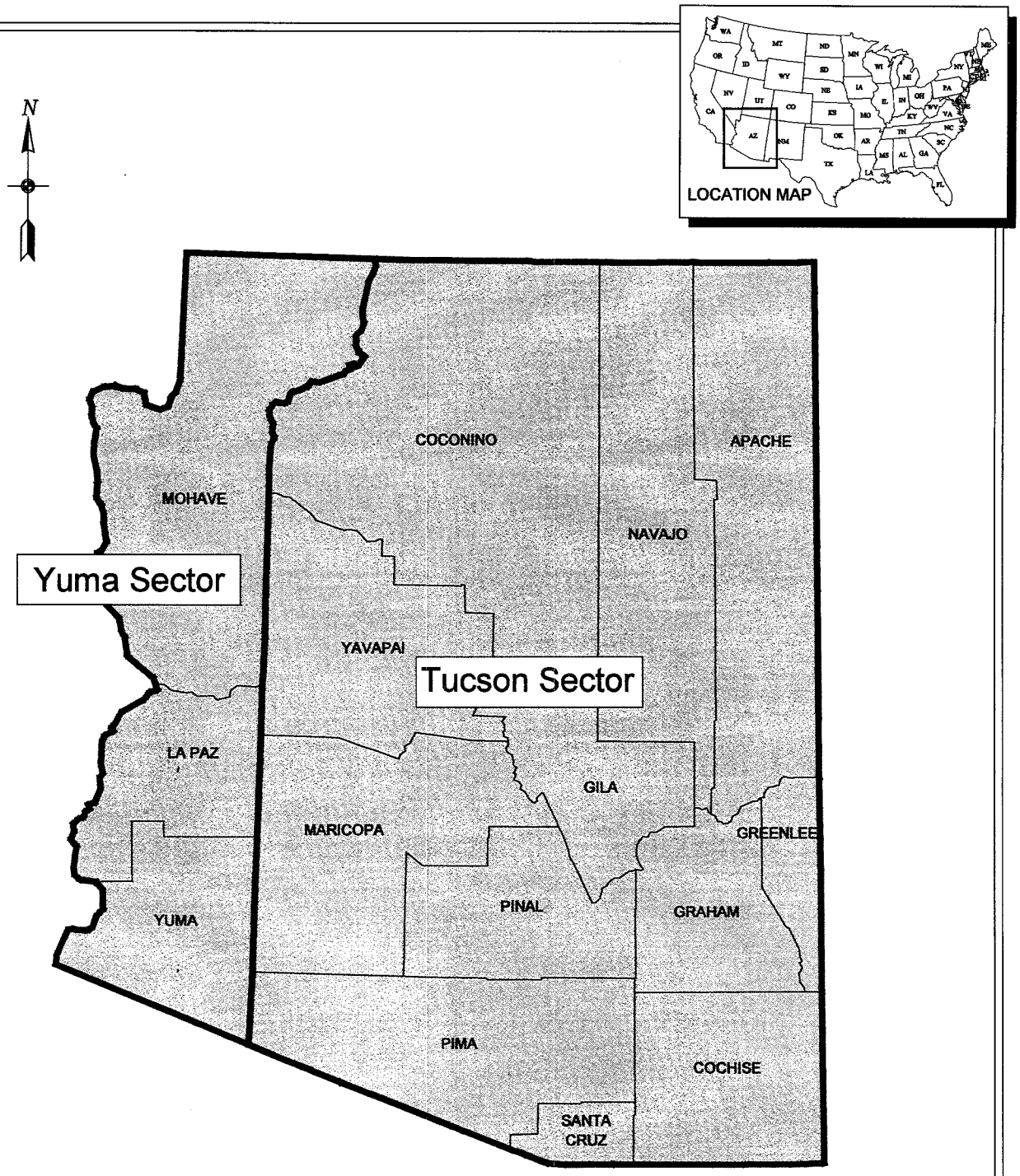


Figure 1: Yuma and Tucson Sectors

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and technologies, search and rescue missions, personnel deployment, and other related efforts to detect and deter UDAs and illegal drug traffickers from entering the U.S.

### 1.1.3 Yuma Sector

As with the Tucson Sector, the Yuma Sector has a variety of methods to detect and deter UDAs and illegal drug traffickers. Several measures have to be employed by the USBP in order to observe illegal activity or signs of illegal activity including low-level flights. Currently the Yuma Sector maintains five OH-6 helicopters and two fixed winged airplanes, which can provide assistance to any station within the sector. The air operations center is located at the Yuma Airport. The Yuma Sector conducts a daily patrol route along the U.S.-Mexico border, which has been reviewed in accordance with the National Environmental Policy Act (NEPA) and Section 7 of the Endangered Species Act (ESA). The Yuma Sector will provide operational assistance on an as needed basis under Operation Skywatch within the western desert area of the Tucson Sector.

### 1.1.4 Regulatory Authority

The primary sources of authority granted to officers and agents of the INS are the Immigration and Nationality Act (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 and agents may exercise the authority granted to them in the Immigration and Nationality Act. 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 agents; and Title 21(21 U.S.C. § 878), relating to Drug Enforcement Agency cross-designation of INS officers and agents.

## 1.2 Purpose and Need

As the number of UDAs increases, so does the number and frequency of UDA deaths, primarily due to heat exhaustion and overexposure. Between January and August 2000, the USBP rescued about 850 UDAs in Tucson Sector. During the same time frame in 2001, the Tucson Sector reported 101 rescue operations, which involved 311 UDAs. Many were suffering from dehydration, hunger, and heat stroke. Some had been injured or assaulted and left for dead by bandits. Others had been abandoned by smugglers (coyotes) when they were unable to keep up with the rest of the group. Over the past four years 206 deaths have occurred in the Tucson Sector while attempting to illegally enter the United States (i.e., 11 in fiscal year [FY] 98, 29 in FY99, and 70 in 2000 and 79 in 2001). In 2001, Yuma Sector reported 24 deaths. So far this year, the Yuma and Tucson Sectors have reported 2 and 14 deaths, respectively. The majority of these deaths are directly related to migrant smugglers leading groups of UDAs through remote and treacherous desert terrain. The migrants are thus exposed to extremely harsh climatic conditions and are not prepared to survive in these situations.

With the hottest temperatures registered between May and September, the number of UDA fatalities is anticipated to rise. Although public information programs target migrants to warn them of the dangers of attempting to cross, thousands of migrants ignore these cautions. There is a need, therefore, to deter the UDAs from attempting to illegally enter the United States and to provide rapid detection, apprehension and/or rescue to those who do cross the border. The purpose of Operation Skywatch is to prevent deaths and reduce injuries in hazardous geographic locations by first creating a deterrence with the expanded presence of aircraft and personnel and second by enhancing USBP apprehension and rescue efforts. Lastly, Operation Skywatch is designed to protect the health and safety of USBP agents during apprehension and rescue efforts.

## 1.3 Proposed Action

Operation Skywatch is proposed to be conducted on annually for at least the next five years. Typically, the operation would commence around late May or early June and continue for approximately 125 days (i.e., on or about 30 September). The USBP Tucson Sector proposes to maintain and operate two additional fixed-winged single engine aircraft and 20 helicopters, reassigned on a temporarily from the Tucson Sector and other USBP sectors, for aerial reconnaissance missions along the U.S. and Mexico border in Arizona (Figure 2).

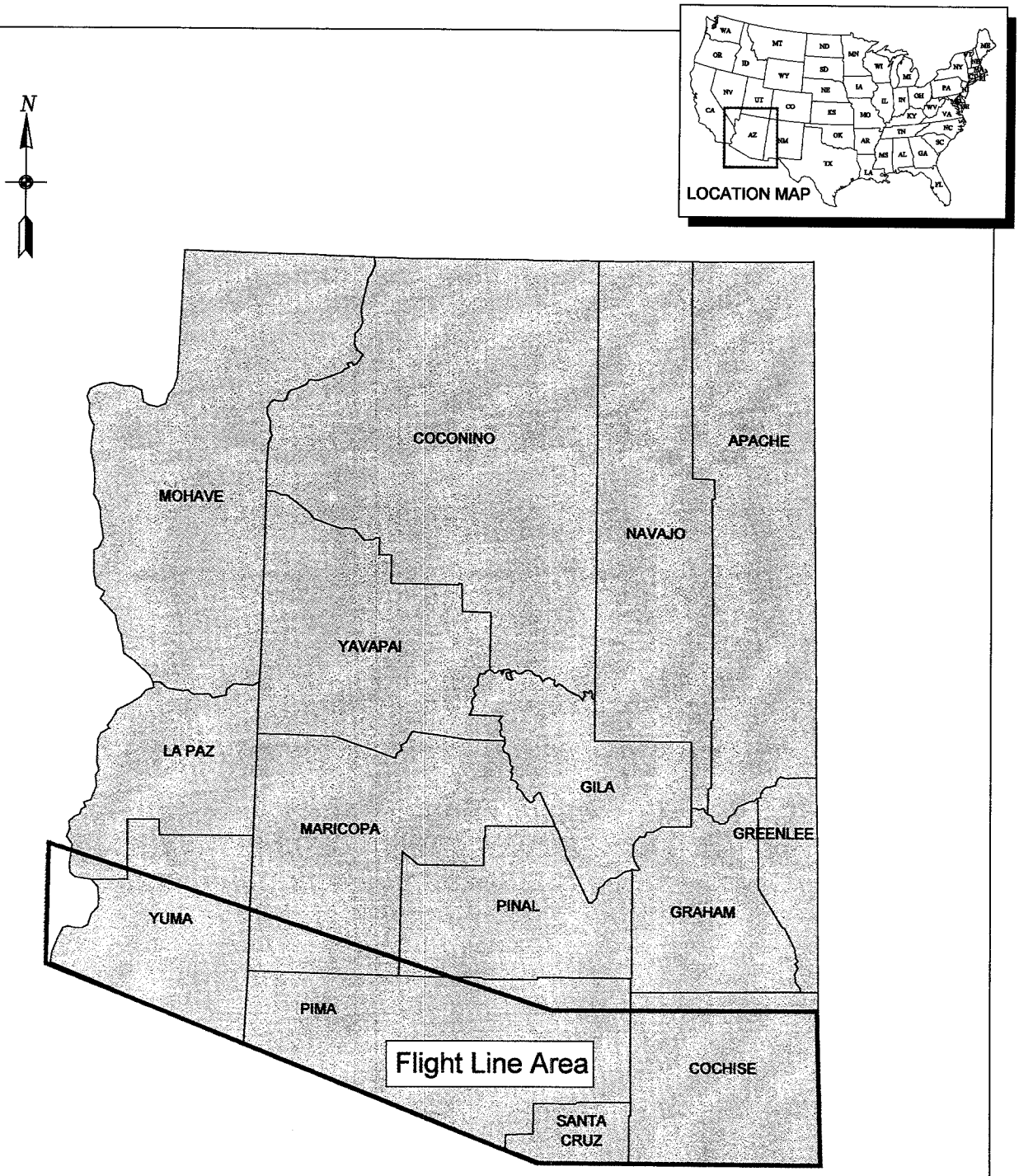


Figure 2: Flight line area

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The aircraft support personnel for the proposed action would include two supervisory aircraft pilots, 24 journeymen pilots, and up to 12 mechanics.

The aircraft would be primarily staged at the Tucson International Airport. However, a secondary staging site would be at the Sierra Vista Municipal Airport. Depending on changing operational needs, other staging areas may also be required.

The Yuma Sector will also assist in the Tucson Sector's search and rescue mission by providing two fixed winged aircraft on an as-needed basis. During the operations all aircraft provided by the Yuma Sector would remain under the operational control of the Yuma Sector and would be based out of Yuma.

The helicopters would typically fly at an altitude of 200 feet above ground level (AGL) or lower. These altitudes are mandated by the Federal Aviation Administration (FAA) for flights within the airspace of the Barry M. Goldwater Range (BMGR), which includes portions of the Cabeza Prieta National Wildlife Refuge (NWR). Typical reconnaissance missions over areas not restricted by the FAA will be flown at 2,000 to 4,000 feet AGL, but pilots may drop down to 200 feet AGL to accurately evaluate UDA conditions to determine if rescue operations are necessary. Shifts for the aircraft crew (pilots, mechanics, and other support personnel, as needed) would initially be 4:00AM to 12:00PM, 10:00AM to 6:00PM, 4:00PM to 12:00AM, and 10:00AM to 6:00PM to provide at least one aircraft aloft at any time (from Douglas/Naco to Ajo). Fixed-wing aircraft would normally fly along the border corridor during daylight hours only and typically at higher altitudes, except within the airspace of the BMGR and other airspace controlled by the FAA. Most of the aerial reconnaissance efforts would be conducted over Pima, Santa Cruz, and Concise counties.

The aircraft would be deployed in a law enforcement-mode along the international border. The priorities under which they will operate shall be:

1. as an additional deterrent factor by their presence,
2. assist ground patrol units, track non-deterred illegal entrants, and facilitate apprehension,
3. act in a rescue assist mode, and
4. gather additional intelligence data, where possible, to transfer to the responsible USBP station

Once the aircraft pilots identify UDAs, information regarding their locations and apparent conditions would be transmitted to USBP ground patrol units. If a fatality appears to be

imminent without immediate rescue efforts, helicopter Border Patrol Search, Trauma and Rescue (BORSTAR) units may be deployed. Similarly, if the UDAs are spotted in locations that are too remote or rugged for ground vehicles, helicopters may be used to rescue the UDAs.

# SECTION 2.0
# ALTERNATIVES

## 2.0 ALTERNATIVES

This section of the EA describes the alternatives considered during the preparation of the document. Three alternatives were considered: (1) No Action, (2) Fixed Wing Aircraft Reconnaissance with Helicopter and Ground Patrol Rescues—the preferred alternative; and (3) Fixed Wing Aircraft Reconnaissance with Helicopter Rescues Only. Two additional alternatives were considered but were eliminated from further evaluation. Each of these is discussed in the following paragraphs.

### 2.1 Alternative 1. No Action Alternative

The No Action Alternative would force the USBP to rely on their current resources to detect and provide humanitarian assistance to UDAs at a time when illegal immigration and temperatures are increasing. This alternative could result in a continued increase in deaths and increase the risks to USBP agents' health and safety while trying to rescue the UDAs in rugged terrain. This alternative would also result in additional ground disturbance from off-road vehicles during rescue operations. Ultimately, the USBP has determined that this alternative would unduly risk the lives of UDAs and USBP agents.

### 2.2 Alternative 2. Fixed Wing Aircraft Reconnaissance and Helicopter and Ground Patrol Rescues (Preferred Alternative)

This alternative will temporarily detail up to 22 additional USBP aircraft (two fixed wing and 20 helicopters), two Supervisory Aircraft Pilots, 24 pilots, and up to 12 aircraft mechanics from other USBP sectors to the Tucson Sector for a period of approximately 125 days on an annually. The proposed action also includes using the aircraft operated and maintained by the Yuma Sector to assist in reconnaissance of the western portion of the Tucson Sector.

The flight operations would be conducted along the southern Arizona border from the Ajo Area of Operation (AO) eastward to the state boundary, typically at altitudes of 200 feet AGL or higher. The pilots' mission will be (1) to deter illegal entry through their presence and (2) to detect UDAs who appear to be at risk and to notify ground/helicopter patrols of their locations and the apparent conditions. These units will then initiate the appropriate emergency response action. Most flight operations along the border would typically be flown during daylight hours so that the pilots can make visual observations and assessments. However, nighttime missions are also planned, especially for the OH-6 helicopters equipped with FLIR.

The aircraft would be operated from established airports that are equipped with proper fuel and hazardous materials (e.g., cleaning solvents, petroleum, oils and lubricants) storage and handling facilities. Pilots, mechanics, and other support personnel as assigned would be lodged in local hotels.

## 2.3 Alternative 3. Fixed Wing Aircraft Reconnaissance and Helicopter Rescues Only

This alternative would implement the temporary expansion of the fixed wing aircraft reconnaissance mission, but would provide for helicopter rescues only. This alternative would avoid some potential ground disturbances due to off-road maneuvers that may be required for ground patrol rescues. However, helicopter support is often required. This alternative would dedicate helicopters to only emergency response reducing the overall effectiveness of the Sector flight surveillance operations.

## 2.4 Alternatives Considered but Eliminated From Further Evaluation

Several other alternatives and combinations thereof were considered during the preparation of this EA. However, these were not carried forward for detailed analyses because they were not as effective, were more environmentally damaging, and/or posed a greater health risk to UDAs and/or USBP personnel. Deploying additional USBP agents on the ground was considered but eliminated due to the urgency of the situation and the time required to hire/train the number of agents that would be needed to adequately patrol the area. The addition of these agents would also necessitate the procurement of other support resources including administration facilities, vehicles, and support personnel, and there would still be areas along the border that the agents could not effectively patrol due to natural barriers.

Implementation of Operation Skywatch with ground patrol rescue efforts was also considered but was not carried forward because of the increased risk to the safety and health of the USBP officers and UDAs. Some areas are geographically inaccessible by off road vehicles and attempting a rescue in these areas increases the probability of a fatality. The number of vehicles that would be necessary to devote to search and rescue missions also would reduce normal patrol activities.

# SECTION 3.0
# ENVIRONMENTAL BASELINE CONDITIONS

# 3.0 ENVIRONMENTAL BASELINE CONDITIONS

## 3.1 Climate

The climate in southern Arizona is quite varied due to differences in elevation and proximity to physical features such as mountains. Two distinct climatic zones, the Mexican Highland Zone and the Sonoran Desert Zone differentiate the Tucson Sector. The Mexican Highland Zone in Santa Cruz, Cochise, and eastern Pima counties is at a higher elevation than the Sonoran Desert Zone. Annual temperature variations in the area range from 111°F to -1°F. Relative humidity ranges from 50 percent in the mornings to 33 percent in the afternoons.

The Sonoran Desert Zone in western Pima, Maricopa, and Pinal counties has a desert climate. Annual precipitation in the area ranges from less than three inches at lower elevations to 12 inches at upper elevations. Almost 50 percent of the normal yearly precipitation occurs from mid-July to mid-September as a result of moisture-laden air currents moving into Arizona from the Gulf of California. Temperatures in the summer months range from 71° to 108°F with a maximum of 124°F having been reported. Due to the proximity of the Gulf of California, relative humidity ranges from 53 percent in the mornings to 23 percent in the afternoons, which can significantly increase the heat index. Prevailing winds are from the north and are highest (10 mph) in July.

## 3.2 Physiography

Southern Arizona lies within the Basin and Range Physiographic Province and is characterized by intensely deformed and intruded strata within numerous fault blocks. This province has roughly parallel but discontinuous mountain ranges that, in Arizona, tend to be linear and oriented generally northwest to southeast. Broad alluvial valleys separate these block-faulted mountain ranges. The Basin and Range Province in the study area can be subdivided into two physiographic sub-provinces: the Mexican Highlands and the Sonoran Desert (Hayes 1969).

The Mexican Highland subprovince includes Cochise County, Santa Cruz County, and the eastern part of Pima County. Mountain ranges make up nearly half of the area (Hayes 1969) and may rise to more than 9,000 feet mean sea level (MSL). The Sonoran Desert subprovince includes Maricopa County and the western portions of Pima and Pinal counties.

In contrast to those of the Mexican Highlands, the mountain ranges in this subprovince are lower and narrower, and cover less than a fourth of the area (Hayes 1969).

A number of landforms are present throughout the Arizona border region. These physiographic features include relatively large-scale features such as mountains, basins, and volcanic cinder cones and flows, and relatively small-scale features such as sand dunes, alluvial fans, pediments, and playas. Landforms present in the study area are features typically associated with desert regions. Much of the shaping of the present southern Arizona landscape occurred during the Quaternary (i.e., the last two million years) (Cooley 1967).

## 3.3 Land Use

The land use in the area includes agriculture, rangeland, urban, forest, recreation/special use, and water. The major Federal agencies controlling large land areas are the U.S. Forest Service (USFS), National Park Service (NPS), Department of Defense (DoD), U.S. Fish and Wildlife Service (USFWS) and the Bureau of Land Management (BLM). The major state agencies controlling large areas of land are the Arizona State Land Department, Arizona State Parks and the Arizona Game and Fish Department. Native American Nations also own significant areas of land. Private and corporate land ownership, a small percentage of the total land area, contains the urban areas and intensive specialized agriculture land, along with large areas of open rangeland.

## 3.4 Air Quality

The U.S. Environmental Protection Agency (USEPA) defines ambient air quality in 40 CFR 50 as "that portion of the atmosphere, external to buildings, to which the general public has access". In 40 CFR 50, USEPA has designated "criteria air pollutants" in which ambient air quality standards have been established. Ambient air quality standards are intended to protect public health and welfare and are classified as either "primary" or "secondary" standards. Primary standards define levels of air quality necessary to protect the public health. National secondary ambient air quality standards define levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. Primary and secondary standards have been established for carbon monoxide, lead, ozone, nitrogen dioxide, particulate matter (total and inhalable fractions) and sulfur dioxide. Areas that do not meet these standards are called non-attainment areas; areas that meet both primary and secondary standards are known as attainment areas. The state of Arizona has

adopted the National Ambient Air Quality Standards (NAAQS) as the state's air quality standards. These standards are presented in Table 3-1.

The majority of the Arizona segment of the U.S.- Mexico border area is sparsely settled desert or semi-desert. However, this segment contains the large urban areas of the Tucson metropolitan areas. Several "sister cities" are also located along the U.S.-Mexico border. There are a number of air quality problems related to the rural, urban, and industrial areas within this study area. Man-made sources of air contaminants affect the air quality of the study area. These sources include: industrial emissions, mobile (vehicular) emissions, area emissions (e.g., emissions from numerous residences and small commercial establishments in an urban setting), dust resulting from wind erosion of agriculturally disturbed lands, smoke from forestry burns, and pollutants transported into the study area on winds blowing from major urban/industrial areas outside the study area. One of the largest sources of air pollution in Arizona is the controlled burning of forest land.

Airborne particulates are a special problem in the border area. Construction activity and windblown dust from disturbed desert are significant sources of fugitive dust. In agricultural areas, farming activity is an additional source of fugitive dust. Many residences in the Mexican border area burn non-traditional fuels such as wood scraps, cardboard, and tires to provide warmth in the winter. The resulting particulate loading can also adversely affect air quality in the Arizona border counties.

In addition to airborne particulates, high concentrations of sulfur dioxide in the study area are of concern. Sulfur dioxide is the primary contributor to acid deposition, which causes acidification of lakes and streams and can damage trees, crops, historic buildings, and statues. In addition, sulfur dioxide compounds in the air contribute to visibility impairment and may affect breathing and aggravate existing respiratory and cardiovascular disease (USEPA 2001). Ambient sulfur dioxide in the study area results largely from stationary sources such as coal and oil combustion, steel mills, refineries, pulp and paper mills, and from nonferrous smelters.

**Table 3-1**

**National Ambient Air Quality Standards**

| Pollutant | Standard Value* | Standard Type |
|---|---|---|
| **Carbon Monoxide (CO)** | | |
| 8-hour average | 9ppm (10mg/m$^3$) | P |
| 1-hour average | 35ppm (40mg/m$^3$) | P |
| **Nitrogen Dioxide ($NO_2$)** | | |
| Annual arithmetic mean | 0.053ppm (100μ/m$^3$) | P and S |
| **Ozone ($O_3$)** | | |
| 1-hour average | 0.12ppm (235μg/m$^3$) | P and S |
| 8-hour average** | 0.08ppm (157μg/m$^3$) | P and S |
| **Lead (Pb)** | | |
| Quarterly average | 1.5μg/m$^3$ | P and S |
| **Particulate<10 micrometers (PM-10)** | | |
| Annual arithmetic mean | 50μg/m$^3$ | P and S |
| 24-hour average | 150μg/m$^3$ | P and S |
| **Particulate<2.5 micrometers (PM-2.5)** | | |
| Annual arithmetic mean** | 15μg/m$^3$ | P and S |
| 24-hour Average** | 65μg/m$^3$ | P and S |
| **Sulfur Dioxide ($SO_2$)** | | |
| Annual arithmetic mean | 0.03ppm (80μg/m$^3$) | P |
| 24-hour average | 0.14ppm (365μg/m$^3$) | P |
| 3-hour average | 0.50ppm (1300μg/m$^3$) | S |

Source: EPA 2001. Arizona Department of Environmental Quality 2001.

Legend: P = Primary; S = Secondary; ppm = parts per million; mg/m$^3$ = milligrams per cubic meter; μg/m$^3$ = micrograms per cubic meter

*Parenthetical value is an approximately equivalent concentration.

**The ozone 8-hour standard and the PM 2.5 standards are included for information only.

## 3.5 Noise

Noise is one of the major concerns associated with aerial reconnaissance operations. USBP noise-generating activities include low-level helicopter patrols, fixed-wing aircraft reconnaissance missions, and ground vehicular patrols. Helicopter patrols are flown in accordance with Federal Aviation Administration regulations and typically maintain an elevation of 200 feet AGL. However, lower flights and even landings can occur in the event of apprehensions and/or rescues. Helicopter patrols are seldom flown on specific routes or at regular times. Therefore, noise is generally infrequent in any single location. The aerial reconnaissance missions flown by fixed-wing aircraft are typically conducted at altitudes greater than 500 feet AGL. Again, no routine or specific routes are currently flown and thus

infrequent noise is generated at sporadic locations. Vehicular patrols include the daily patrol operations.

## 3.6 Surface Water

Surface water in southern Arizona is considered to be within the Lower Colorado Hydrologic Region. The state of Arizona has implemented a watershed management approach for its water resources. The major surface water basins in the study area delineated by the Arizona Department of Environmental Quality (ADEQ) are as follows: the Colorado/Lower Gila, the Santa Cruz/Rio Magdalena/Rio Sonoita, the San Pedro/Wilcox Playa/ Rio Yaqui, and the San Carlos/Safford/Duncan basins (ADEQ, Source Water Assessment, 1992). The Wilcox Playa Basin is a topographically closed basin that drains toward the interior. During seasonal flooding, shallow lakes appear that when dry become vast salt playas. The Gila River, San Pedro River, and Santa Cruz River basins ultimately drain into the Southern Colorado River Basin. The Rios de Mexico Basin, consisting of the Yaqui River and the Sonoran Drainage, drain south into Mexico.

Water quality assessments for the study area indicate that the major problems of surface water (stream/riverine) include heavy metals, ammonia, low dissolved oxygen, turbidity, total dissolved solids, and fecal coliform bacteria. The potential sources contributing to these water quality problems include mining operations, municipal point sources including wastewater effluent, agriculture irrigation and recirculation, range management, and other non-point sources (ADEQ 1992).

## 3.7 Biological Resources

### 3.7.1 Biotic Provinces

There are two biotic provinces within southern Arizona: (1) the Chihuahuan province which runs west from the New Mexico-Arizona state line through a large portion of Cochise County, Santa Cruz County, and parts of Pima County and (2) the Sonoran province which includes the northwestern part of Santa Cruz County and Pima, Pinal, Maricopa, Yuma, and La Paz counties (Dice 1943).

The Chihuahuan biotic province covers the grassy high plains and mountains of southeastern Arizona and consists of plant and wildlife species adapted to semiarid

conditions. The Sonoran biotic province covers the desert region of south-central and southwestern Arizona and is characterized by extensive plains from which isolated small mountains and buttes rise abruptly.

### 3.7.2 Vegetation Communities

The rich flora communities (3,666 species of native and naturalized plants) of Arizona can be defined on the basis of the interaction of geology, soils, climate, animals, and man. These vegetation areas set the stage for a wide array of land uses that varies from intensive cropland agriculture to extensive ranching and urban development. Four major vegetation communities occur along the southern Arizona border (i.e., Forest, Woodland, Grassland, and Desert Scrubland) and are discussed in the following paragraphs as taken from Brown (1994) and Brown and Lowe (1983).

#### 3.7.2.1 Forest

The forest community of this province consists of the Petran Subalpine Conifer Forest and the Petran Montane Conifer Forest. The Petran Subalpine Conifer Forest is a boreal forest found primarily in Cochise and Santa Cruz counties in the Chiricahua, Huachuca and Santa Rita Mountains at elevations above 2,300 feet MSL. It consists of Engelmann spruce/alpine fir series and bristlecone pine/limber pine series. The Petran Montane Conifer Forest is a cold-temperate forest and occurs in Cochise County in the Chiricahua Mountains between 2,300 and 3,000 feet MSL. The major tree series are Douglas fir/white fir series, Pine series, and Gambel oak series.

#### 3.7.2.2 Woodland

The only woodland vegetation in the study area is the Madrean Evergreen Woodland. It is a warm-temperate woodland found throughout the mountains of Cochise and eastern Pima counties starting at an elevation of 1,200 feet. This community includes dominant tree species such as alligatorbark juniper, one-seed juniper, Mexican pinyon, Chihuahua pine, Arizona pine, Arizona white oak, Encinal oak, Mexican blue oak, and Chihuahua oak.

#### 3.7.2.3 Grassland

Semidesert Grassland communities are found in the valley areas of Cochise, eastern Pima and Santa Cruz counties. This vegetation is dominated by grama grass, tobosa grass, curleymesquite grass, sacaton, and scrub-shrubs such as mesquite, one-seed juniper,

littleleaf sumac, false mesquite and desert hackberry. Santa Cruz County also contains Plains and Great Basin Grassland communities, which are dominated by cold-temperate grasses and function as transition zones between the woodland and desert-scrubland communities. Dominant grasses in this habitat type include grama, buffalo grass, wheat grass, mixed bunch grass, rice grass and sacaton.

3.7.2.4 Desert Scrubland

Desert scrubland comprises the vast majority of the habitat within the study area. Desert scrubland is subdivided into Chihuahuan Desert Scrub and Sonoran Desert Scrub. Chihuahuan Desert Scrub is found only in Cochise and eastern Pima counties. Creosote bush is the dominant vegetation, but some cacti, squawbush, ocotillo, yucca, and honey mesquite may also be found. The Sonoran Desert Scrub in the study area is further subdivided into the Lower Colorado River Valley (LCRV) and Arizona Upland (AU) Subdivisions. The LRCV subdivision is the driest of the Sonoran Desert Scrub covering most of the study area in Pima County. The dominant vegetation series within the LCRV is the creosote bush-white bursage. The AU subdivision is primarily located in Pima County and is dominated by the palo verde-cacti-mixed scrub vegetation.

### 3.7.3 Wildlife Communities

Arizona contains an enormous diversity of environments for wildlife (751 vertebrate species) ranging from hot, dry deserts at low elevations through rich upland deserts, grasslands, and woodlands at mid-elevations to cold, moist montane/alpine habitats. The distribution of these environments is controlled generally by climatic conditions as well as locally, by topographic factors. Physiographic features such as scarps, plateaus, plains, mountains, and drainage systems along with soil types and pedogenic and biotic elements influence wildlife distribution (Hendricks 1985).

3.7.3.1 Terrestrial Communities

The native faunal components of southeastern Arizona include 370 species of birds. The study area is dominated by sparrows and towhees (35 species); wood warblers (32 species); swans, geese, and ducks (31 species); tyrant flycatchers (30 species); and sandpipers and phalaropes (26 species). The majority of these bird species occur in spring and fall when neotropical migrants (e.g., flycatchers and warblers) pass through on their way to summer breeding or wintering grounds and in the winter when summer resident birds (i.e., robins,

kinglets, and sparrows) from the north arrive to spend the winter. The majority of the 109 mammalian species found in the study area are bats and rodents (i.e., mice and rats, squirrels) with rodents (e.g., pocket mice and kangaroo rats) being the most commonly encountered mammals. Of the 23 amphibian species that inhabit southeastern Arizona, spadefoot toads and true toads are dominant and the most widespread. A total of 72 species of reptiles can be found in the area with the iguanid lizards and colubrid snakes being the most prevalent along with whiptails (Lowe 1964; Hoffmeister 1986; Lane 1988; USDOI 1989; USACE 1990; Davis and Russell 1991; Lowe and Holm 1992).

3.7.3.2 Aquatic Communities

Distribution patterns of freshwater fish in Arizona are controlled by climatic and geological factors. A total of 47 fish species can be found in the major river basins and springs in the study area. The San Pedro River system supports 19 fish species; the Santa Cruz River system, 12 species; the Rio Yaqui Basin, 11 species; Monkey Spring, 10 species; Sycamore Bear Canyon, four species; and Quitobaquito Spring, two species. The lower Gila River system contains 11 fish species of which only the Desert pupfish is a native species (Minckley 1973; Rinne and Minckley 1991; Robbins et al. 1991).

### 3.7.4 Protected Species and Critical Habitat

The Endangered Species Act (ESA) [16 U.S.C. 1531 et. seq] of 1973 as amended was enacted to provide a program for the preservation of endangered and threatened species and to provide protection for the ecosystems upon which these species depend for their survival. All Federal agencies are required to implement protection programs for designated species and to use their authorities to further the purposes of the act. Responsibility for the identification of a threatened or endangered species and any potential recovery plan lies with the Secretary of the Interior and the Secretary of Commerce.

Table 3-2 presents the species included on the Federal list of threatened or endangered species that are known or presumed to occur in the southeastern Arizona border counties. As can be seen from this table, there are eight plants, 10 birds, 10 fishes, five mammals, two reptiles, two amphibians, and one invertebrate. Most of these also occur along river drainages or canyons within the various mountain ranges. Some, such as masked bobwhite and northern aplomado falcon, however, do use the desert grasslands and scrub habitats found at lower elevations along the border.

**Table 3-2**
**Federally Listed, Proposed, and Candidate Species Potentially Occurring within Cochise, Pima, and Santa Cruz Counties, Arizona**

| Common/Scientific Name | Status | Date Listed | Counties | Habitat |
|---|---|---|---|---|
| **PLANTS** | | | | |
| Acuna cactus<br>*Echinomastus erectocentrus acunensis* | C | 7/1/75 | Pima | Well drained knolls and gravel ridges in Sonoran desertscrub |
| Canelo Hills ladies' tresses<br>*Spiranthes delitescens* | E | 1/6/97 | Cochise, Santa Cruz | Finely grained, highly organic, saturated soils of cienegas |
| Cochise pincushion cactus<br>*Coryphantha robbinsorum* | T | 1/9/86 | Cochise | Semidesert grassland with small shrubs, agave, other cacti, and grama grass |
| Huachuca water umbel<br>*Lilaeopsis schaffneriana* ssp. *recurva* | E | 1/6/97 | Cochise, Pima, Santa Cruz | Cienegas, perennial low gradient streams, wetlands |
| Kearney's blue star<br>*Amsonia kearneyana* | E | 1/19/89 | Pima | West-facing drainages in the Baboquivari Mountains |
| Lemmon fleabane<br>*Erigeron lemmonii* | C | 7/1/75 | Cochise | Crevices, ledges, and boulders in canyon bottoms in pine-oak woodlands |
| Nichol's turk's head cactus<br>*Echinocactus horizonthalonius* var. *nicholii* | E | 10/26/79 | Pima | Sonoran desertscrub on limestone slopes in desert hills |
| Pima pineapple cactus<br>*Coryphantha scheeri robustispina* | E | 4/20/92 | Pima, Santa Cruz | Sonoran desertscrub or semi-desert grassland communities |
| **BIRDS** | | | | |
| Bald eagle<br>*Haliaeetus leucocephalus* | T | 1/12/95 | Cochise, Pima, Santa Cruz | Large trees or cliffs near water with abundant prey |
| Brown pelican<br>*Pelecanus occidentalis* | E | 10/13/70 | Santa Cruz, Cochise | Feed in shallow estuarine waters; nest on small coastal islands |
| Cactus ferruginous pygmy-owl<br>*Glaucidium brasilianum cactorum* | E | 3/10/97 | Cochise, Pima, Santa Cruz | Mature cottonwood/willow, mesquite bosques, and Sonoran Desertscrub |
| Masked bobwhite<br>*Colinus virginianus ridgewayi* | E | 3/11/67 | Pima | Desert grasslands with diversity of dense native grasses, forbs and brush |
| Mexican spotted owl<br>*Strix occidentalis lucida* | T | 3/15/93 | Cochise, Pima, Santa Cruz | Nests in canyons and dense forests with multi-layered foliage structure |

**Legend:**
E – Endangered C - Candidate
T – Threatened PT- Proposed Threatened

**Source:** USFWS 2001 Last Updated October 11, 2001.

**Table 3-2 Continued**

| | | | | |
|---|---|---|---|---|
| **BIRDS cont.** | | | | |
| Mountain plover<br>*Charadrius montanus* | PT | 2/16/99 | Cochise, Pima | Open arid plains, short-grass prairies, and scattered cactus |
| Northern aplomado falcon<br>*Falco femoralis septentrionalis* | E | 1/25/86 | Cochise, Santa Cruz | Grassland and Savannah |
| Southwestern willow flycatcher<br>*Empidonax traillii extimus* | E | 2/27/95 | Cochise, Pima | Cottonwood/willow and tamarisk vegetation communities along rivers and streams |
| Whooping crane<br>*Grus americana* | E | 3/11/67 | Cochise | Marshes, prairies, natural lakes |
| Yellow-billed cuckoo<br>*Coccyzus americanus* | C | 7/25/01 | Cochise, Santa Cruz, Pima | Broadleaf riparian forests |
| **AMPHIBIANS** | | | | |
| Chiricahua leopard frog<br>*Rana chiricahuensis* | P | 6/14/00 | Cochise, Pima, Santa Cruz | Streams, rivers, backwaters, ponds, and stock tanks |
| Sonora tiger salamander<br>*Ambystoma tigrinum stebbinsi* | E | 1/6/97 | Cochise, Santa Cruz | Stock tanks and impounded cienegas in San Rafael Valley, Huachuca Mountains |
| **INVERTEBRATES** | | | | |
| Huachuca springsnail<br>*Pyrgulopsis thompsoni* | C | 1/6/89 | Cochise, Santa Cruz | Aquatic areas, small springs with vegetation slow to moderate flow |
| **MAMMALS** | | | | |
| Jaguar<br>*Panthera onca* | E | 7/27/97 | Cochise, Pima | Sonoran desert scrub, lowland wet habitats |
| Black-tailed prairie dog<br>*Cynomys ludovicianus* | C | 10/4/99 | Cochise | Short-grass prairie habitats |
| Lesser long-nosed bat<br>*Leptonycteris curasoae yerbabuenae* | E | 9/30/88 | Cochise, Pima, Santa Cruz, | Desert scrub habitat with agave and columnar cacti present as food plants |
| Mexican gray wolf<br>*Canis lupus baileyi* | E | 3/11/67 | Cochise, Pima, Santa Cruz | Chaparral, woodland, and forested areas; may cross desert areas |
| Ocelot<br>*Felis pardalis* | E | 7/21/82 | Cochise, Pima, Santa Cruz | Humid tropical and sub-tropical forests, savannahs, and semi-arid thornscrub |
| Sonoran pronghorn<br>*Antilocapra americana sonoriensis* | E | 3/11/67 | Pima | Broad, intermountain alluvial valleys with creosote-bursage/palo verde-mixed cacti |

**Legend:**
E – Endangered C – Candidate
T – Threatened PT – Proposed Threatened

**Source:** USFWS 2001. Last Updated October 11, 2001.

**Table 3-2 Continued.**

| | | | | |
|---|---|---|---|---|
| **REPTILES** | | | | |
| New Mexican ridge-nosed rattlesnake *Crotalus willardi obscurus* | T | 4/4/78 | Cochise | Presumably canyon bottoms in pine-oak and pin-fir communities |
| Sonoyta mud turtle *Kinosternon sonoriense longifemorale* | C | 9/19/97 | Pima | Ponds and streams |
| **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, Santa Cruz | Shallow springs, small streams, and marshes; tolerates saline and warm water |
| Gila chub *Gila intermedia* | C | 9/18/85 | Cochise, Pima, Santa Cruz | Pools, springs, cienegas, and streams |
| Gila topminnow *Poeciliopsis occidentalis occidentalis* | E | 3/11/67 | Pima, Santa Cruz, | Small streams, springs, and cienegas vegetated shallows |
| Loach minnow *Tiaroga cobitis* | T | 10/28/86 | Cochise, Pima | Cool to warmwater, low gradient streams and rivers in the Gila River basin |
| Sonora chub *Gila ditaenia* | T | 4/30/86 | Santa Cruz | Large, deep, and permanent pools with bedrock-sand substrates |
| Spikedace *Meda fulgida* | T | 7/1/86 | Cochise, Pima | Cool to warmwater streams and rivers of moderate gradient in the Gila River basin |
| 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 | Vegetated springs, brooks, and margins of backwaters. Found generally in the shallows |

**Legend:**
E – Endangered C – Candidate
T – Threatened PT – Proposed Threatened

**Source:** USFWS 2001. Last Updated October 11, 2001.

The protected species known to occur within the designated counties of this proposed action are concentrated near the San Pedro River, the Huachuca Mountains, Organ Pipe National Monument and Cabeza Prieta NWR. The loach minnow, spikedace, Huachuca water umbel, and the southwestern willow flycatcher have all been documented in or near the San Pedro River area. The Gila chub has not been documented, but is likely to occur, in the San Pedro River. Additionally, the densely vegetated riparian areas associated with the San Pedro River are preferred habitats for the ocelot, although none have been reported from this area in years. The Huachuca water umbel, lesser long-nosed bat, Sonora tiger salamander and Mexican spotted owl have all been documented within the Huachuca Mountains. The jaguar was recently (December 2001) reported from the Parajito Mountains, west of Nogales.

The Sonoran pronghorn is located primarily on the Cabeza Prieta NWR and the western portions of the Organ Pipe National Monument. Sonoran pronghorn inhabit the broad alluvial valleys of the Sonoran Desert that exhibit more open sandy areas and low hillsides with a variety of palatable forage. The availability of forage is a primary factor that influences pronghorn distribution. Since the U.S. range of the Sonoran pronghorn is contained on Federal lands, no critical habitat has been designated for the species.

However, critical habitat has been designated for 11 species identified as potentially occurring in Cochise, Santa Cruz, and Pima counties (USFWS 2001). Although critical habitat has been designated for the New Mexico ridge-nosed rattlesnake, Yaqui chub, Yaqui catfish, whooping crane, and beautiful shiner, none of their designated critical habitats are present within the project area. The remaining six species with designated critical habitat includes four fish, one plant, and one bird.

Seven areas (complexes) were designated as critical habitat for the spikedace and loach minnow on April 25, 2000 (65 FR 24328-24372). Only one, the Middle/Upper San Pedro River Complex 5, is located within the study area. This area is defined as 37 miles of river extending from the confluence with the Babocomari River downstream to the U.S./Mexico Border, within the Naco Station AO, Cochise County, Arizona.

One area was designated as critical habitat for the desert pupfish in Arizona on March 31, 1986 (51 FR 10842-10851). This area includes a Quitobaquito Spring and a 100-foot riparian buffer zone around the spring located in Organ Pipe Cactus National Monument, which is located in the Ajo Station AO, Pima County. Four areas were designated as critical

habitat for the Sonoran chub in Arizona on April 30, 1986 (51 FR 16042-16047). These areas are located in the Coronado National Forest within the Tucson and Nogales Stations' AO, in Santa Cruz County.

The USFWS has designated seven areas (units) as critical habitat for the Huachuca water umbel in Arizona {50 CFR 17.96(a)}, 12 July 1999. All seven units are located within the study area and occur within Sonoita and Naco Stations' AO, Santa Cruz and Cochise counties, Arizona. A small portion of this habitat is located within a section of the San Pedro River.

The Mexican spotted owl has several designated units within the project area. There are nine areas in Cochise, Santa Cruz and Pima counties that have been designated as critical habitat for the Mexican spotted owl (USFWS 2001). However, as of 1 February 2001, any of these areas within NFS land is considered excluded from the critical designation {50 CFR 17.95(b)}.

## 3.8 Cultural Resources

The archeology of southern Arizona is quite detailed, and relatively complex considering the various geographic and related cultural features. For purposes of clarity, the following text will present the broad overview of southern Arizona prehistory before outlining the various previous investigations that are important to the understanding of the study area. The cultural chronology of southern Arizona is composed of five periods, namely:

| | |
|---|---|
| Paleo-Indian | 10,000 to 7,500 B.C |
| Archaic | 7,500 to 400 BC |
| Formative | AD 100 to 1450 |
| Protohistoric | AD 1450 to 1539 |
| Historic | AD 1539 to Present |

These periods are commonly subdivided into smaller temporal phases based on particular characteristics of the artifact assemblages encountered in each of three archeological regions within southern Arizona. The prehistoric periods and corresponding phases are defined by the presence of particular diagnostic artifacts such as projectile points, certain types of pottery, and occasionally, particular site locations. For the Historic period, documentary information more often is used to distinguish certain phases; nevertheless, particular artifacts also can be used to recognize certain historic affiliations. Numerous sites have been recorded throughout

the border region, many of which have subsequently been listed on the National Register of Historic Places (NRHP). Literally hundreds of other sites and structures in southeastern Arizona are considered potentially eligible for NRHP-listing.

## 3.9 Socioeconomic Conditions

### 3.9.1 Population

The population areas potentially affected by Operation Skywatch mission include the urban area of Tucson in Pima County and the smaller cities (i.e., Douglas, Sierra Vista, Ajo and Nogales) scattered throughout Cochise, Santa Cruz, and Pima counties. Much of the land area is owned by the Federal government (e.g., Fort Huachuca, San Pedro Riparian National Conservation Area (NCA), Coronado National Forest and Coronado National Monument) and is therefore sparsely populated. According to the latest Census Bureau estimates, the 1999 population in the 3-county area was estimated to be 999,882 (Table 3-3) of which 84 percent is in Pima County. The 1999 population demonstrates an 18 percent increase over the 1990 population. Tucson, the largest city in the study area, had an estimated 1999 population of 475,450 (Table 3-4).

As can be seen from Table 3-3, the population density varied from 19.1 persons per square mile in Cochise County to 91.8 persons per square mile in Pima County. The racial mix of the area was mainly comprised of Caucasian (75 percent). The second largest racial group was other races, which accounted for 14 percent of the population, and African-Americans represented three percent of the population. Hispanic origins were 31% of all the races within the ROI.

### 3.9.2 Housing

The report, *The State of Housing in Arizona*, produced by the Arizona Housing commission in 2000 states that Arizona is currently going through housing crisis where housing prices are rising twice as fast as income statewide. This is of particular importance to low income and minority households.

**Table 3-3**

**Demographic Information for Counties (2000 Census) along the Arizona Land Border**

| | | | | Race | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **County** | **Population** | **Land Area (sq. miles)** | **Density (per sq. mile)** | **White** | **African-American** | **Native American** | **Asian** | **Other** | **Hispanic** |
| Cochise | 117,755 | 6,170 | 19.1 | 90,269 | 5,321 | 1,350 | 1,942 | 14,494 | 36,134 |
| Santa Cruz | 38,381 | 1,238 | 31 | 29,168 | 145 | 251 | 201 | 7,607 | 31,005 |
| Pima | 843,746 | 9,187 | 91.8 | 633,387 | 25,594 | 27,178 | 17,213 | 113,305 | 247,578 |
| Totals | 999,882 | 16,595 | | 752,824 | 31,060 | 28,779 | 19,356 | 135,406 | 314,717 |

Legend: sq. = square
Source: U.S. Census Bureau 2001

**Table 3-4**
**Population of Cities and Towns for Counties (1990 and 1999) within the Region of Influence**

| County Population | City | 1990 Population | 1999 |
|---|---|---|---|
| Cochise | Douglas | 12,822 | 14,955 |
| | Sierra Vista | 32,983 | 40,680 |
| Santa Cruz | Nogales | 19,489 | 21,565 |
| Pima | Tucson | 405,390 | 475,450 |

Source: Arizona Department of Commerce 2001

For both minority and non-minority households, the incidence of housing problems increases dramatically as income levels decrease. Since the percent of minority households that is considered to be in the low income bracket far exceeds the proportionate number in the general population, minorities suffer disproportionately in terms of their basic need for adequate, affordable shelter. This is particularly alarming considering the growth rate of minority populations in Arizona (Arizona Housing Commission 2000).

The total number of housing units in the region of influence (ROI) in 2000 was 430,899. The largest amount of housing units is located in Pima County while the smallest is located in

Santa Cruz County, Arizona. Santa Cruz County, Arizona also has the smallest percentage of vacant units, while Pima County, Arizona has the largest number of vacant housing units. The highest household growth is occurring in Santa Cruz County, Arizona, while the lowest is occurring in Cochise County, Arizona. The largest discrepancy between in median household income growth and house sales price growth occurs in Pima County, Arizona. House sales prices are growing faster than median household income in all of the counties within the ROI except for Santa Cruz County.

### 3.9.3 Employment

Total employment in the three county area was 429,738 as of 2000. The labor force in 1997 was 446,862 with 88 percent of the labor force being in Pima County. Unemployment averaged 7 percent in 2001 for these counties combined, but individually the rates varied from a low of 3.5 percent in Pima County to a high of 8 percent in Santa Cruz County (Table 3-5). This rate of unemployment was significantly higher than the 4.7 percent rate for the state.

**Table 3-5**
**Employment and Unemployment Figures for Counties (2001 Annual Average) Along the Arizona Border**

| | | Unemployment | |
|---|---|---|---|
| **County** | **Employment** | **Number** | **(%) Rate** |
| Cochise | 39,143 | 1870 | 4.6 |
| Santa Cruz | 11,563 | 1694 | 12.8 |
| Pima | 379,032 | 13,561 | 3.5 |
| Totals | 429,738 | 17,125 | |

Source: Arizona Department of Economic Security, 2001

The economic structure varies from the diversified urban areas of Tucson to the rural areas of the other counties. Leading employment sectors include services, retail trade, and government.

### 3.9.4 Income

Income distribution is similar to the employment sectors of government, services, retail trade, and manufacturing. Per capita personal income averaged $13,538 in the border region. This is well below the state average of $25,173.

# SECTION 4.0
# ENVIRONMENTAL CONSEQUENCES

# 4.0 ENVIRONMENTAL CONSEQUENCES

## 4.1 Climate

None of the alternatives would affect the climate. The climatic conditions of the Arizona border region, however, play an integral role in the purpose and need for Operation Skywatch. The upcoming summer months typically experience the highest temperatures and without commitment of additional resources and efforts, migrant deaths are highly likely to occur due to the climatic conditions.

## 4.2 Physiography

None of the alternatives would affect the physiography of the Arizona border region. Conversely, the physiography, like the climate, affect migrants' ability to enter the United States. The rugged terrain exacerbates the extreme conditions, and thus increases the likelihood of migrant fatalities. In addition, these conditions increase the health and safety risks of the USBP agents attempting to apprehend the UDAs before they get in serious medical trouble or rescue UDAs who are in trouble.

## 4.3 Land Use

### 4.3.1 No Action Alternative

Implementation of this alternative would have no affect on the regional land use. The UDAs and drug traffickers would continue to trespass on private and public lands, forcing the USBP agents to attempt apprehensions and/or rescues, wherever possible. The overall use of the land would not be expected to change.

### 4.3.2 Preferred Alternative

No effects to overall land use would be expected as a result of the preferred alternative. Some minor, temporary disturbances would occur whenever rescue operations are employed. The 200-foot AGL ceiling would affect some recreational opportunities on public lands. These disturbances would be temporary and sporadic. Wilderness areas and National Parks/Monuments may have more stringent requirements for aviation and off road vehicle operations, which would be complied with to the maximum extent practicable.

### 4.3.3 Fixed Wing Reconnaissance with Helicopter Rescues Only

This alternative would have similar, but slightly higher, effects as the preferred alternative. With an increased number of helicopter rescues, there would be an increase in the probability of disturbances to recreational activities. Still, these disturbances would be temporary, minor and sporadic.

## 4.4 Air Quality

### 4.4.1 No Action Alternative

The No Action alternative would require additional USBP agents and vehicles to patrol the area in search of UDAs and illegal drug traffickers. Fugitive dust emissions would be greater under this alternative, since the vast majority of the roads in the border region are dirt or gravel and the patrol traffic would necessarily increase. However, no violations to air quality standards would be expected.

### 4.4.2 Preferred Alternative

Operation of reconnaissance and rescue aircraft, as well as the ground patrol vehicles, would create hydrocarbon emissions. Dispersal capabilities within the region would be expected to minimize any effects these emissions would cause. The emissions would also be expected to be below deminimus threshold levels; therefore an air quality conformity analysis is not required. Helicopter rescue missions would increase fugitive dust emissions during hovering and take-off/landing maneuvers. However, these conditions would be localized and temporary and, thus, would not be expected to result in violations of air quality standards.

### 4.4.3 Fixed Wing Reconnaissance with Helicopter Rescues Only

Emissions generated upon implementation of this alternative would be similar to the preferred alternative. Hydrocarbon emissions may be slightly higher due to the increased use of helicopters, but it is anticipated that they would still be below de minimus levels and would not be expected threaten the attainment status of the border region. Rescue missions, as described above, would create localized and temporary increases in fugitive dust.

## 4.5 Noise

### 4.5.1 No Action Alternative

The No Action alternative would not significantly affect the ambient noise levels. Some temporary and minor increases in noise levels would be generated by the increase in ground patrol traffic.

### 4.5.2 Preferred Alternative

Implementation of the preferred alternative would result in slight increases in noise levels due to fixed-wing aerial reconnaissance operations. Helicopter reconnaissance missions, especially those constructed at night, would increase ambient noise levels during the time the helicopters are flying over a given area. Depending upon the time of day and distance to noise receptors, these missions could produce annoying levels of noise to recreationists and/or temporarily disturb or startle wildlife. Some studies have demonstrated that most wildlife species may exhibit startled responses, but rapidly acclimate to such disturbances, including noises generated by aircraft (Ellis, 1982; Krausman and Hervert, 1983; Awbrey and Hunsaker, 1995; Workman et al, 1992; Weisenberger et al, 1996). Helicopter rescue missions would create higher noise levels, above 100 dBA, at the specific rescue locale, but these effects would be temporary, localized, and sporadic. The level of disturbance to humans and wildlife resources would depend upon the time, terrain, vegetation community and distance to receptors. Attenuation of the noise to less than 60 dBA (i.e., ambient conditions) would be anticipated at distances of 0.5 miles and less, depending upon the location the rescue mission.

### 4.5.3 Fixed Wing Reconnaissance with Helicopter Rescues Only

Noise levels for this alternative would be similar, but more frequent, than the preferred alternative. Having rescue operations limited to only helicopters would result in additional hovering and landing maneuvers, thereby increasing the chance of disturbance to human and natural environment.

## 4.6 Water

### 4.6.1 No Action Alternative

No direct adverse effects to surface or ground water supplies or quality would be anticipated as a result of the No Action alternative. Indirect effects may occur from erosion and

sedimentation caused by the increase patrol traffic. The magnitude of these effects are difficult, if not impossible, to determine and would be dependent upon several biotic and abiotic variables. Such variables would include number and speed of the patrol vehicles, condition of vegetation communities adjacent to roads and drainages, soil types along road beds, extant condition of road beds, and climatic conditions.

### 4.6.2 Preferred Alternative

The preferred alternative would not be expected to significantly affect the region's water supply or water quality. Aerial reconnaissance operations would reduce the need for ground patrols and thus could decrease erosion and sedimentation potentials. Petroleum, oils and lubricants (POL) and other hazardous materials used in the maintenance and operation of the aircraft would be stored at established facilities at the Tucson and Sierra Vista airports under strict compliance with appropriate regulations. No effects to surface or ground water supplies would be expected to occur as a result of the use and handling of these materials.

### 4.6.3 Fixed Wing Reconnaissance with Helicopter Rescues Only

The effects to water supplies and quality resulting from implementation of this alternative would be similar to that of the Preferred Alternative.

## 4.7 Biological Resources and Critical Habitat

### 4.7.1 No Action Alternative

Implementation of the No Action Alternative would not be expected to cause significant adverse effects to biological resources including protected species and their habitat. This alternative would increase the need for off-road rescue attempts, thereby increasing the potential for effects to vegetation communities, with concomitant effects to wildlife populations. The magnitude of these effects would depend upon numerous variables including the number of off-road trips required in the same general area, the extant condition of the vegetation communities, climatic conditions, soil types, and topography.

### 4.7.2 Preferred Alternative

Aerial reconnaissance missions with fixed-wing aircraft would not be expected to significantly affect wildlife populations, including protected species, due to the height of the flight routes

and the temporary and sporadic nature of the reconnaissance missions. Restriction of overflight missions to higher altitudes over canyons and known bat roosts (e.g., Bluebird Mine, Copper Mine, State of Texas Mine, and Aqua Dulce Mountains) would reduce, or eliminate, the chances of disturbing falcon nest sites and endangered bat roosts.

Helicopter overflights, and rescue missions in particular, could affect, but not adversely affect, some protected species, depending upon the time and location of the operation. Of particular concern to some resource agencies and environmental organization is the potential effects to Sonoran pronghorn. No quantitative data exist to evaluate the effects of low-level helicopter flights on Sonoran pronghorn, but observations have been made (INS 1999). A USFWS biologist has observed a USBP helicopter at an elevation of less than 200 feet over a group of approximately five bedded Sonoran pronghorn. Some of the animals rose and ran from the helicopter. An AGFD biologist observed a USBP helicopter fly over two female Sonoran pronghorn. Their reaction was limited to standing still and watching the helicopter at a distance of approximately 1000 feet. The pronghorn then resumed feeding. It was noted that pronghorn "always run from a helicopter that is flying directly towards them," a behavior observed during all capture operations conducted by the AGFD (INS 1999).

Workman *et al.* (1992) conducted a study to examine the physiological responses of American pronghorn to a variety of visual and auditory stimuli. The study monitored heart rate and body temperature responses to human presence, vehicles, helicopters, fixed-wing aircraft, and sonic booms. Workman *et al.* (1992) found that body temperature was not affected by disturbances, but heart rate was altered by varying degrees depending on the type of disturbance. Workman *et al.* (1992) also found that the greatest response (increased heart rate) was elicited by a hovering helicopter. Pronghorn would be expected to move greater distances and respond for longer periods of time to helicopters than to fixed-wing aircraft. Evidence suggests that pronghorn may habituate to disturbance from moving helicopters; however, they may not habituate to low-level hovering helicopters (Workman *et al.* 1992).

If it is assumed that Sonoran pronghorn respond in a similar manner to helicopters as other ungulates, some broad statements of the possible affects can be made. In general, areas where low-level helicopters are used most often would have the highest potential for disturbance to the pronghorn. Also, in areas where helicopters fly particularly low and thus create more noise and greater visual stimuli, disturbance to pronghorn would be greater (Weisenberger *et al.* 1996, Workman *et al.* 1992). Evidence from other subspecies of

pronghorn and other ungulates suggests that disturbed pronghorn may exhibit elevated heart rates, may flee, and could alter habitat use in response to low-level helicopter flights (INS 1998). On the other hand, Weisenberger *et al.* (1996) reported that elk, mountain sheep, mule deer, caribou, and white-tailed deer often respond more severely to direct, unpredicted human harassment than to mining, helicopters, or other disturbances. Therefore, any deterrence to illegal vehicle and foot traffic provided by the additional aerial reconnaissance could reduce the effects on pronghorn caused by illegal off-road traffic.

The INS/USBP, Yuma Sector, recently completed a Biological Assessment (BA) and received a Biological Opinion (BO) from the USFWS concerning helicopter missions over the Cabeza Prieta NWR and other daily operations. As a result of a recent Notice of Intent to Sue, the USFWS and INS/USBP have re-entered formal Section 7 consultation for both the Yuma and Tucson Sectors. The BA, which is expected to be submitted during May 2002, will address the daily operations of both sectors on numerous protected species. As part of this on-going consultation, however, the USBP has implemented several conservation measures designed to reduce or eliminate potential effects to Sonoran pronghorn including:

1. avoidance of fawning areas
2. minimizing helicopter hovering and landings to the extent practicable
3. coordination of flight schedules with the AGFD on a weekly basis
4. submitting monthly coordination reports to the Cabeza Prieta NWR
5. restricting USBP vehicles speeds to 25 mph on the Cabeza Prieta NWR

In addition, the USBP has recently initiated efforts to assist in funding joint studies on the effects of human disturbances on Sonoran pronghorn.

No impacts to protected species, including pronghorn, have been reported during the previous two operations, and therefore, none are expected from the continuation of this program. If impacts appear to imminent or do inadvertently occur, INS would enter into emergency consultation with the USFWS in compliance with the Endangered Species Act (50 CFR § 402.05). Fixed-wing aircraft and helicopter pilots would notify the USFWS of any protected species that are observed during the reconnaissance and rescue missions.

### 4.7.3 Fixed Wing Reconnaissance with Helicopter Rescues Only

The effects to biological resources resulting from implementation of this alternative would be similar to the Preferred Alternative.

## 4.8 Cultural Resources

### 4.8.1 No Action Alternative

Since the No Action Alternative would require that additional ground patrols be conducted, and in particular off-road rescue missions, the potential to adversely affect unknown, but potentially significant cultural resources would be increased. The magnitude of these effects, of course, would be dependent upon the number of off-road trips required, the location, and the number and type of vehicles used in the rescue mission.

### 4.8.2 Preferred Alternative

Implementation of Operation Skywatch would not affect cultural resources. Rescues using ground patrols, as discussed above, could potentially disturb significant, but yet unknown, sites. Helicopter rescue missions would also have the potential to disturb cultural resources sites, but the potential would be much less due to the amount of ground actually disturbed in comparison to off-road vehicle traffic.

### 4.8.3 Fixed Wing Reconnaissance with Helicopter Rescues Only

This alternative would have the least chance of disturbing cultural resources since it would significantly reduce ground disturbances by eliminating ground patrol rescues.

## 4.9 Socioeconomics

### 4.9.1 No Action Alternative

The No Action Alternative may create additional job opportunities, but only if funds were available to employ a sufficient number of USBP agents and support staff that could patrol the same amount of area in a similar time frame as Operation Skywatch. Since this is a highly unlikely situation, especially given the extreme time limitations, no direct effects to socioeconomic resources, beneficial or adverse, would be expected to occur as a result of the No Action Alternative.

### 4.9.2 Preferred Alternative

The Preferred Alternative would require up to 24 USBP pilots and up to12 mechanics to live within the Tucson Sector for about 125 days on an annual basis. This is a very negligible and temporary effect to the region's population. Likewise, some additional local expenditures will

result upon implementation of the Preferred Alternative, but the effects will be negligible given the temporary nature of the proposed action.

### 4.9.3 Fixed Wing Reconnaissance with Helicopter Rescues Only

Similar effects would occur upon implementation of this alternative as would be anticipated for the Preferred Alternative.

## 4.10 Environmental Justice and Protection of Children

This section of the EA addresses the Proposed Action's potential to generate disproportionately high and adverse human or environmental effects on minority and low-income populations, as required under Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." The predominance of the population (about 64) claims to non-Hispanic whites. The average per capita income (PCPI) of the families within the counties along the border is below the state and national average for PCPI. However, no construction activities or other permanent actions are expected to be located near minority or low-income residential and commercial areas. No displacement of residential or commercial structures or areas is anticipated as a result of this project. The project would beneficially affect the entire ROI regardless of race and/or income level, by saving lives regardless of race, nationality or income. Therefore, this project would not result in any violations of the intent of Executive Order 12898.

Executive Order 13045, "Protection of Children from Environmental Health Risks" requires that Federal agencies evaluate the potential to generate disproportionately high environmental health and safety risks to children. The actions proposed in this EA would not result in disproportionately high or adverse environmental health or safety impacts to children. To the contrary, the proposed action would increase the safety of children who are illegally attempting to enter the United States through the harsh southern Arizona desert.

## 4.11 Cumulative Impacts

This section of the EA addresses the potential cumulative impacts associated with the implementation of the alternatives outlined in Chapter 2.0 and other projects/programs that are planned for the region. The following paragraphs present a general discussion regarding cumulative effects that would be expected irrespective of the alternative selected.

The Council of Environmental Quality defines cumulative impacts as the incremental impact of multiple present and future actions with individually minor but collectively significant effects. Cumulative impacts can be concisely defined as the total effect of multiple land uses and developments, including their interrelationships, on the environment.

Currently, there are several on-going USBP projects along the U.S.-Mexico border within Arizona. On-going projects within the Naco-Douglas corridor include road improvement projects, installation of stadium and portable lights along the U.S.-Mexico border, and the installation of numerous RVS sites. In addition, in early May 2002, temporary stations (trailers) were established and placed within disturbed areas in the west desert. These temporary stations were placed at Bates Well in the National Park Service's Organ Pipe National Monument, and at the Los Vidrios camping area in the Cabeza Prieta National Wildlife Refuge. An EA was completed for this project. These projects are primarily for the purpose of facilitating deterrence and apprehension efforts. If apprehension is not assured, deterrence will not be achieved. Thus, in the absence of such projects there is the likelihood of an increase in possible border crossings into the rugged terrain and possibly an increase in UDA deaths within the summer months. The INS/USBP is currently preparing a Programmatic Environmental Impact Statement (PEIS) to address the potential effects of the Tucson and Yuma Sectors' daily operations on the human and natural environment along the Arizona border. This PEIS is scheduled for release in early summer 2002.

Impacts due to off-road rescue attempts are unquantifiable because the number of rescues cannot be determined at this point. There would also be an increase in the noise levels because of the helicopter overflights. The noise impacts would be sporadic and temporary and only for the duration of this project.

Resources, such as soil, water supplies, and air quality, would be impacted during and immediately after completion of Operation Skywatch each year. These impacts would be short term and none of these resources would be expected to incur significant cumulative impacts. None of the projects to date have indicated a potential excursion that could violate National air quality standards. Operation Skywatch would not remove any habitat from ecologic production. Any impacts to cultural resources sites, as a result of unexpected landings, would require immediate notification to the SHPO and interested Native American Nations and possible mitigation. General descriptions of the cumulative effects that occurred to select resources are described in the following paragraphs.

### 4.11.1 Wildlife

Long term indirect cumulative effects on wildlife populations have occurred and would continue to occur. However, these effects, both beneficial and adverse, are difficult, if not impossible, to quantify. Reductions in and fragmentation of habitat from urban development, highway and road construction, off-road traffic, and conversion to farmland have undoubtedly created inter- and intra-species competition for available food and shelter and, eventually, slight reductions in some wildlife populations. Increased patrol activities have increased the potential for some wildlife specimens to be accidentally hit and killed. Such losses would not be expected to result in significant reductions to the populations.

The increase in USBP lighting along the border also could have produced some long-term cumulative effects, although the magnitude of these effects in some areas is not presently known. Some species, such as insectivorous bats, may benefit from the concentration of insects that would be attracted to the lights. Circadian rhythms of other diurnal species, however, may be disturbed enough that breeding or feeding patterns are skewed, causing synergistic physiological changes. Most lighting is placed near urban areas, thus, reducing the chances of indirect effects, if any, to wildlife populations.

### 4.11.2 Sensitive Areas

USBP operations have occurred in unique and sensitive areas such as National Parks and National Wildlife Refuges. The USBP is authorized and mandated by the U.S. Congress to enter any lands within 25 miles of the border during the pursuit of illegal entrants. Consequently, when UDAs or smugglers attempt to illegally enter the U.S. through these sensitive areas, the USBP agents must attempt to apprehend them. Close coordination and approval from the appropriate agencies would be required for any construction activity potentially affecting any unique or sensitive areas (i.e., wilderness areas, conservation areas, national parks, etc.) to ensure adverse effects would be avoided or substantially minimized. Likewise, the USBP routinely coordinates with all Federal land managers regarding their operations on or above the agencies' lands. The USBP maintains several Memoranda of Understanding (MOU) or Agreement (MOA) with various agencies that stipulate how the USBP will use the land.

The USBP, Yuma Sector has maintained coordination with the USFWS and the AF&G in their efforts to avoid pronghorn herds in air patrol corridors. The USBP receives weekly telemetry location data for the pronghorn herds on the Cabeza Prieta and the Barry M. Goldwater Range and avoid areas of pronghorn concentration, especially during the fawning period, unless human life is endangered. The USBP has also provided air assistance to the Cabeza Prieta in support of their management efforts for the pronghorn.

### 4.11.3 Air Quality

Vehicles, aircraft, and heavy equipment have produced air emissions; however, these have not resulted in significant cumulative impacts due to the short duration of the activities, the dispersion capabilities of the region, and the remote locations of most of the operations.

# SECTION 5.0
# PUBLIC INVOLVEMENT

# 5.0 PUBLIC INVOLVEMENT

## 5.1 Agency Coordination

This chapter discusses consultation and coordination that will occur (or has occurred) during preparation of the draft and final versions of this document. This will include contacts that are made during the development of the proposed action and writing of the EA. Formal and informal coordination has been conducted with the following agencies:

- U.S. Fish and Wildlife Service (USFWS)
- U.S. Environmental Protection Agency (USEPA)
- Natural Resource Conservation Service (NRCS)
- Arizona State Historic Preservation Office (SHPO)
- Arizona Department of Transportation (ADOT)
- Arizona Game and Fish Department (AGFD)
- Arizona Department of Environmental Quality (ADEQ)
- Arizona Department of Agriculture

## 5.2 Public Review

The draft and final EAs have been made available for public review, and the Notice of Availability (NOA) was published in the local newspaper. The proof of publication is included in Appendix A. Exhibit 1 is a copy of the NOA that will be published for the final EA. Only two comment letters were received during the review period and changes were incorporated into this final EA (where applicable). The letters received with the specific comments are included in Appendix A. One letter was from the Tohono O'odham Nation requesting to include the jaguar in the protected species list. In addition, coordination of flight paths and schedules with the Nation's Director of Public Safety was also requested. Coordination between the USBP and the Nation concerning the flight schedules and paths will occur to the extent practicable. A letter was received from the Arizona SHPO concurring with the EA stating that no historic properties would be affected by the proposed action.

**EXHIBIT 5-1**

**NOTICE OF AVAILABILITY**
**FINAL ENVIRONMENTAL ASSESSMENT**
**OPERATION SKYWATCH**
**USBP TUCSON SECTOR, ARIZONA**

The public is hereby notified of the availability of the Final Environmental Assessment (EA) for the U.S. Army Corps of Engineers, Fort Worth District, the Immigration and Naturalization Service (INS), and the U.S. Border Patrol (USBP) Operation Skywatch. This EA addresses the potential impacts of the temporary expanded air operations on an annual basis along the US/Mexico border. The proposed project is to assist in identifying and providing humanitarian assistance to undocumented aliens who may be at risk due to overexposure during the summer months. The Final EA will be available for review at the Public Libraries in Douglas, Tucson, and Ajo, Arizona. Send written comments to Ms. Patience Patterson, U.S. Army Corps of Engineers, Fort Worth District, 819 Taylor Street, Room 3A14, Fort Worth, TX 76102. The website can be viewed at:
http://www.swf.usace.army.mil/INS/Pages/Publicreview.cfm

# SECTION 6.0
# REFERENCES

## 6.0 REFERENCES


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# SECTION 7.0
# LIST OF ACRONYMS/ABBREVIATIONS

## 7.0 LIST OF ACRONYMS/ABBREVIATIONS

| | |
|---|---|
| ADEQ | Arizona Department of Environmental Quality |
| AGL | Above ground level |
| AO | Area of Operations |
| AU | Arizona uplands |
| BLM | Bureau of Land Management |
| BMGR | Barry M. Goldwater Range |
| CFR | Code of Federal Regulations |
| CWA | Clean Water Act |
| CO | Carbon monoxide |
| dBA | Decibel—A-weighted scale |
| DoD | Department of Defense |
| E.O. | Executive Order |
| ESA | Endangered Species Act |
| FAA | Federal Aviation Administration |
| FLIR | Forward-looking infrared |
| FY | Fiscal Year |
| INA | Immigration and Nationality Act |
| INS | Immigration and Naturalization Service |
| LCRV | Lower Colorado River Valley |
| MSL | Mean sea level |
| $\mu g/m^3$ | Micrograms per cubic meter |
| mph | Miles per hour |
| $mg/m^3$ | Milligrams per cubic meter |
| MBTA | Migratory Bird Treaty Act |
| NAAQS | National Ambient Air Quality Standards |
| NPS | National Park Service |
| NEPA | National Environmental Policy Act of 1969 |
| $NO_2$ | Nitrogen Dioxide |
| NPDES | National Pollutant Discharge Elimination System |
| NPS | National Park Service |
| NRHP | National Register of Historic Places |
| NWR | National Wildlife Refuge |
| $O_3$ | Ozone |
| PCPI | Per capita personal income |
| $PM_{10}$ | Particulate matter |
| Pb | Lead |
| POE | Port of Entry |
| POL | Petroleum, oils and lubricants |
| ppm | Parts per million |
| ROI | Region of influence |
| EA | Environmental Assessment—out of order |
| SHPO | State Historic Preservation Office |
| $S0_2$ | Sulfur dioxide |
| UDA | Undocumented Alien |
| USACE | U.S. Army Corps of Engineers |
| USBP | U.S. Border Patrol |
| USC | United States Code |
| USDOI | U.S. Department of the Interior |
| USEPA | U.S. Environmental Protection Agency |
| USFS | U.S. Forest Service |

| | |
|---|---|
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |

# SECTION 8.0
# LIST OF PREPARERS

## 8.0 LIST OF PREPARERS

The following people were primarily responsible for preparing this Environmental Assessment.

| Name | Agency/Organization | Discipline/Expertise | Experience | Role In Preparing EA |
|---|---|---|---|---|
| Charles McGregor | U.S. Army Corps of Engineers | Biology/Chemistry | 8 years in NEPA and related studies | Technical Manager and EA review |
| Patience Patterson | U.S. Army Corps of Engineers | Archeology | 29 years in archaeology and cultural resource management | Technical Manager, and EA review and Section 106 coordination |
| Chris Ingram | Gulf South Research Corporation | Biology/Ecology | 23 years NEPA and related studies | EA Review |
| Suna Adam Knaus | Gulf South Research Corporation | Biology/Ecology | 15 years NEPA and related studies | Project Manager |
| John Lindemuth | Gulf South Research Corporation | Archaeology/Project Archaeologist | 10 years archaeological studies | Cultural resources and socioeconomics |
| Sharon Newman | Gulf South Research Corporation | GIS/Graphics | 9 years GIS analysis | Graphics and GIS |
| Donna Marie Bankston | Gulf South Research Corporation | Forestry | 1 year of Natural Resources and NEPA studies | EA Review |
| Denver Heath | INS A-E Resource Center | | | Program Manager and EA review and coordination |
| Charles Parsons | INS Western Region | Geology | 25 years of geotechnical and environmental related studies | Program Manager, Review |
| Kevin Feeney | INS Headquarters | Environmental Planning and Management and Hazardous Waste | 20 years of NEPA and hazardous waste studies | EA Review |
| Russ D'Hondt | INS Headquarters | Environmental Planning and Management | 14 Years of Environmental and NEPA Project Management | EA Review |

# APPENDIX A
# CORRESPONDENCE

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

REPLY TO
ATTENTION OF:

April 23, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Environmental Assessment (EA) for Operation Skywatch U.S. Border Patrol Yuma and Tucson Sectors

U.S. Fish and Wildlife Service
Arizona Ecological Service
ATTN: Mr. David Harlow
2321 West Royal Palm Road, Suite 103
Phoenix, AZ 85021-4915

Dear Mr. Harlow:

The Immigration and Naturalization Service (INS) through the U.S. Army Corps of Engineers (USACE Forth Worth District) intends to prepare an Environmental Assessment (EA) for temporary expanded air operations designed to reduce the number of fatalities of undocumented aliens and to enhance border enforcement activities within the Tucson Sector. Attached is a quadrangle map showing the project location.

We are currently in the process of gathering the most current information available regarding Federally listed species potentially occurring within this area of Arizona. The USACE respectfully requests that your agency provide a list of the protected species of Cochise, Santa Cruz, Pima, and Yuma Counties, Arizona along with a description of the sensitive resources (e.g., rare or unique plant communities, threatened and endangered and candidate species, etc.) that you believe may be affected by the proposed INS activities. Any information you may have regarding critical habitat areas for these species would also be greatly appreciated.

We intend to provide your agency with a copy of the Draft EA once it is completed. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft EA.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please feel free to call Mr. Charles McGregor at (817) 886-1708.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

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

REPLY TO
ATTENTION OF:

April 23, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Environmental Assessment (EA) for Operation Skywatch U.S. Border Patrol Yuma and Tucson Sectors

Mr. Jerry Perry, Regional Supervisor
Arizona Department of Game and Fish
555 North Greasewood Road
Tucson, AZ 85745

Dear Mr. Perry:

The Immigration and Naturalization Service (INS) through the U.S. Army Corps of Engineers (USACE Fort Worth District) intends to prepare an Environmental Assessment (EA) for temporary expanded air operations designed to reduce the number of fatalities of undocumented aliens and to enhance border enforcement activities within the Tucson Sector. Attached is a quadrangle map showing the project location.

We are currently in the process of gathering the most current information available regarding state listed species potentially occurring within this area of Arizona. USACE respectfully requests that your agency provide a list of the protected species of Cochise, Santa Cruz, Pima, and Yuma Counties, Arizona along with a description of the sensitive resources (e.g., rare or unique plant communities, threatened and endangered and candidate species, etc.) that you believe may be affected by the proposed INS activities. Any information you may have regarding critical habitat areas for these species would also be greatly appreciated.

We intend to provide your agency with a copy of the Draft EA once it is completed. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft EA.

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Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

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

REPLY TO
ATTENTION OF:

April 26, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

Mr. James Garrison, State Historic Preservation Officer
ATTN: Ms. Joanne Medley
Arizona State Parks
1300 West Washington
Phoenix, Arizona 85007

Dear Mr. Garrison:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP), is initiating the consultation process with your office regarding the proposed project noted above.

The Fort Worth District, acting for INS, is also preparing an Environmental Assessment for this proposed action. As soon as the draft document is available you will be sent a copy for your immediate review and comment.

The proposed action consists of the annual, but temporary expanded air operations designed to reduce the number of fatalities of undocumented aliens and enhance border enforcement activities within the USBP Tucson Sector. These activities are proposed to occur between the months of June and October. However, the exact schedule and duration might change each year due to climatic conditions and illegal traffic patterns (see attached figure).

The purpose of the proposed action is to assist in identifying and providing humanitarian assistance to undocumented aliens and illegal drug traffickers who may be at risk of dying due to overexposure along the US/Mexico border within the U.S. Border Patrol, Tucson Sector's Areas of Operations. Because of extremely hot weather during the summer in the Tucson Sector, many undocumented immigrants traversing the remote desert and mountain areas are subject to extreme physical stress and probable death without assistance.

The proposed project is scheduled to commence on 1 June 2002 and continue for approximately 123 days (on or about 28 September 2002). The US Border Patrol, Tucson Sector proposes to maintain and operate fixed winged aircraft and helicopters for a temporary basis for aerial reconnaissance missions along the Douglas/Naco Corridor and the West Desert Corridor, Arizona.

If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

for William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

Copy furnished w/o enclosure

Charles H. Parsons
Regional Environmental Officer
Immigration and Naturalization Service
Administrative Center Laguna
P.O. Box 30080 Laguna Niguel, CA 92607-0080

Mr. Gilbert R. Estrada
Senior Tactical Coordinator
United State Border Patrol
Tucson Sector
1970 West Ajo Way
Tucson, Arizona 85713

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

REPLY TO
ATTENTION OF:

April 26, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

Honorable Edward Manuel, Chairman
Tohono O'odham Nation
P.O. Box 837
Sells, AZ 85634

Dear Chairman Manuel:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service and the US Border Patrol, is notifying you of the proposed project mentioned above and requesting your input. We wish to continue our consultation process with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you regarding known sacred sites or other traditional cultural properties within the proposed project area. The Fort Worth District, acting for INS, is also preparing an Environmental Assessment for this proposed action. As soon as the draft document is available you will be sent a copy for your immediate review and comment.

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desert and mountain areas are subject to extreme physical stress and probable death without assistance.

The proposed project is scheduled to commence on 1 June 2002 and continue for approximately 123 days (on or about 28 September 2002). The US Border Patrol, Tucson Sector proposes to maintain and operate fixed winged aircraft and helicopters for a temporary basis for aerial reconnaissance missions along the Douglas/Naco Corridor and the West Desert Corridor, Arizona.

If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

Copy Furnished w/o enclosure:

Mr. Eric Verwers
INS Architect/Engineer Resource
819 Taylor St. Room 3A28
Fort Worth, TX 76102-0300

Mr. Gilbert Estrada
Tucson Sector Headquarters,
1970 West Ajo Way
Tucson, Arizona 85713

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

REPLY TO
ATTENTION OF:

April 26, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

Honorable Ivan Malik, President
Salt River Pima-Maricopa Indian Community Council
10005 E. Osborn
Scottsdale, AZ 85256

Dear President Malik:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service and the US Border Patrol, is notifying you of the proposed project mentioned above and requesting your input. We wish to continue our consultation process with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you regarding known sacred sites or other traditional cultural properties within the proposed project area. The Fort Worth District, acting for INS, is also preparing an Environmental Assessment for this proposed action. As soon as the draft document is available you will be sent a copy for your immediate review and comment.

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If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

Copy Furnished w/o enclosure:

Mr. Eric Verwers
INS Architect/Engineer Resource
819 Taylor St. Room 3A28
Fort Worth, TX 76102-0300

Mr. Gilbert Estrada
Tucson Sector Headquarters,
1970 West Ajo Way
Tucson, Arizona 85713

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

REPLY TO
ATTENTION OF:

April 26, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

Honorable Wayne Taylor, Jr., Chairman
ATTN: Mr. Leigh J. Kuwanwisiwma
Hopi Tribal Council
P.O. Box 123
Kykotsmovi, AZ 86039

Dear Chairman Taylor:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service and the US Border Patrol, is notifying you of the proposed project mentioned above and requesting your input. We wish to continue our consultation process with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you regarding known sacred sites or other traditional cultural properties within the proposed project area. The Fort Worth District, acting for INS, is also preparing an Environmental Assessment for this proposed action. As soon as the draft document is available you will be sent a copy for your immediate review and comment.

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desert and mountain areas are subject to extreme physical stress and probable death without assistance.

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If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

Copy Furnished w/o enclosure:

Mr. Eric Verwers
INS Architect/Engineer Resource
819 Taylor St. Room 3A28
Fort Worth, TX 76102-0300

Mr. Gilbert Estrada
Tucson Sector Headquarters,
1970 West Ajo Way
Tucson, Arizona 85713

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

REPLY TO
ATTENTION OF:

April 26, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

Honorable Donald R. Antone, Governor
Gila River Indian Community Council
P.O. Box 97
Sacaton, AZ 85247

Dear Governor Antone:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service and the US Border Patrol, is notifying you of the proposed project mentioned above and requesting your input. We wish to continue our consultation process with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you regarding known sacred sites or other traditional cultural properties within the proposed project area. The Fort Worth District, acting for INS, is also preparing an Environmental Assessment for this proposed action. As soon as the draft document is available you will be sent a copy for your immediate review and comment.

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If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

Copy Furnished w/o enclosure:

Mr. Eric Verwers
INS Architect/Engineer Resource
819 Taylor St. Room 3A28
Fort Worth, TX 76102-0300

Mr. Gilbert Estrada
Tucson Sector Headquarters,
1970 West Ajo Way
Tucson, Arizona 85713

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

REPLY TO
ATTENTION OF:

April 26, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

Honorable Mike Jackson, Sr., President
Fort Yuma-Quechan Tribe
350 Picacho Rd.
Winterhaven, CA 92283

Dear President Jackson:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service and the US Border Patrol, is notifying you of the proposed project mentioned above and requesting your input. We wish to continue our consultation process with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you regarding known sacred sites or other traditional cultural properties within the proposed project area. The Fort Worth District, acting for INS, is also preparing an Environmental Assessment for this proposed action. As soon as the draft document is available you will be sent a copy for your immediate review and comment.

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The proposed project is scheduled to commence on 1 June 2002 and continue for approximately 123 days (on or about 28 September 2002). The US Border Patrol, Tucson Sector proposes to maintain and operate fixed winged aircraft and helicopters for a temporary basis for aerial reconnaissance missions along the Douglas/Naco Corridor and the West Desert Corridor, Arizona.

If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

Copy Furnished w/o enclosure:

Mr. Eric Verwers
INS Architect/Engineer Resource
819 Taylor St. Room 3A28
Fort Worth, TX 76102-0300

Mr. Gilbert Estrada
Tucson Sector Headquarters,
1970 West Ajo Way
Tucson, Arizona 85713

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

REPLY TO
ATTENTION OF:

April 26, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

Honorable Sherry Cordova, Chairperson
Cocopah Indian Tribe
County 15th and Avenue G
Somerton, AZ 85350

Dear Chairperson Cordova:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service and the US Border Patrol, is notifying you of the proposed project mentioned above and requesting your input. We wish to continue our consultation process with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you regarding known sacred sites or other traditional cultural properties within the proposed project area. The Fort Worth District, acting for INS, is also preparing an Environmental Assessment for this proposed action. As soon as the draft document is available you will be sent a copy for your immediate review and comment.

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If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

Copy Furnished w/o enclosure:

Mr. Eric Verwers
INS Architect/Engineer Resource
819 Taylor St. Room 3A28
Fort Worth, TX 76102-0300

Mr. Gilbert Estrada
Tucson Sector Headquarters,
1970 West Ajo Way
Tucson, Arizona 85713

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

REPLY TO
ATTENTION OF:

April 26, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

Honorable Delia Carlyle, Chairperson
Ak Chin Indian Community Council
42507 W. Peters & Nall Road
Maricopa, AZ 85239

Dear Chairperson Carlyle:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service and the US Border Patrol, is notifying you of the proposed project mentioned above and requesting your input. We wish to continue our consultation process with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you regarding known sacred sites or other traditional cultural properties within the proposed project area. The Fort Worth District, acting for INS, is also preparing an Environmental Assessment for this proposed action. As soon as the draft document is available you will be sent a copy for your immediate review and comment.

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If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

Copy Furnished w/o enclosure:

Mr. Eric Verwers
INS Architect/Engineer Resource
819 Taylor St. Room 3A28
Fort Worth, TX 76102-0300

Mr. Gilbert Estrada
Tucson Sector Headquarters,
1970 West Ajo Way
Tucson, Arizona 85713

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

REPLY TO
ATTENTION OF:

April 26, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

Honorable Benito F. Valencia, Chairman
Pascua Yaqui Tribe
7474 S. Camino de Oeste
Tucson, AZ 85746

Dear Chairman Valencia:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service and the US Border Patrol, is notifying you of the proposed project mentioned above and requesting your input. We wish to continue our consultation process with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you regarding known sacred sites or other traditional cultural properties within the proposed project area. The Fort Worth District, acting for INS, is also preparing an Environmental Assessment for this proposed action. As soon as the draft document is available you will be sent a copy for your immediate review and comment.

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If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

Copy Furnished w/o enclosure:

Mr. Eric Verwers
INS Architect/Engineer Resource
819 Taylor St. Room 3A28
Fort Worth, TX 76102-0300

Mr. Gilbert Estrada
Tucson Sector Headquarters,
1970 West Ajo Way
Tucson, Arizona 85713

S.H.P.O.- 2002 - 859 (10968) and (10810)

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

RECEIVED
MAY 06 2002
ARIZONA STATE PARKS/S.H.P.O.

REPLY TO
ATTENTION OF:

May 1, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

WA
PER-E

Mr. James Garrison, State Historic Preservation Officer
ATTN: Ms. Joanne Medley
Arizona State Parks
1300 West Washington
Phoenix, Arizona 85007

Dear Mr. Garrison:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP) has prepared a draft environmental assessment on the proposed project mentioned above. As noted in our letter of April 26, 2002, we are sending you a copy of the draft EA

The proposed project is scheduled to commence on 1 June 2002 and continue for approximately 123 days (on or about 28 September 2002). The US Border Patrol, Tucson Sector proposes to maintain and operate fixed winged aircraft and helicopters for a temporary basis for aerial reconnaissance missions along the Douglas/Naco Corridor and the West Desert Corridor, Arizona.

As noted in the document, implementation of Operation Skywatch would not affect cultural resources. In this case, we ask for your concurrence with our determination of no historic properties affected.

If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

Copy furnished w/o enclosure

Charles H. Parsons
Regional Environmental Officer
Immigration and Naturalization Service
Administrative Center Laguna
P.O. Box 30080 Laguna Niguel, CA 92607-0080

Mr. Gilbert R. Estrada
Senior Tactical Coordinator
United State Border Patrol
Tucson Sector
1970 West Ajo Way
Tucson, Arizona 85713

Concur
No Historic Properties Affected
for Arizona State Historic Preservation Officer
Arizona State Parks Board

This letter should have come from INS.
May 16, 2002

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

REPLY TO
ATTENTION OF:

May 1, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

Mr. James Garrison, State Historic Preservation Officer
ATTN: Ms. Joanne Medley
Arizona State Parks
1300 West Washington
Phoenix, Arizona 85007

Dear Mr. Garrison:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP) has prepared a draft environmental assessment on the proposed project mentioned above. As noted in our letter of April 26, 2002, we are sending you a copy of the draft EA

The proposed project is scheduled to commence on 1 June 2002 and continue for approximately 123 days (on or about 28 September 2002). The US Border Patrol, Tucson Sector proposes to maintain and operate fixed winged aircraft and helicopters for a temporary basis for aerial reconnaissance missions along the Douglas/Naco Corridor and the West Desert Corridor, Arizona.

As noted in the document, implementation of Operation Skywatch would not affect cultural resources. In this case, we ask for your concurrence with our determination of no historic properties affected.

If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

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Mr. Gilbert R. Estrada
Senior Tactical Coordinator
United State Border Patrol
Tucson Sector
1970 West Ajo Way
Tucson, Arizona 85713

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

REPLY TO
ATTENTION OF:

May 1, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

Honorable Delia Carlyle, Chairperson
Ak Chin Indian Community Council
42507 W. Peters & Nall Road
Maricopa, AZ 85239

Dear Chairperson Carlyle:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP) has prepared a draft environmental assessment on the proposed project mentioned above. As noted in our letter of April 26, 2002, we are sending you a copy of the draft EA

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As noted in the document, implementation of Operation Skywatch would not affect cultural resources. In this case, we have asked for concurrence from the Arizona State Historic Preservation Officer (SHPO) with our determination of no historic properties affected.

If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

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Charles H. Parsons
Regional Environmental Officer
Immigration and Naturalization Service
Administrative Center Laguna
P.O. Box 30080 Laguna Niguel, CA 92607-0080

Mr. Gilbert R. Estrada
Senior Tactical Coordinator
United State Border Patrol
Tucson Sector
1970 West Ajo Way
Tucson, Arizona 85713

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

REPLY TO
ATTENTION OF:

May 1, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

Honorable Sherry Cordova, Chairperson
Cocopah Indian Tribe
County 15th and Avenue G
Somerton, AZ 85350

Dear Chairperson Cordova:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP) has prepared a draft environmental assessment on the proposed project mentioned above. As noted in our letter of April 26, 2002, we are sending you a copy of the draft EA

The proposed project is scheduled to commence on 1 June 2002 and continue for approximately 123 days (on or about 28 September 2002). The US Border Patrol, Tucson Sector proposes to maintain and operate fixed winged aircraft and helicopters for a temporary basis for aerial reconnaissance missions along the Douglas/Naco Corridor and the West Desert Corridor, Arizona.

As noted in the document, implementation of Operation Skywatch would not affect cultural resources. In this case, we have asked for concurrence from the Arizona State Historic Preservation Officer (SHPO) with our determination of no historic properties affected.

If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

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Charles H. Parsons
Regional Environmental Officer
Immigration and Naturalization Service
Administrative Center Laguna
P.O. Box 30080 Laguna Niguel, CA 92607-0080

Mr. Gilbert R. Estrada
Senior Tactical Coordinator
United State Border Patrol
Tucson Sector
1970 West Ajo Way
Tucson, Arizona 85713

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

REPLY TO
ATTENTION OF:

May 1, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

Honorable Donald R. Antone, Governor
Gila River Indian Community Council
P.O. Box 97
Sacaton, AZ 85247

Dear Governor Antone:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP) has prepared a draft environmental assessment on the proposed project mentioned above. As noted in our letter of April 26, 2002, we are sending you a copy of the draft EA

The proposed project is scheduled to commence on 1 June 2002 and continue for approximately 123 days (on or about 28 September 2002). The US Border Patrol, Tucson Sector proposes to maintain and operate fixed winged aircraft and helicopters for a temporary basis for aerial reconnaissance missions along the Douglas/Naco Corridor and the West Desert Corridor, Arizona.

As noted in the document, implementation of Operation Skywatch would not affect cultural resources. In this case, we have asked for concurrence from the Arizona State Historic Preservation Officer (SHPO) with our determination of no historic properties affected.

If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

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Charles H. Parsons
Regional Environmental Officer
Immigration and Naturalization Service
Administrative Center Laguna
P.O. Box 30080 Laguna Niguel, CA 92607-0080

Mr. Gilbert R. Estrada
Senior Tactical Coordinator
United State Border Patrol
Tucson Sector
1970 West Ajo Way
Tucson, Arizona 85713

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

REPLY TO
ATTENTION OF:

May 1, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

Honorable Wayne Taylor, Jr., Chairman
ATTN: Mr. Leigh J. Kuwanwisiwma
Hopi Tribal Council
P.O. Box 123
Kykotsmovi, AZ 86039

Dear Chairman Taylor:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP) has prepared a draft environmental assessment on the proposed project mentioned above. As noted in our letter of April 26, 2002, we are sending you a copy of the draft EA

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As noted in the document, implementation of Operation Skywatch would not affect cultural resources. In this case, we have asked for concurrence from the Arizona State Historic Preservation Officer (SHPO) with our determination of no historic properties affected.

If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

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Charles H. Parsons
Regional Environmental Officer
Immigration and Naturalization Service
Administrative Center Laguna
P.O. Box 30080 Laguna Niguel, CA 92607-0080

Mr. Gilbert R. Estrada
Senior Tactical Coordinator
United State Border Patrol
Tucson Sector
1970 West Ajo Way
Tucson, Arizona 85713

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

REPLY TO
ATTENTION OF:

May 1, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

Honorable Benito F. Valencia, Chairman
Pascua Yaqui Tribe
7474 S. Camino de Oeste
Tucson, AZ 85746

Dear Chairman Valencia:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP) has prepared a draft environmental assessment on the proposed project mentioned above. As noted in our letter of April 26, 2002, we are sending you a copy of the draft EA

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As noted in the document, implementation of Operation Skywatch would not affect cultural resources. In this case, we have asked for concurrence from the Arizona State Historic Preservation Officer (SHPO) with our determination of no historic properties affected.

If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

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Charles H. Parsons
Regional Environmental Officer
Immigration and Naturalization Service
Administrative Center Laguna
P.O. Box 30080 Laguna Niguel, CA 92607-0080

Mr. Gilbert R. Estrada
Senior Tactical Coordinator
United State Border Patrol
Tucson Sector
1970 West Ajo Way
Tucson, Arizona 85713

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

REPLY TO
ATTENTION OF:

May 1, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

Honorable Ivan Malik, President
Salt River Pima-Maricopa Indian Community Council
10005 E. Osborn
Scottsdale, AZ 85256

Dear President Malik:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP) has prepared a draft environmental assessment on the proposed project mentioned above. As noted in our letter of April 26, 2002, we are sending you a copy of the draft EA

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If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

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Charles H. Parsons
Regional Environmental Officer
Immigration and Naturalization Service
Administrative Center Laguna
P.O. Box 30080 Laguna Niguel, CA 92607-0080

Mr. Gilbert R. Estrada
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United State Border Patrol
Tucson Sector
1970 West Ajo Way
Tucson, Arizona 85713

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

REPLY TO
ATTENTION OF:

May 1, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Immigration & Naturalization Service (INS) US Border Patrol (USBP) Tucson Sector Operation Skywatch 2002

Honorable Edward Manuel, Chairman
Tohono O'odham Nation
P.O. Box 837
Sells, AZ 85634

Dear Chairman Manuel:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP) has prepared a draft environmental assessment on the proposed project mentioned above. As noted in our letter of April 26, 2002, we are sending you a copy of the draft EA

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As noted in the document, implementation of Operation Skywatch would not affect cultural resources. In this case, we have asked for concurrence from the Arizona State Historic Preservation Officer (SHPO) with our determination of no historic properties affected.

If you require any additional information at this time please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

Copy furnished w/o enclosure

Charles H. Parsons
Regional Environmental Officer
Immigration and Naturalization Service
Administrative Center Laguna
P.O. Box 30080 Laguna Niguel, CA 92607-0080

Mr. Gilbert R. Estrada
Senior Tactical Coordinator
United State Border Patrol
Tucson Sector
1970 West Ajo Way
Tucson, Arizona 85713

# TOHONO O'ODHAM NATION

**CULTURAL AFFAIRS DEPARTMENT**

**P.O. BOX 837 • SELLS, AZ 85634**

**Telephone (520) 383-3622 • Fax (520) 383-337**


May 20, 2002

William Fickel, Jr.
Chief, Planning Environmental
And Regulatory Division
Department of the Army
Fort Worth District, Corps of Engineer
P.O. Box 17300
Forth Worth, Texas 76102-0300

Dear Mr. Fickel:

Thank you for the opportunity to review and comment on the INS-U.S. Border Patrol Tucson Sector Operation Skywatch 2002.

After reviewing the draft environmental assessment, the Cultural Affairs Office has the following comments.

1.) INS/BP should coordinate flight paths & schedules with Mr. Richard Clifton, Director of Public Safety, Tohono O'odham Nation.

2.) Low flights over villages should be avoided whenever possible .

3.) Endangered species lists show in Table 3-2 does not include jaguar which it should.

4.) Whenever possible, vehicle traffic should stay on existing roads.

5.) Flight schedule should be reviewed by the Nation's Wildlife and Vegetation Management Program.

Sincerely,

Peter L. Steere, Manager
Cultural Affairs Office

# APPENDIX B
# SCOPING

STAR PUBLISHING COMPANY

Tucson, Arizona

STATE OF ARIZONA)
COUNTY OF PIMA)

Janice Anderson, being first duly sworn deposes and says: that she is the Legal Advertising Representative of the **STAR PUBLISHING COMPANY**, a corporation organized and existing under the laws of the State of Arizona, and that the said **STAR PUBLISHING COMPANY** prints and publishes The Arizona Daily Star, a daily newspaper printed and published in the City of Tucson, Pima County, State of Arizona, and having a general circulation in said City, County, State and elsewhere, and that the attached

Legal Notice

was printed and published correctly in the entire issue of the said The Arizona Daily Star on each of the following dates, to-wit:

April 30, 2002

Janice Anderson

Subscribed and sworn to before me this 2nd day of May, 2002

Carla D. Gamez
Notary Public

OFFICIAL SEAL
CARLA D. GAMEZ
NOTARY PUBLIC - ARIZONA
PIMA COUNTY
My Comm. Expires 06/30/04

My commission expires

TNI AD NO. 733794

**LEGAL NOTICE**
**NOTICE OF AVAILABILITY**
**DRAFT ENVIRONMENTAL ASSESSMENT**
**OPERATION SKYWATCH**
**USBP TUCSON SECTOR, ARIZONA**

The public is hereby notified of the availability of the Draft Environmental Assessment (EA) for the U.S. Army Corps of Engineers, Fort Worth District, the Immigration and Naturalization Service (INS), and the U.S. Border Patrol (USBP) Operation Skywatch. This EA addresses the potential impacts of the temporary expanded air operations on an annual basis along the US/Mexico border. The proposed project is to assist in identifying and providing humanitarian assistance to undocumented aliens who may be at risk due to overexposure during the summer months. The Draft EA will be available for review at the Public Libraries in Douglas, Tucson, Naco, Nogales, and Ajo, Arizona. Send written comments to Ms. Patience Patterson, U.S. Army Corps of Engineers, Fort Worth District, 817 Taylor Street, Room 3A14, Fort Worth, TX 76102. The website can be viewed at: http://www.swf.usace.army.mil/INS/Pages/Publicreview.cfm Comments will be received until 31 May 2002.
Publish April 30, 2002
The Arizona Daily Star